

Record of Proceedings

In the Matter of

Applicant Cameco Corporation

Subject Mid-term Performance Report on the Operation
of Cameco Corporation's Blind River Uranium
Refining Facility

Date May 18, 2005

RECORD OF PROCEEDINGS

Applicant: Cameco Corporation

Address/Location: Cameco Corporation, P.O. Box 1539, Blind River, ON, P0R 1B0

Purpose: Mid-term Performance Report on the Operation of Cameco Corporation's Blind River Uranium Refining Facility

Application received: n/a

Date(s) of hearing: February 24, 2005

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

Members present: L.J. Keen, Chair A.R. Graham
C.R. Barnes M. J. McDill
J.A. Dosman M. Taylor

General Counsel: J. Lavoie
Secretary: M.A. Leblanc
Recording Secretary: S. Gingras

Applicant Represented By	Document Number
<ul style="list-style-type: none">• T. Rogers, Senior Vice-President and Chief Operating Officer• B. Steane, Vice-President of Cameco's Fuel Services Division• C. Astles, Manager of the Blind River Facility• J. De Graw, Superintendent of Quality Assurance at the Blind River Facility• J. Jarrell, Vice-President, Safety, Health and Environment	CMD 05-H6.1
CNSC Staff	Document Number
<ul style="list-style-type: none">• B. Howden• P. Thompson	<ul style="list-style-type: none">• D. Werry• G. Cherkas CMD 05-H6
Intervenors	Document Number
<ul style="list-style-type: none">• Town of Blind River	CMD 05-H6.2
<ul style="list-style-type: none">• Milltown Motors Limited	CMD 05-H6.3

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1. Introduction

Cameco Corporation of Saskatoon, Saskatchewan (Cameco) owns and operates a Class 1B nuclear facility located in the Town of Blind River, Ontario. The Blind River Uranium Refinery (the facility) refines uranium oxide known as “yellow cake” that is produced elsewhere at uranium mine and mill operations into uranium trioxide (UO₃). UO₃ is an intermediate product used in the manufacturing of nuclear reactor fuel. The UO₃ powder from the facility is then transported to Cameco’s Uranium Conversion Facility in Port Hope, Ontario for further conversion and processing.

Following a public hearing held on November 15, 2001 and January 17, 2002, the Canadian Nuclear Safety Commission (Commission¹) issued Fuel Facility Operating Licence (FFOL-3632.0/2007) to Cameco for the Blind River facility for a five-year period. In its *Record of Proceedings, including Reasons for Decision*², the Commission requested that CNSC staff present a report to the Commission on the performance of the facility at the approximate mid-point of the five-year licence term. The Commission required that the mid-term report address the overall performance of the licensee and the facility with respect to the protection of the health and safety of persons, the environment and the maintenance of national security and measures required to implement international obligations to which Canada has agreed. The Commission further required that the mid-term report be presented at a public proceeding of the Commission. The Commission subsequently decided to hold a public hearing on the mid-term report.

2. The Public Hearing Process

The public hearing on the mid-term report was held on February 24, 2005 in Ottawa, Ontario and was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*. The hearing was held in the CNSC Hearing Room in Ottawa.

This *Record of Proceedings* contains a summary of issues and information presented by the participants during the course of the hearing, as well as the views of the Commission where appropriate. The official record of each submission to the Commission is contained in the written submissions from CNSC staff, Cameco, two intervenors (the Town of Blind River and Milltown Motors Limited) and in the transcripts of the hearing. The mid-term status report was presented for information. The Commission was not required to make, and did not make, a licensing decision following the hearing.

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.

² Canadian Nuclear Safety Commission, February 18, 2002, *Record of Proceedings, Including Reasons for Decision, in the matter of Cameco Corporation., Application for a Licence to Operate the Blind River Nuclear Fuel Facility*

3. Issues and Commission Views

In reviewing Cameco's mid-licence performance in the operation of the facility, the Commission considered the information presented by the hearing participants on a variety of issues related to Cameco's qualifications to carry out the activities permitted under the licence, and to the adequacy of the measures Cameco has in place to protect the environment, the health and safety of persons, national security and international obligations to which Canada has agreed. That information and the Commission's views are summarized below.

3.1 Radiation Protection

With respect to the protection of the workers at the facility from the effects of radiation, CNSC staff noted that no worker received an effective dose in excess of regulatory limits, and that no radiological incidents have been reported to the CNSC during the review period. CNSC staff considers that the monitoring data demonstrates that the licensee's radiation protection program is being implemented effectively to protect workers against radiation health hazards. CNSC staff also noted that Cameco successfully developed and instituted in 2003 a new internal dose assignment program in accordance with the requirements of the CNSC Regulatory Transition Plan.

Cameco added that a primary focus of its established and comprehensive radiation program has been to reduce employee external radiation exposure in the raffinate processing area of the operation. Cameco also indicated that, to address the remaining CNSC requirements for the internal dosimetry program, Cameco will apply to the CNSC in 2005 for a separate Dosimetry Services Licence.

With reference to the new internal dosimetry program, the Commission sought further information on what actions would be taken by Cameco in the event of a positive lung count examination. In response, Cameco stated that the affected employee would first be retested. If the positive reading is confirmed by the retest, a formal investigation would be undertaken to determine and address the cause of the contamination. There has not been any positive lung count examination to date.

Based on this information, the Commission is satisfied with Cameco's performance with respect to radiation protection during the mid-term review period.

3.2 Environmental Protection

With respect to Cameco's performance in protecting the environment, CNSC staff reported that Cameco maintains a comprehensive environmental protection program which meets all applicable requirements. CNSC staff concluded that the facility operation does not pose an unreasonable risk to the environment or members of the public.

Cameco reported that, during the licence period, it carried out an Ecological Risk Assessment (ERA) to determine whether refinery operations are impacting on the environment in the vicinity. Cameco concluded from this assessment that, at current emission levels, no significant risk to the environment is occurring or expected. Cameco indicated that it has initiated the implementation of the two recommendations that arose from the ERA. The first recommendation was to collect sediment samples in the lake down current of the location of the effluent discharge diffuser and analyze the samples for uranium. Sediment sampling was done in the fall of 2004. The second recommendation was to relocate the high-volume air sampling station. Instead of relocating the station, Cameco elected to purchase an additional one. CNSC staff reported that it reviewed the ERA and provided minor comments to Cameco. Cameco has revised the ERA accordingly and has made acceptable progress in addressing outstanding concerns.

Cameco noted that it implemented, in 2002, an improved groundwater monitoring program. The modifications were in response to the results of a technical review of the previous program in 2001. Cameco noted that monitoring results show no adverse effects of the facility operation on groundwater quality during the current licensing period.

Cameco also reported that the results of soil sampling near the facility, which is performed on an annual basis, show only marginally higher uranium soil concentrations (approximately 1 µg/g) when compared to pre-operational monitoring, and the levels remain well below those where human or environmental impacts are expected to occur.

Cameco noted that uranium emissions in both stack and wastewater discharges are routinely monitored. Cameco reported that it was able to reduce its uranium and nitrous oxide emissions by modifying operating systems and improving various scrubber operations. CNSC staff added that Cameco was able to demonstrate from stack and liquid effluent monitoring data that uranium discharges from the facility were consistently below the limits set out in Appendix C of the licence for the entire review period. CNSC staff also noted that the 2003 and 2004 emissions results are the lowest in the licensing history of the facility.

The Commission questioned Cameco on why there were fewer environmental samples taken in 2004 in comparison to previous years. In response, Cameco explained that, in given years, the Ontario Ministry of the Environment visits the site to take independent samples. When this happens, Cameco also takes duplicate samples at the same time and location for comparison purposes. That sampling, which did not occur in 2004, is in addition to Cameco's routine sampling and hence the variation in reported sampling rates by year. Cameco confirmed that no significant differences in the results had been observed between the two sets of samples. CNSC staff stated that it considers that the current environmental sampling program exceeds regulatory requirements.

Based on the information and considerations summarized above, the Commission is of the view that Cameco's performance in protecting the environment has been satisfactory during the mid-term licensing period.

3.3 Conventional Health and Safety

CNSC staff reported that there were no reported injuries in 2002 and 2004, but that there were 3 lost-time injuries in 2003, and one lost time injury was reported in January 2005. CNSC staff agrees with Cameco's opinion that these incidents are not serious and is satisfied with Cameco's implementation of its conventional safety program at the facility.

Cameco added that it has an active safety program at the Blind River facility. Mandatory monthly safety meetings are held for all employees, as well as a Joint Management and Employee Safety meeting and a monthly improvement and communication meeting.

Based on this information, the Commission is of the view that Cameco's performance in the area of conventional health and safety at the facility during the mid-term review period has been satisfactory.

3.4 Operational Compliance

CNSC staff reported that the nature of the deficiencies discovered during CNSC inspections at the facility did not pose an unreasonable risk to the health and safety of persons or to the environment. CNSC staff indicated that these deficiencies have been, or are being, corrected by the licensee within a schedule accepted by CNSC staff.

CNSC staff reported that, while there were no significant radiological events were reported to the CNSC during the review period, four minor incidents were reported, including one reported in accordance with the *Packaging and Transport of Nuclear Substances Regulations*. CNSC staff stated that it is planning a packaging and transport audit at the end of March 2005.

With respect to planned future operations, CNSC staff reported that it was evaluating Cameco's application to the CNSC to upgrade its incinerator control system at the refinery. This project was initiated to meet the 2006 Ontario Ministry of the Environment guidelines.

Based on this information, the Commission is of the view that Cameco's performance with respect to its regulatory compliance and reporting has been satisfactory during the mid-term review period.

3.5 Quality Assurance

The CNSC requires that licensees have acceptable quality assurance programs in place. In this regard, Cameco reported that the Blind River facility was registered to the ISO 14001 standard for environmental management systems in January 2002. Cameco has since successfully maintained this registration. CNSC staff reported that it reviewed parts of Cameco's quality assurance program during quarterly inspections of the site. CNSC staff noted that Cameco has corrected the minor deficiencies found during those reviews within the schedule accepted by CNSC staff.

Based on this information, the Commission is of the view that Cameco's performance with respect to quality assurance has been satisfactory during the mid-term review period.

3.6 Emergency Preparedness and Response Plan

With respect to Cameco's performance during the review period in the area of emergency preparedness, CNSC staff noted that it reviewed the emergency preparedness and response plan in the fall of 2004 and requested that Cameco make certain changes. The final plan was received in February 2005 and is under review by CNSC staff.

CNSC staff reported that, based on the review of documents and observations made during inspections and observation of emergency drills, it concluded that Cameco's implementation of its emergency preparedness and response program meets requirements. In its intervention, the Town of Blind River commented that Cameco's emergency response team works in cooperation with its own emergency team and with other emergency services in the community.

Based on this information, the Commission is of the view that Cameco's performance with respect to emergency preparedness planning has been satisfactory during the mid-term review period. The following section addresses related matters specific to the prevention and ability to respond to actual emergencies involving fire at the facility.

3.7 Fire Protection

With respect to Cameco's performance in the area of fire protection, CNSC staff reported that it considers that Cameco's fire protection program meets requirements. Cameco reported that it conducts regular fire and evacuation drills. Cameco further noted that it purchased new fire protection equipment during the current licence period, and the process shift supervisors completed first responder training. Cameco also reported that it implemented, as required by the licence, third-party annual reviews of compliance with the inspection requirements of the *National Fire Code*. CNSC staff added that Cameco has addressed all of the issues identified during those reviews in a timely manner.

CNSC staff reported that some deficiencies with respect to compliance with the Fire Code were found during an inspection of the facility in May 2004. CNSC staff, however, did not consider these to pose an unreasonable risk at the time. CNSC staff added that all of those deficiencies have been properly addressed by Cameco.

CNSC staff noted that it has requested Cameco to review its existing arrangements with the local fire department and submit action plans for responding to fires involving hazardous materials. In response to this request, Cameco has obtained a letter of understanding from the local fire department concerning fire response.

In response to questions from the Commission on fire fighter training and fire equipment, Cameco stated that fire suppression training was done in collaboration with the Town's fire

department personnel on site. Similar on-site training is planned for May 2005. Cameco has also implemented a fire hazard plan to provide information on the various potential scenarios on site. Cameco considers that it has the training and equipment to adequately deal with a major fire involving hazardous substances. CNSC staff indicated that it is planning to conduct a review of the off-site capabilities of the local fire department in the second half of the licensing period.

Based on this information, the Commission is of the view that Cameco's performance with respect to fire safety has been satisfactory during the mid-term review period.

3.8 Security

With respect to Cameco's performance during the review period in the area of security, CNSC staff reported that Cameco is operating in compliance with all requirements.

While it would not be appropriate for the Commission to discuss security matters in detail in a public document such as this *Record of Proceedings*, the Commission examined the relevant information and is satisfied that Cameco's performance with respect to maintaining security at the facility has been acceptable during the mid-term review period.

3.9 Non-Proliferation and Safeguards

Concerning the CNSC's requirement for non-proliferation and safeguards at the Blind River facility, Cameco reported that weekly inventory verification was submitted to the CNSC. The IAEA regularly inspects the facility and verifies process inventories. CNSC staff noted that the audits of the inventory systems are conducted jointly by the IAEA and the CNSC. CNSC staff considers the implementation of safeguards at this facility to be acceptable.

Based on its consideration of CNSC staff's report, the Commission is of the view that Cameco's performance in respect of maintaining Canada's international obligations for non-proliferation and safeguards has been satisfactory during the review period.

3.10 Decommissioning Plan and Financial Guarantees

The CNSC requires that licensed nuclear facility operators have in place a Preliminary Decommissioning Plan and related guarantee that ensure adequate funds will be available to safely decommission the facility at the end of its operating life, even in the event that the facility owner becomes financially insolvent.

CNSC staff reported that Cameco completed its commitment to implement a financial guarantee by submitting to the CNSC an irrevocable letter of credit from a bank for the full amount as estimated in the Preliminary Decommissioning Plan dated December 2001. Cameco continues to maintain this financial guarantee. In response to questions from the Commission on this topic,

Cameco explained that the calculations were based on a radiological decontamination of most materials for subsequent release/sale from licensed control.

Based on this information, the Commission is of the view that the Preliminary Decommissioning Plan and related financial guarantee for the Blind River facility remained acceptable during the review period.

3.11 Public Information Program

With respect to Cameco's public information program, Cameco stated that it maintains an active role in the community. For example, Cameco made a presentation to the Blind River Town Council in December 2004 on its environmental performance and community related activities over the last few years. Cameco noted that a similar presentation was made in January 2005 to the Mississauga First Nation Council.

In its intervention, the Town of Blind River expressed the view that Cameco kept the Town's Environmental Monitoring Committee, Council and public well informed on the refinery's operations and plans. CNSC staff considers that the members of the public are well informed and have a suitable opportunity to obtain information.

Based on this information, the Commission is of the view that Cameco's performance with respect to public information has been satisfactory during the mid-term review period.

4. Conclusion

The Commission considered CNSC staff's report on the performance of Cameco Corporation in the operation of their Blind River facility. The Commission also considered, as part of that mid-term performance report, the written and oral submissions of Cameco and two intervenors who participated in a public hearing held by the Commission on this matter on February 24, 2005.

Based on all of the information available for reference on the record of the hearing, the Commission is of the view that Cameco's performance has been acceptable in respect of its compliance with the regulatory requirements and conditions of its licence during the approximate first half of the current licence period.

The purpose of the mid-term performance report, including this public hearing, was to inform the Commission, rather than to support an application for licensing. As such, the Commission did not make any decisions with respect to the licensing of the facility pursuant to section 24 of the *Nuclear Safety and Control Act*.

Marc A. Leblanc
Secretary,
Canadian Nuclear Safety Commission
Date of release of Record of Proceedings: May 18, 2005