



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

# Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant Cameco Corporation

Subject Application to Renew the Beaverlodge Mine and  
Mill Site Waste Facility Operating Licence

Hearing  
Dates February 18, 2009 and November 5, 2009

**RECORD OF PROCEEDINGS**

Applicant: Cameco Corporation

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

Purpose: Application to renew the Beaverlodge Mine/Mill Site Waste Facility Operating Licence

Application received: August 7, 2008

Dates of hearing: February 18, 2009 and November 5, 2009

Location: Day 1: Canadian Nuclear Safety Commission (CNSC) Public Hearing Room, 280 Slater St., 14th. Floor, Ottawa, Ontario  
Day 2: Travelodge Hotel, 106 Circle Drive West, Saskatoon, SK

Members present: M. Binder, President (Chair on Day 1 and absent on Day 2)  
A.R. Graham (Chair on Day 2)  
Members present on both dates and who participated in the decision:  
C.R. Barnes M. J. McDill  
A. Harvey B. J. Barriault  
D.D. Tolgyesi

Senior General Counsel: J. Lavoie  
Secretary: M.A. Leblanc  
Recording Secretary: P. Reinhardt

<b>Applicant Represented By</b>	<b>Document Number</b>
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<b>Intervenors</b>	
See Appendix A	
<b>Others</b>	
<ul style="list-style-type: none"> <li>• Saskatchewan Ministry of Environment: D. Kristoff and T. Moulding</li> </ul>	

**Licence:** Amended

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## Introduction

1. Cameco Corporation Inc. (Cameco) has applied to the Canadian Nuclear Safety Commission<sup>1</sup> (CNSC) to renew the Beaverlodge Mine and Mill Waste Facility (Beaverlodge) Operating Licence, WFOL-W5-2120.1/2009 (WFOL), for a period of three years. Beaverlodge is located in Northern Saskatchewan. Cameco's application was first heard by the Commission in Ottawa on February 18, 2009. At the February hearing, the Commission decided to adjourn the proceeding until the fall of 2009 to allow Cameco to provide a complete plan outlining the details and milestones on the proposed licence long-term activities. On February 18<sup>2</sup>, 2009, the Commission also decided to extend Cameco's licence (WFOL-W5-2120.2/2009) expiry date to November 30, 2009.
2. The former Beaverlodge mine was operated by Eldorado Nuclear Limited from 1952 to 1982 and decommissioned from 1982 to 1985. Since 1988, Cameco has been the licence holder for the Beaverlodge site and has been assigned the responsibility of managing the on-going reclamation, maintenance and monitoring activities on the site. The funding for these activities is provided to Cameco by Canada Eldor Inc., a Crown Corporation of the Government of Canada. A Waste Facility Operating Licence, WFOL-W5-2120.0/2007, was issued to Cameco for the Beaverlodge decommissioned facilities in 2005. This licence was amended to WFOL-W5-2120.01/2009 to extend its expiry date until March 31, 2009 at a public hearing held in Ottawa (Ontario) on January 25, 2007. Beaverlodge's licence was extended again by the Commission on February 18, 2009, as mentioned in the above paragraph.

## Issues

3. In considering this application, the Commission was required to decide pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*<sup>3</sup> (NSCA):
  - a) if Cameco is qualified to carry on the activity that the licence would authorize; and
  - b) if, in carrying on that activity, Cameco 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.

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<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> <http://www.nuclearsafety.gc.ca/eng/commission/pdf/2009-02-18-Decision-Cameco-Beaverlodge-e-Edocs3350132.pdf>

<sup>3</sup> Statutes of Canada (S.C.) 1997, chapter 9.

### Public Hearing

4. The Commission, in making its decision, considered information presented at a public hearing held on February 18, 2009 in Ottawa, Ontario and on November 5, 2009 in Saskatoon, Saskatchewan. The public hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*<sup>4</sup>. During the public hearing, the Commission received written submissions and heard oral presentations from CNSC staff (CMD 09-H2, CMD 09-H2.A, CMD 09-H2.B and CMD 09-H2.C) and Cameco (CMD 09-H2.1, CMD 09-H2.1A, CMD 09-H2.1B, CMD 09-H2.1C and CMD 09-H2.1D). The Commission also considered oral presentations and written submissions from six intervenors (see Appendix A for a list of the intervenors).

### **Decision**

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

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, renews Cameco Corporation's Waste Facility Operating Licence for the Beaverlodge Mine and Mill site. The renewed licence WFOL-W5-2120.0/2012 is valid from December 1, 2009 to November 30, 2012.

6. The Commission includes in the licence the conditions recommended by CNSC staff as set out in the draft licence attached to CMD 09-H2.C.
7. With this decision, the Commission directs Cameco to prepare an annual status report on the remediation performance at the Beaverlodge facility. The Commission requests that CNSC staff also prepare a report on the results of compliance activities carried out and on the licensee's performance during that period. Applicant and CNSC staff shall present their reports at a public proceeding of the Commission, approximately in the last quarter of each year of the licence's duration.

### **Issues and Commission Findings**

8. In making its licensing decision, the Commission considered a number of issues relating to Cameco's qualification to carry out the proposed activities and the adequacy of the proposed measures for protecting the environment, the health and safety of persons, national security and international obligations to which Canada has agreed.

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<sup>4</sup> Statutory Orders and Regulations (S.O.R.)/2000-211.

## Background

9. In the Waste Facility Operating Licence issued to Cameco for the Beaverlodge site in 2005, the Commission requested, as part of the licence conditions, that a series of environmental and human health studies be conducted to consider ongoing management for legacy effects. Cameco completed and submitted several reports on the requested studies. CNSC staff and the members of the Joint Regulatory Group (JRG), comprising the Saskatchewan Ministry of Environment, Environment Canada and Fisheries and Oceans Canada, have reviewed these reports. In addition to these reports, CNSC staff also reviewed and assessed Cameco's licence renewal application submitted for this hearing.
10. After its assessment of the ten requested studies, CNSC staff concluded that nine of them were meeting objectives, but that one, the final "*Significance Analysis Report*" was incomplete and was missing information on the:
  1. hazard predictions of radiological risk to aquatic organisms in Beaverlodge Lake;
  2. reassessment of the 2003 radiological risk to humans; and
  3. Risk Reductions Options analysis feasibility.
11. In its review, CNSC staff confirmed that the concerns raised in 2005 regarding the adverse aquatic effects on Beaverlodge Lake and area fish and benthic invertebrate communities and on the slow rate of post-decommissioning natural recovery were still present. CNSC staff reported that, in Beaverlodge Lake, the uranium and radium surface concentrations decreased since decommissioning while selenium concentration remained stable since 1997. CNSC staff also reported that the radium concentrations in the Fulton Creek tailings system were expected to increase for the next 20 to 30 years, and then to gradually decrease to reach water quality objectives set in the remediation plan in the long term. CNSC staff added that, as predicted from hydro-geochemical models elaborated for the area, it will take decades before water and sediment levels decline to natural background levels.
12. Consequently, CNSC staff had requested that Cameco provide for the February 18, 2009 hearing:
  - a detailed list of reasonable source controls;
  - remediation options to reduce identified risks and impacts;
  - a screening of potential options;
  - a more rigorous engineering and feasibility investigation of those options; and
  - an in-depth review to develop risk-based system recovery criteria based on JRG and stakeholder consultation.

CNSC staff recommended at the February hearing that a three-year licence be granted in order to give time to Cameco to consider additional mitigation or monitoring stemming from a feasibility investigation of options selected in consultation with the JRG and interested public and aboriginal groups. CNSC staff also recommended at the same hearing that five low-risk decommissioned satellite mines be exempted from licensing to possess, manage or store nuclear substances.

13. In its “Record of Proceedings, Including Reasons for Decision”, dated March 14, 2009, the Commission decided to adjourn the February 18, 2009 public hearing to fall 2009 to allow Cameco to prepare a more complete plan with details and milestones on long-term activities for the proposed three-year licence term. At the same time, the Commission amended the Beaverlodge’s licence to extend its expiry date to November 30, 2009. At the February hearing, the Commission also exempted from licensing to possess, manage or store nuclear substances the five low-risk decommissioned satellite mines.

## **Protection of the public from radiation**

### *Health issues from exposure to radiation*

14. The Commission asked Cameco to elaborate on the fact that it was reported that the population around Beaverlodge area could only consume half a pound of fish coming from Beaverlodge Lake every two weeks to avoid contamination.
15. Cameco responded that a study on this subject has been conducted and that 27 people were interviewed to set up the model of the local fish consumption and that assumption on the amount of fish people could consume were used in the model. Cameco noted that, based on the model, it would be reasonable for a person on Beaverlodge Lake to consume fish for a three-month period during the year. Cameco added that further discussions with the locals indicated that people typically do not eat fish from Beaverlodge Lake but from Lake Athabasca so that they were at low risk from being contaminated from the Beaverlodge Lake fish.
16. One intervenor raised concerns on the manner the risk for radiation effects on health was evaluated by using data from the International Commission on Radiological Protection (ICRP) from the second World War before the discovery of DNA. CNSC staff responded that the science currently used to assess radiation risks has evolved since the atomic bombing in Japan. CNSC staff added that several epidemiological studies on cohorts of nuclear workers and other people who have been exposed to radiation and uranium have provided information to establish the current regulatory framework and has permitted a better understanding of the risks of uranium and radon in the context of uranium mining. CNSC staff noted that studies of the Canadian workers employed at Beaverlodge and Port Radium have demonstrated that the risks the workers were exposed to in the forties and up to the seventies had decreased due to the modern working conditions that lead to lower exposures. CNSC staff added that nowadays, the workers are as healthy as the general Canadian population with no increases in cancer or mortality being observed.

17. The Commission asked CNSC staff why issues related to Uranium mining were not included by Environment Canada in the *Metal Mining Effluent Regulations*<sup>5</sup> (MMER). CNSC staff responded that, when Environment Canada revised the MMER, Environment Canada had engaged a stakeholder group in discussion to include uranium in the revision process, and that Environment Canada, after reviewing the different types of mines present in Canada, had decided that it was not a priority to include additional contaminants, such as uranium, in the mining regulations. CNSC staff added that several research projects had been conducted by the CNSC itself to better define the toxicity of uranium, selenium and molybdenum in order to improve uranium mining regulations.
18. The Commission further asked CNSC staff about the health risks potentially associated with other radionuclides present in the Beaverlodge Lake and area, as referred to in one of the interventions. CNSC staff responded that these were currently managed by Cameco and the province of Saskatchewan through public advisories on drinking water and fish around the contaminated sites. CNSC staff added that additional site-specific human health and ecological radiological risk assessments will be conducted by Cameco through their management decision framework and that the assessment results will be reported to all the stakeholders, the JRG and the CNSC.
19. The Commission asked Cameco how it was evaluating the level of radiation in the Beaverlodge area. Cameco responded that it was using gamma surveys and when areas were identified having higher gamma radiation than background, they were covered with clean rock to effectively provide shielding from the source of radiation. Cameco also added that it was using track etch monitoring to measure levels of ambient radon in the area, and that no radon has been detected. CNSC staff confirmed that an ongoing monitoring program for radon was in place since decommissioning was completed and that it has shown that radon levels in the Beaverlodge area were at background level and, in some cases, lower than in other parts of Saskatchewan. CNSC staff added that, in few very small isolated areas, radon was measured slightly above the regional background, and that these areas are posted and would not cause a concern to the visitors.
20. Based on the information provided, the Commission is of the opinion that Cameco has made and will continue to make adequate provision for the protection of the public from radiation. The Commission is also satisfied that all appropriate precautions will be taken to minimize exposure to radiation to members of the public.

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<sup>5</sup> Statutory Orders and Regulations (SOR)/2006-239, October 3, 2006

## **Environmental Protection**

### ***Environmental Issues***

21. CNSC staff updated the Commission on environmental issues with respect to the Beaverlodge site decommissioning. CNSC staff reported that the first Status of the Environment Report for the Beaverlodge site, "*Beaverlodge Mine Site Integrated ERA and SOE 1985-2007*", a summary of all environmental data collected since the decommissioning and reclamation of the mine in 1985, until the end of 2007, was submitted to CNSC staff and Saskatchewan Ministry of Environment in January 2009. CNSC reported that data from this report were compared to predictions made in the original decommissioning document and to several ecological risk assessments in order to evaluate if predictions were observed and if the monitoring program was adequate. CNSC staff confirmed that the report was a very useful reference summary of site environmental data and impact predictions, and that it will be used for decision support on risk-based objectives and future monitoring, including potential release or exemptions from licensing of additional mine areas.
22. CNSC staff noted that information on environmental issues provided since the February 18, 2009 hearing confirms the conclusion stated in CMD 09-H2 to the effect that Cameco meets the requirements for a waste facility operating licence and that it is qualified to continue to carry out the activities that a renewed licence would authorize.
23. Cameco reported that, following the review of the results of the June 2009 Remedial Option Workshop and the October 7 and 8, 2009 follow-up, it had established a long-term management plan for the sites that describes the process for assessing potential additional remedial measures for addressing residual risk. Cameco added that those measures will be systematically assessed on the basis of their feasibility, predicted environmental benefit and corresponding cost. Finally, Cameco concluded that the analysis of the predicted environmental benefit will be the basis for establishing site-specific performance objectives.
24. The Commission asked CNSC staff to elaborate on the risk for the local population to consume fish and water from Beaverlodge Lake and on the period of time needed for the contamination to disappear. CNSC staff responded that it was observed that radium sulphate minerals that are depositing in the sediments are not stable in the long term and that when tailings age, radium is released into the water column. CNSC staff added that a research project contracted with the University of Ottawa was presently looking into these mechanisms and that the results from this study should be available in approximately one year. Cameco added that the radium in Fulton Bay, in the northern part of the lake, was predicted by the models to take about 50 years to decrease to the provincial surface water quality objectives.

25. The Commission asked Cameco about the studies conducted in the Beaverlodge area to assess the risk of contamination of waterfowl. Cameco responded that some studies similar to those conducted in the Key Lake area had been initiated at other Cameco mine sites where contamination was believed to be present. Cameco added that an assessment of waterfowl and other avian species was also included in the country food survey. CNSC staff confirmed that it was satisfied with Cameco's approach to the issue. On the Commission's request, Cameco agreed to share these studies with the Métis Nation of Saskatchewan (MN-S) community.
26. Another intervenor, the Northern Saskatchewan Environmental Quality Committee (EQC), asked if any environmental assessment had been conducted on the Crackingstone River, an effluent of Beaverlodge Lake that flows into Lake Athabasca. CNSC staff responded that such an assessment was included in the recent Status of Environment Report and that this information was available. A representative from the Saskatchewan Ministry of the Environment (SME) added that discussions on the monitoring of cumulative effects in the Crackingstone River region will be engaged with Cameco and that Cameco will share later the results from these discussions with the EQC.
27. Based on the above information, the Commission noted that Cameco still needs time to consider necessary mitigation and monitoring actions arising from the Remedial Options Workshop and the Status of Environment Report but is satisfied that, with the mitigation actions already in place at the Beaverlodge site, all appropriate precautions will be taken to protect the health and safety of persons or the environment.

### ***Environmental Monitoring and Compliance***

28. At the February hearing, CNSC staff had reported that it had requested from Cameco that the flowing boreholes that were draining into the environment be plugged, and that a monitoring plan for these boreholes be put in place. CNSC staff also reported that Cameco had delayed to respond to its request initially which had some consequence on Cameco's environmental protection performance rating for the Beaverlodge site.
29. CNSC staff reported that, following an inspection in May 2009, CNSC staff also required from Cameco an updated monitoring - remediation plan on the flowing boreholes and surface seep and that the boreholes be temporarily plugged. CNSC staff also requested from Cameco that actions be taken to remediate remaining uncovered sludge and tailings at Minewater Lake and to assess options for the reduction of contaminant loading from this source to Fulton Creek.

30. CNSC staff reported that Minewater Lake remediation has now been included into Cameco's current long-range plan for the period of September 2009 to October 2011 and includes: feasibility assessment; remedial options report; JRG and stakeholder discussions on costs/benefits of implementation plans; and complete remediation and continuation of monitoring. CNSC staff also added that a monitoring plan of the flowing boreholes and surface seep has been agreed on between CNSC staff and the SME and that the installation of plugs on these boreholes was completed in May 2009.
31. The Commission requested more information on the temporarily plugged boreholes and on the total outflow of these boreholes prior to the plugging. Cameco responded that typical flows from those boreholes ranged from about 0.14 litres per second down to about 0.02 litres per second. The Commission further asked if the level of contamination had been evaluated in the boreholes. Cameco responded that water samples had been collected before the closing of the boreholes.
32. In order to describe the impact of the water coming from the boreholes on Uranium City and its area, Cameco noted that these boreholes were a low flow source and that their contribution to the close-out objectives for the water quality at Beaverlodge Lake was minor and that they were not contributing a large amount of contaminant to the broader system of Beaverlodge Lake. Cameco added that it was in its plan to control that flow and stop it.
33. The Commission is satisfied with the actions taken by Cameco to solve the problems raised at the Beaverlodge site during CNSC staff inspection in May 2009.
34. Based on the information provided, the Commission is of the opinion that Cameco has made and will continue to make adequate provision for the protection of the environment. The Commission is also satisfied that all appropriate mitigation measures will be put in place by Cameco to minimize potential effects to the environment.

### **Remediation activities**

#### ***Institutional Control of Five Decommissioned Satellite Mine Areas***

35. CNSC staff updated the Commission on the status of the five sites exempted from licensing in February 2009. CNSC staff reported that, in July 2009, the Saskatchewan Ministry of Energy and Resources (SMER), which is responsible for the Institutional Control (IC) Program, had determined that Cameco was compliant with the conditions and requirements for the registration of the five exempted satellite mines into the Institutional Control Registry. CNSC staff added that SMER had confirmed to Cameco that acceptance of the five sites would be granted on payment of Institutional Control monitoring, maintenance and unforeseen events funds and fees, as well as on payment of a financial assurance for a maximum failure event, such as for a concrete

cap replacement at the Eagle mine area. CNSC staff noted that the Saskatchewan Ministry of Environment further issued, on October 22, 2009, a “Release from final decommissioning and reclamation” for the five exempted satellite mines. CNSC staff also added that the Saskatchewan Ministry of First Nations and Métis Relations will issue a revised Beaverlodge surface lease agreement, including the surrender of surface lease for the designated properties.

### ***Remedial activities and the Métis***

36. In February 2009, the Commission had asked CNSC staff and Cameco if they could look into potential avenues to help the Métis people increase their capacity to understand the Beaverlodge related issues, including potential contamination of water and fish, as well as health-related problems.
37. CNSC staff updated the Commission on this issue. CNSC staff reported that, in order to help the MN-S to better understand Beaverlodge related issues, it has held several meetings with the Métis. A first meeting was held in April 2009 to discuss:
  - differences in approaches to issues at legacy uranium mines compared to current or modern uranium mines;
  - interim and long-term planning and financial support for capacity building (i.e., to deal with an overwhelming number and size of environmental assessment and licensing projects);
  - appropriateness of Northern Saskatchewan Environment Quality Committee (EQC) representation of the MN-S, and
  - the need for interim and longer term plans to build capacity to improve MN-S participation to the CNSC’s regulatory processes.

CNSC staff added that a second meeting was held on August 26, 2009 at the MN-S’s Saskatoon office to continue discussions on how CNSC staff can provide better information and clarity on its licensing role and on the regulatory requirements.

38. Cameco also noted that it had engaged the MN-S as part of its revised long-term plan of activities for the Beaverlodge project. Cameco stated that, as outlined in its plan during a public meeting held in May 2009 in Uranium City, community representatives were chosen and later supported to attend the Remedial Options Workshop to be held in Saskatoon in June 2009. Cameco reported that a follow-up meeting to the May meeting was held in Uranium City on October 7 and 8, 2009.

### ***Signage***

39. Cameco reported that, with respect to health risks associated to the consumption of selenium contaminated fish and to the drinking of uranium contaminated water from the lake, the Saskatchewan Ministry of Environment and the Saskatchewan Ministry of Health that are responsible for the management of these risks have updated the advisories to residents of the area and posted new warning signs on May 20, 2009.

40. On this issue, the Commission asked a Saskatchewan Ministry of the Environment (SME) representative to elaborate on the language used for the signs posted to notify the community of the potential contamination. SME responded that notices were distributed to every resident mailbox, and signs posted in all local businesses but that these signs were in English, not in the local aboriginal language. SME also added that additional signs had been ordered for posting at the boat launches at Martin and Beaverlodge Lakes.
41. The Commission strongly suggests that Cameco do a follow-up with the SME so that these signs are translated in the language of the local community. The purpose is to increase the understanding of the local population and to assure that the signs are efficient in preventing the local community contamination from the consumption of contaminated fish or contaminated water in the posted areas.

***Long-Term Planned remediation activities***

42. At the February 18, 2009 hearing, the Commission requested that Cameco submit a detailed report on long-term planned activities for the proposed licence period including:
  - a detailed plan of consultation with the Joint Regulatory Group (CNSC staff, SME, Environment Canada and Fisheries and Oceans Canada) and other stakeholders on the in-depth review to identify new risk-based close-out objectives appropriate for an adequate remediation of the Beaverlodge site;
  - a list of the options for the remediation measures to be taken; and
  - the outline, the milestones and the expected results of the planned activities.
43. Cameco provided, on October 29, 2009, a detailed long-term Gantt chart to CNSC staff. Milestones as well as completion and target dates include:
  - ongoing regulatory and stakeholder meetings (JRG meeting held September 16, 2009, stakeholder meeting held October 7 and 8, 2009);
  - the follow-up consultation regarding the 2003 human health risk assessment recommendations (held in May 2009);
  - the implementation of corrective measures for action items [i.e., flowing boreholes (done in May 2009) and Minewater Reservoir remedial assessment (to be completed by October 2012)];
  - a Basic Conceptual Site Model (received by CNSC staff on June 4, 2009);
  - the development of risk-based close-out objectives with appropriate criteria for entry into Institutional Control Program (to be completed by April 2013);
  - the development of proposed “special studies” to be reviewed by the JRG and stakeholders as necessary (to be started in fall 2009 and completed by April 2012);

- a Detailed Conceptual Site Model to refine remedial options assessments and assist with feasibility analyses (started in March 2009; JRG review to be completed by March 2010);
  - the conduct of potential remedial options assessment (started September 2009, to be completed in October 2012); and
  - the establishment of long-term Institutional Control objectives (criteria) for continued performance monitoring of ecosystem recovery (started September 2009, to be completed by April 2013).
44. CNSC staff reviewed the detailed long-term plan and concluded that it believes that Cameco can proceed with decision making on remedial options within the proposed licence period. CNSC staff confirmed that the plan will be revised periodically to reflect necessary changes stemming from reviews, studies to address information gaps, and from ongoing monitoring results, as well as from additional regulatory requirements.
45. CNSC staff reported that the plan included substantial engagement of the JRG and other stakeholders and support to attend consultation workshops and meetings such as the Remedial Options Workshop organized by Cameco in June 2009 and the stakeholder meeting held in Uranium City on October 7 and 8, 2009.
46. The Commission asked Cameco if the details on the requested study of contaminants in country foods could be made available to the local people of the community. Cameco responded that the studies proposed at the Remedial Options Workshop and at the public meetings held in Uranium City were outlined in the Gantt Chart and that the details were available to local people on request.
47. The Commission asked CNSC staff if it was satisfied with the milestones presented in Cameco's plan and if Cameco will be held accountable for the completion of the work suggested in the proposed plan. CNSC staff responded that, since the February hearing, an extensive amount of work had been done by Cameco, the JRG, the community members, and the MN-S and Uranium City residents to elaborate a detailed remediation plan. CNSC staff noted that the plan will be evaluated with all the key stakeholders to ensure that what is proposed will be met. CNSC staff added that it was confident that the work initiated will continue, that the current gaps will be filled, and that decisions will be made on remedial options. CNSC staff confirmed that it will report back to the Commission on remediation progress results.

### ***Remedial Options***

48. Cameco held a workshop in June to obtain a list of remedial measures options for source control and to determine which were feasible for an adequate remediation of remaining source terms. The workshop used the Basic Conceptual Site Model as a start and aimed at providing suggestions for improvements to consultation activities in the area and greater involvement in planning and increasing opportunities for local work at Beaverlodge.

49. Cameco reported that forty-one people attended the June 2009 workshop, six people from Uranium City, four from the Northern Saskatchewan Environmental Quality Committee (EQC) representing four Athabasca Basin communities, three MN-S representatives including the Vice-President of the Uranium City local, Cameco staff, CNSC staff and federal and provincial government staff (Environment Canada, SME, and Northern Mines Monitoring Secretariat).
50. Cameco explained that the workshop aimed at developing remediation scenarios for each of six specific sites, in or immediately adjacent to the licensed area, to achieve the goals of protecting the environment and human health, and to ensure the site would be stable or improving at long term. One of the workshop goals was to identify a number of factors to build capacity for aboriginal participation. Following the workshop, Cameco confirmed with CNSC staff that it intended to continue to hire local qualified contractors when available to conduct monitoring or remediation activities.
51. Cameco presented the Remedial Options Workshop Report to stakeholders and the JRG on July 31, 2009. The workshop provided a suite of regulatory and technical evaluation factors that were considered to identify remedial options and information gaps. Cameco reported that the workshop results were reviewed by all interested parties at a meeting held in Uranium City on October 7 and 8, 2009.
52. Cameco recognized that Beaverlodge Lake and the general Uranium City areas have been historically impacted by past mining practices, not exclusively tied to Beaverlodge properties and that recovery will be long. Cameco noted that its proposed framework includes protection of people and the environment and a commitment to ensure all reasonable measures are taken to ensure that the stability and security of the Beaverlodge properties and areas immediately down stream (Ace Bay, Fulton Bay and Greer Lake) will be improved in the long term.
53. Cameco noted that decision points requiring local stakeholder and aboriginal involvement are included into the management flowchart. Cameco added that, in collaboration with the JRG, it will be able to demonstrate to federal and provincial decision makers that all reasonable measures have been taken before advancing the properties into institutional control.
54. At the October meeting, held in Uranium City, Cameco proposed to the stakeholders a management framework resulting from the public consultation meetings and from the workshop held in June 2009 with the JRG, CNSC staff, SME, Environment Canada, the Department of Fisheries and Oceans, the residents of Uranium City and Aboriginal and Métis peoples. Cameco recognized that Aboriginal and stakeholder involvement is a critical aspect of the framework. Cameco added that it will continue to be transparent and will engage all interested parties in the Uranium City community as well as interested First Nations and Métis parties, to ensure a good understanding of decisions to follow.

## **Public Information**

### ***Public Communication and Consultation***

55. At the February hearing, CNSC staff noted that technical work was needed to characterize the sources of contamination and to understand what possible solutions could be considered. CNSC staff also added that consultation with all the stakeholders would be needed to develop these solutions and to agree on their feasibility.
56. At the same hearing, the Commission had requested that Cameco improve its communication with aboriginal groups, including the MN-S, to assure that the planned remediation measures and the potential residual health effects present in the Beaverlodge vicinities were better understood by these communities.

### ***Communication with Aboriginal Groups***

57. Cameco provided to CNSC staff a detailed communication plan on April 24, 2009 including : annual public information meetings; EQC annual inspection; follow-up interviews with Uranium City area residents on the 2003 Human Health Risk Assessment recommendations and on water and fish advisories; stakeholder participation in remedial action planning; and stakeholder consultation on risk-based close-out objectives. In addition to this, Cameco is preparing a communications plan report for the Beaverlodge project, and has provided the Remedial Options Workshop Summary Report to all workshop participants and other community leaders.
58. Cameco confirmed that it committed, in the proposed management framework presented at the October 7 and 8, 2009 meeting in Uranium City, to the local stakeholders and aboriginal groups to maintain a public outreach program that features proactive stakeholder involvement, including consultation with local communities, First Nations and MN-S.

### ***Communication with the Métis of Northern Saskatchewan***

59. The Commission asked the Métis representative to comment on the consultation program Cameco has presented in the proposed management framework for the operation of the Beaverlodge site. The Commission asked if the Métis thought they would be consulted and be involved sufficiently in the proposed program.
60. The MN-S representative responded that he believes that Cameco is sincere and tries to work with the Métis Nation but he added that the Métis needed more capacity and commitment from the Federal Government of Canada. The MN-S representative also added that a very good dialogue has been engaged between the Métis and four other Northern regions leaders and Cameco executives, and that some substantial agreements between Cameco and the Métis will be concluded soon. MN-S noted that some federal

and provincial institutions should come to the table with resources to help the Métis Nation of Saskatchewan. MN-S concluded that Métis people have to be assured that the Aboriginal people rights, traditions and cultures are protected.

61. In its intervention, MN-S stated that the CNSC needed to ensure that, as keepers of the indigenous knowledge, the MN-S would be adequately funded to be able to provide a timely and knowledgeable assessment of the various reports with regards to the Beaverlodge area. The MN-S also added that it believes that Canada Eldor Inc., as a representative of the Government of Canada and primary funding agent for this project, had a duty to assist in finding a way to provide capacity to the MN-S to participate in the project in a productive and fair manner. The MN-S explained that the lack of resources to participate in the consultation process was preventing the Métis from understanding the contamination issues involved with the remediation process, and was putting them at risk with regards to their health. The MN-S also indicated that they felt that there was a duty to consult that applied with respect to this licence renewal by the Commission.
62. The Commission asked Canada Eldor Inc.'s counsel if Canada Eldor Inc. would consider funding the MN-S. Canada Eldor Inc.'s counsel responded that he would take that request back to Canada Eldor.
63. Based on the information provided during the hearing, the Commission is satisfied with the efforts deployed by Cameco to help the Métis people increase their capacity to understand the Beaverlodge related issues, including potential contamination of water and fish and health-related problems. The Commission notes that there are no provisions in its legal mandate to provide funding to persons or to group of persons who wish to intervene at public Commission hearings but expects that Canada Eldor Inc. will follow-up with the MN-S and First Nations on the subject of capacity relating to Beaverlodge Lake matter.

#### ***Conclusion on Public Information***

64. Based on this information, the Commission is satisfied with the manner Cameco informed the public and the aboriginal groups in particular on the potential health and environmental risks related to the operation of Beaverlodge site.
65. The Commission is satisfied that the intervenors have been informed of the Commission process, and have had a full opportunity to express their concerns and identify issues. The Commission has heard the intervenors, and has considered all of the submissions in making its decision. In this context, the Commission is satisfied that, to the extent that a duty to consult was engaged, it was fulfilled in this case respecting the licensing action by the Commission process and by the opportunities that were afforded for consultation within that process.

### **Funding for Decommissioning Work**

66. The Commission requires that the licensee has operational plans for the long-term management of waste produced during the remediation of the decommissioned facility. In order to ensure that adequate resources are available for the management and the monitoring of Beaverlodge site, the Commission requires that an adequate financial guarantee for realization of the planned activities is put in place and maintained in a form acceptable to the Commission throughout the licence period.
67. The Commission asked CNSC staff if the funding available for the proposed remediation at Beaverlodge was sufficient. CNSC staff responded that a financial guarantee had been confirmed by a Deputy Minister from the Federal Department of Finance. CNSC staff also confirmed that the financial guarantee had recently been reviewed and accepted as adequate by the Commission.
68. Based on this information, the Commission considers that the financial guarantee is acceptable for the purpose of the current application for licence renewal.

### **Application of the *Canadian Environmental Assessment Act***

69. Before making a licensing decision, the Commission must be satisfied that all applicable requirements of the *Canadian Environmental Assessment Act*<sup>6</sup> (CEAA) have been fulfilled.
70. CNSC staff noted that the renewal of a licence under subsection 24(2) of the NSCA is not listed under the *Law List Regulations*<sup>7</sup> of the CEAA. Therefore, there is no trigger pursuant to subsection 5(1) of the CEAA, which means that no environmental assessment is required for this matter.
71. The Commission concludes that no environmental assessment under the CEAA is required before the Commission may consider and make a decision on Cameco's application under the NSCA.

### **Licence length**

72. Cameco requested a three-year licence. CNSC staff recommended a licence term of three years based on:
  - the significant scope of work to be completed in accordance with the detailed project plan;
  - the time needed to implement necessary mitigation and monitoring actions arising from the Remedial Options Workshop and the Status of Environment Report;

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<sup>6</sup> Statutes of Canada (S.C.) 1992, chapter 37.

<sup>7</sup> Statutory Orders and Regulations (S.O.R)/94-636

- time is required to conduct feasibility studies of selected options, regarding remediation or potential contaminant source controls that can be undertaken; and
  - time is required for the JRG members to assess the above outcomes in consultation with other stakeholders.
73. The Commission asked Cameco what it was expecting to present before the Commission at the next licence renewal. Cameco responded that the work laid out in the action plan would be completed which would make it possible to make a decision on which ones of the remaining 70 properties are suitable to be recommended for institutional control and to be exempted from licensing. Cameco added that it would then identify the next steps to take to remediate the more challenging properties. CNSC staff added that, in three years, information gaps would be filled and that there should be a significant narrowing and a more definitive plan of the feasible actions for the remediation of the site. CNSC staff also noted that more information from other projects in the area and legacy sites would have been gathered as well.
74. The Commission is satisfied with the licence term recommended by CNSC staff and notes that such a licence term will allow Cameco sufficient time to:
- consider appropriate actions for the establishment of additional mitigation or monitoring as required stemming from a feasibility investigation of selected options; and
  - manage the site and provide the required follow-up studies in consultation with the Joint Regulatory Group and interested public and aboriginal groups.

However, the Commission wishes to be kept informed on an annual basis on the progress being made in this matter and requests that an update be presented at a public proceeding of the Commission each fall.

### **Conclusion**

75. The Commission has considered the information and submissions of CNSC staff and Cameco as set out in the material available for reference on the record, as well as the oral and written submissions provided or made by the participants at the hearing.
76. The Commission concludes that an environmental assessment of the proposed continued operation of the facility, pursuant to the *Canadian Environmental Assessment Act* is not required.
77. The Commission is satisfied that the applicant meets the requirements of subsection 24(4) of the *Nuclear Safety and Control Act*. That is, the Commission is of the opinion that Cameco is qualified to carry on the activities that the renewed licence will authorize and will make adequate provision, in carrying on those activities, 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.

78. The Commission therefore renews, pursuant to section 24 of the NSCA, Cameco Corporation's Class IB Waste Facility Operating Licence for Beaverlodge Mine and Mill site, located in Northern Saskatchewan, for a period of three years.
79. With this decision, the Commission directs Cameco to prepare a status report annually on the remediation performance at the Beaverlodge facility. The Commission requests that CNSC staff also prepare a report on the results of compliance activities carried out and on the licensee's performance during that period. The applicant and CNSC staff shall present their reports at a public proceeding of the Commission, approximately in the last quarter of each calendar year of the licence's duration.



Alan Graham  
Presiding Member,  
Canadian Nuclear Safety Commission

NOV 30 2009

Date

## Appendix A – Intervenors

Intervenors	Document Number
Eleanor Knight	CMD 09-H2.2 CMD 09-H2.2A
Métis Nation Saskatchewan, represented by R. Doucette and D. Racine	CMD 09-H2.3 CMD 09-H2.3A
Northern Saskatchewan Environmental Quality Committee, represented by M. McDonald and W. Kelly	CMD 09-H2.4 CMD 09-H2.4A
Bill Adamson	CMD 09-H2.5 CMD 09-H2.5A
James V. Penna	CMD 09-H2.6 CMD 09-H2.6A
Canada Eldor Inc., represented by D. Thomson	CMD 09-H2.7