



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

# Record of Proceedings, Including Reasons for Decision

In the Matter of

Proponent

Cameco Corporation

Subject

Environmental Assessment Screening  
Report for the Cigar Lake Water Inflow  
Management Project

Date of  
Hearing

June 28, 2011

## **RECORD OF PROCEEDINGS**

Proponent: Cameco Corporation

Address/Location: 2121 – 11<sup>th</sup> Street West  
Saskatoon, Saskatchewan  
Canada S7M 1J3

Purpose: Screening Environmental Assessment Report for the  
Cigar Lake Water Inflow Management Project

Date of Application  
for Licensing Action: December 17, 2008

Date (s) of hearing: June 28, 2011

Location: Canadian Nuclear Safety Commission (CNSC) Public  
Hearing Room, 280 Slater St., 14th. Floor, Ottawa, Ontario

Members present: M. Binder, Chair

Secretary: M. Leblanc  
Recording Secretary: S. Dimitrijevic

## Table of Contents

<b>Introduction</b> .....	1
<b>Decision</b> .....	3
<b>Issues and Commission Findings</b> .....	3
<b>Screening Report</b> .....	3
<i>Completeness of the Screening Report</i> .....	4
<i>Adequacy of the Assessment Method</i> .....	4
<i>Likelihood and Significance of Environmental Effects</i> .....	5
<i>Effects of the Project on the Environment</i> .....	5
<i>Effects of the Environment on the Project</i> .....	5
<i>Effects of Malfunctions and Accidents</i> .....	6
<i>Cumulative Effects</i> .....	6
<i>Follow-Up Monitoring Program</i> .....	6
<i>Nature and Level of Public Concern</i> .....	7
<b>Approval to Construct</b> .....	7
<b>Conclusion</b> .....	8

## Introduction

1. Cameco Corporation (Cameco) has notified the Canadian Nuclear Safety Commission<sup>1</sup> (CNSC) of its intention to construct and operate a new water management system for its Cigar Lake Project, and requested authorization to undertake necessary related activities.
2. Cameco submitted the project description for the proposed Water Inflow Management Project in December 2008. The activities proposed by Cameco under this project include the construction, operation and decommissioning of the following changes to the existing water inflow management system:
  - modification of the water handling and effluent treatment release facilities; and
  - construction of two new parallel discharge pipelines that will deliver treated water to the discharge point within Seru Bay of Waterbury Lake in Northern Saskatchewan.
3. The construction of the new water management system and proposed modifications to water treatment facility are expected to result in better dilution of the effluent, improving thus environmental protection. The completed project will establish a water handling system that will effectively manage the potential increased quantities of water inflow expected and experienced during the construction and operation of the Cigar Lake Project.
4. Cameco currently holds a uranium mine construction licence (UMCL-MINE-CIGAR.00/2013) for the Cigar Lake Project, and the request for authorization of the proposed activities stems from the condition 3.1 of the licence that allows the Commission, or a person authorized by the Commission (in that case, the Director General, Directorate of Nuclear Cycle and Facilities Regulation), to approve the modifications to the facilities. Before the Commission can make a decision with respect to the proposed activities, pursuant to the *Nuclear Safety and Control Act*<sup>2</sup> (NSCA), it must make a decision on an Environmental Assessment (EA) screening of the proposed activities, in accordance with the requirements of the *Canadian Environmental Assessment Act*<sup>3</sup> (CEAA).
5. The CEAA requires that an EA be completed if there is both a “project” and a prescribed action by a federal authority (commonly referred to as a “trigger”). Cameco’s proposal involves the activities in relation to a physical work (modifications to the effluent treatment release facilities and the construction of two discharge pipelines), so that there is a “project” as defined in section 2 of the CEAA. An approval under licence condition 3.1 constitutes a “trigger” under paragraph 5(1)(d) of the CEAA because in giving an approval, the CNSC would be taking an action “under a provision prescribed pursuant to paragraph 59(f)” of the CEAA.

---

<sup>1</sup> 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.

<sup>2</sup> Statutes of Canada (S.C.), 1997, chapter (c.) 9.

<sup>3</sup> S.C., 1992, c. 37.

6. The CNSC and Fisheries and Oceans Canada (DFO) are the responsible authorities<sup>4</sup> (RA) for the EA. Therefore, pursuant to subsection 18(1) of the CEAA, the CNSC is required to ensure the conduct of a screening EA and the preparation of a screening report before the proposed approval decision can be made. Health Canada, Natural Resources Canada, Transport Canada (TC) and Environment Canada (EC) were identified as Federal Authorities (FA) and, on request, provided technical expertise during the review process. The Saskatchewan Ministry of Environment (SOME) also requires an EA in accordance with subsection 16(2) (c) of *The Environmental Assessment Act*<sup>5</sup> of Saskatchewan.
7. As required under sections 15 and 16 of the CEAA, Guidelines for the EA (EA Guidelines) for the proposed project, including statements of the scope of the project and scope of the assessment, were prepared by CNSC staff. On December 11, 2009, the Commission approved and issued EA Guidelines to the proponent (Scope of Project and Assessment), for the development of an Environmental Impact Statement (EIS) by Cameco. The proposed Environmental Assessment Screening Report (EASR) was developed based on the review of the EIS and on technical studies submitted by Cameco. The EASR is attached as an appendix to CMD 11-H112.

#### Issues

8. In considering the Screening Report, the Commission was required to decide:
  - a) whether the Screening Report is complete; that is, whether all of the factors and instructions set out in the approved EA Guidelines and subsection 16(1) of the CEAA were adequately addressed;
  - b) whether the project, taking into account the mitigation measures identified in the Screening Report, is likely to cause significant adverse environmental effects; and
  - c) whether the project must be referred to the federal Minister of the Environment for referral to a review panel or mediator, pursuant to paragraph 20(1)(c) of the CEAA.

In considering Cameco's application for a licence-related action, the Commission was required to decide:

- d) if the licensee is qualified to carry on the proposed modified activities; and
- e) if, in carrying on these activities, the licensee would make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

---

<sup>4</sup> Responsible Authority in relation to an EA is determined in accordance with subsection 11(1) of the CEAA.

<sup>5</sup> Saskatchewan Statutes and Regulations, S.S. 1979-80, c.E-10.1

### Hearing

9. Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission to review the proposed Screening Report and licence-related action. The Commission, in making its decision, considered information presented for a hearing held on June 28, 2011 in Ottawa. During the hearing, the Commission received written submissions from Cameco (CMD 11-H112.1) and from CNSC staff (CMD 11-H112). The public was invited to comment, in writing, on Cameco's application. There were no interventions submitted by the public.

### **Decision**

10. Based on its consideration of the matter,

the Commission decides that:

- a) the Environmental Assessment Screening Report appended to CMD 11-H112 is complete; the scope of the project and the scope of assessment were appropriately determined in accordance with sections 15 and 16 of the *Canadian Environmental Assessment Act*, and all of the required assessment factors were addressed during the assessment;
- b) the project, taking into account the mitigation measures identified in the Environmental Assessment Screening Report, is not likely to cause significant adverse environmental effects;
- c) it will not refer the project to the federal Minister of the Environment for his referral to a review panel or mediator.

the Commission also approves the construction of the facilities for the Cigar Lake Water Inflow Management Project, according to licence condition 3.1 of the Cigar Lake construction licence UMCL-MINE-CIGAR.00/2013.

11. With this construction approval, the Commission delegates to CNSC staff (the Director General, Directorate of Nuclear Cycle and Facilities Regulation) the authority to approve the operation of the constructed activities, once CNSC staff is satisfied that all operational controls and the implementation of the regular compliance monitoring and follow-up program are adequate.

### **Issues and Commission Findings**

#### **Screening Report**

12. With regards to the EASR, the Commission addressed the following issues: the completeness of the Screening Report, the adequacy of the assessment method, the likelihood and significance of environmental effects, and the nature and level of public

concern. The findings of the Commission, summarized below, are based on the Commission's consideration of all the information and submissions available for reference on the record for the hearing.

***Completeness of the Screening Report***

13. In its consideration of the completeness of the EA Screening Report (EASR), the Commission considered whether the assessment had adequately addressed and appropriately defined the scope of the project and the assessment factors.
14. The Commission reviewed the EASR and is of the opinion that it includes a detailed description of the project, an analysis of potential project impacts, the existing environment, a description of the assessment method, an environmental effects assessment, a description of the public and government participation, and the plan for a follow-up program.
15. The Commission concluded that the EASR is complete and in accordance with the requirements of the CEAA. The Commission is therefore able to proceed to its consideration of the adequacy of the assessment method, the likelihood and significance of the environmental effects of the project including the adequacy of the proposed mitigation measures, and the public concerns about the project.

***Adequacy of the Assessment Method***

16. In their submission, CNSC staff confirmed that Cameco followed, in its EA Study, the structure outlined in the EA Guidelines approved by the Commission.
17. CNSC staff noted that all project activities were examined to identify those that could possibly interact with any of the identified bio-physical environmental components. After having assessed the potential environmental effects of the project, mitigation measures for these potential effects were considered and the residual effects remaining after application of the measures were evaluated for their significance.
18. With respect to the adequacy of consultations, CNSC staff reported that a notice of the public and aboriginal review period on the Draft EA Screening Report, Technical Review Comments and EIS were posted on the Canadian Environmental Assessment Registry (CEAR; 09-01-46666), the CNSC Web site, and the SMOE Web site. CNSC staff added that all EA documents subject to public review were provided to eleven Northern Saskatchewan communities and two environmental interest groups. No comments were received on the Draft EA Screening Report. One member of the public submitted a letter of opposition to the Cigar Lake Project, but did not comment on the content of the draft EA Screening Report.
19. CNSC staff added that none of the Aboriginal groups contacted expressed concerns that the proposed project would adversely impact their Aboriginal or Treaty rights.

20. The Commission is satisfied that the method used to consult during the EA, including opportunities to comment and review the EASR, is acceptable and provides a suitable basis for the Commission to evaluate the public concerns about the project. Based on its review of the EASR and the above information, the Commission concludes that the EA methods are acceptable and appropriate, and that the EASR is complete and compliant with the requirements of the CEEA.

### *Likelihood and Significance of Environmental Effects*

21. This section contains the Commission's findings with respect to whether the project, taking into account the identified mitigation measures, is likely to cause significant adverse environmental effects. In examining this question, the Commission considered the predicted effects on the relevant components of the environment.

### *Effects of the Project on the Environment*

22. CNSC staff reported that interactions between the environmental components and the project works are illustrated in the proposed EASR. These interactions were analyzed to determine whether they are likely to result in a measurable effect and, if so, to describe that effect on the relevant Valued Ecosystem Components (VECs).
23. CNSC staff further reported that 174 potential interactions were identified: 58 during the construction; 57 during the operation and 59 during the decommissioning phase. Each of the potential interactions was assessed and those expected to result in measurable effects were further analyzed to consider application of mitigation measures. The significance of all residual effects was also determined to be not significant.
24. The Commission is satisfied that the likelihood and significance of the effects of the project on the environment have been identified with reasonable certainty and recognizes the importance of properly implementing mitigation measures to ensure that these are not significant. In this regard, the Commission expects CNSC staff to ensure that appropriate monitoring activities are implemented to verify whether these mitigation measures remain effective.
25. Based on its review of the EASR and the above noted information provided on the record, the Commission concludes that the proposed project, taking into account the implementation of mitigation measures identified in the EASR, is not likely to cause significant adverse effects to the environment.

### *Effects of the Environment on the Project*

26. CNSC staff reported that potential environmental events that may affect the project and, in turn, cause adverse effects on the environment were identified and assessed. CNSC staff added that contingency measures are described in Cameco's Emergency



Preparedness and Response Program and may include first aid, fire fighting, spill response or other activities in the unlikely event of an extreme natural event. CNSC staff stated that no residual adverse effects on the project or, in turn, on the environment are likely to result from natural hazards.

27. Based on the above information, the Commission concludes that the environment is not likely to cause adverse effects on the proposed project.

#### *Effects of Malfunctions and Accidents*

28. CNSC staff has identified the activities potentially associated with specific malfunctions and accidents that have a reasonable probability of occurring during the lifetime of the project. A range of credible accident and malfunction scenarios was considered in Section 4.3 of the Proposed EA Screening Report, and CNSC staff concluded that the postulated credible malfunction and accident scenarios are not likely to cause significant adverse environmental effects, taking into consideration the prevention measures and the contingency plans.
29. Based on the above information, the Commission concludes that the impact of malfunction and accidents will be mitigated by adherence to strict safety measures.

#### *Cumulative Effects*

30. CNSC staff reported that they have considered the effects of the proposed project together with other proposed and existing projects and activities in the area that may cause environmental effects that would overlap with effects caused by the Cigar Lake Mine Project, and concluded that potential cumulative effects are not likely to cause significant adverse environmental effects.
31. Based on the above information, the Commission is satisfied that the impact of cumulative effects would not cause significant adverse environmental effects.

#### *Follow-Up Monitoring Program*

32. A follow-up program under CEAA is a program to verify the accuracy of the EA of a project and to determine the effectiveness of any measures taken to mitigate the adverse environmental effects of the project. CNSC staff stated that a follow-up program occurs in addition to the ongoing compliance monitoring required at the site.
33. CNSC staff reported that they continue to discuss, with staff from the EC, SMOE and Cigar Lake, the design and implementation of the operational controls, implementation of the regular compliance monitoring and follow-up program identified in the Proposed EA Screening Report. CNSC staff added that, before the Commission or a person

authorized by the Commission approves the operation of the water inflow management system, the mechanisms for ensuring the final design and implementation of follow-up activities and for the reporting of results need to be determined for all proposed activities.

34. The Commission is satisfied with the proposed follow-up program identified in the Proposed EA Screening Report and directs CNSC staff to finalize discussions regarding implementation of the operational controls, compliance monitoring and reporting prior to its consideration for approval of the operation of the constructed activities.

### ***Nature and Level of Public Concern***

35. With respect to public concern as a factor in its consideration of whether to refer the project to the federal Minister of the Environment for a review panel or mediator, the Commission first examined whether the public had sufficient opportunity to become informed about the project and the Environmental Assessment, and express their views on it.
36. CNSC staff reported that, based on the Public Participation criteria approved by the Commission in August 2008, it was determined that this project did not require an extensive level of public participation. CNSC staff further reported that, as the SMOE is the lead for this EA, the project is also subject to the provincial public participation process; therefore, the federal Draft EA Screening Report was subject to public and aboriginal review concurrently with the provincial Technical Review Comments, and Cameco's EIS, from February 18, 2011 to March 18, 2011. Additionally, a public and aboriginal review period was initiated in July 2009 for the Project-Specific Guidelines.
37. CNSC staff confirmed that no comments from the public were received on the Draft EA Screening Report, none of the Aboriginal groups expressed concerns regarding the project, and that CNSC staff are not aware of any adverse impacts that the proposed project may have on any potential or established Aboriginal or Treaty rights.
38. The Commission is satisfied that the opportunities given to the public to comment and review the EASR were acceptable. The Commission concludes that the level of public concern does not warrant that the project be referred to the Minister of the Environment for referral to a review panel or mediator (i.e., pursuant to paragraph 20(1)(c) of the CEAA).

### **Approval to Construct**

39. CNSC staff reported that the licensing documentation has been submitted for the construction and operation of a new water inflow management system (the Cigar Lake Water Inflow Management Project facilities) that would allow for the safe release of treated mine water from routine and non-routine mine inflows directly into Seru Bay of Waterbury Lake. CNSC staff added that this request is made under section 3.1 of the

current Cigar Lake Project CNSC construction licence (UMCL-MINE-CIGAR.00/2013), which states that no significant modifications to the facility or its operation may be made without prior written approval of the Commission or a person authorized by the Commission.

40. Whereas the Commission is to exercise its authority with respect to the construction of the facilities, CNSC also requested that the approval for the operation of the constructed facilities be delegated to CNSC staff (the Director General, Directorate of Nuclear Cycle and Facilities Regulation). CNSC staff noted that this approval would be granted once further details of the operational controls are provided, and the implementations of the regular compliance monitoring and follow-up program are considered acceptable.
41. CNSC staff stated that potential alternatives to the project were considered, but that the current proposed project represents the best overall alternative.
42. CNSC staff reported that the decommissioning of Seru Bay pipeline discharge system has been addressed in the Environmental Impact Statement and that any adjustments would be accounted for in the next revision to the Cigar Lake Preliminary Decommissioning Plan and corresponding cost estimate.
43. CNSC staff noted that applicable approvals are also being sought from the Department of Fisheries and Oceans (DFO) and Transport Canada (TC) for the work taking place on the shoreline and within Seru Bay. The construction activities should start only after the proposed EA Screening Report has been accepted, the site surface lease has been amended and approved by the province of Saskatchewan, and applicable approvals have been received from DFO and TC. A notification of the final discharge point is also required from Environment Canada.

### **Conclusion**

44. The Commission has considered the information available in the EASR and CNSC staff's submission as presented for reference on the record for the Public Hearing.
45. The Commission concludes that the EASR attached to CMD 11-H112 is complete and meets the requirements of the CEAA for the scope of the project and the scope of the assessment established in the EA Guidelines.
46. The Commission concludes that the project, taking into account the appropriate mitigation measures identified in the EASR, is not likely to cause significant adverse environmental effects and that the public concerns expressed to date about the project do not warrant a reference to the Minister of the Environment for referral to a mediator or review panel. The Commission also considered the potential increased protection of the environment resulting from the operation of this new water inflow management system.
47. The Commission is also satisfied that Cameco, with the proposed construction activities, will make adequate provision for the protection of the environment, the health and safety

of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

48. Therefore, the Commission approves the construction activities as a significant modification under condition 3.1 of the Cameco Cigar Lake construction licence (UMCL-MINE-CIGAR.00/2013), in accordance with paragraph 20(1)(a) of the CEAA.
49. With this construction approval, the Commission delegates the authority to approve the operation of the constructed activities to CNSC staff (Director General, Directorate of Nuclear Cycle and Facilities Regulation), once CNSC staff is satisfied that all operational controls and the implementation of the regular compliance monitoring and follow-up program are adequate.



Michael Binder  
President,  
Canadian Nuclear Safety Commission

JUN 28 2011

Date