

Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant Cameco Corporation

Subject Application for the Renewal of the Operating
Licence for the Key Lake Uranium Mill

Date October 25, 2004

RECORD OF PROCEEDINGS

Applicant: Cameco Corporation

Address/Location: 2121-11th Street West, Saskatoon, Saskatchewan, S7M 1J3

Purpose: Application for the renewal of the operating licence for the Key Lake Uranium Mill

Application received: March 17, 2004

Date(s) of hearing: July 8, 2004
September 15, 2004

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

Counsel: K. Moore / J. Lavoie

Secretary: M.A. Leblanc

Recording Secretary: S. Gingras

Applicant Represented By	Document Number
<ul style="list-style-type: none"> • T. Rogers, Chief Operating Officer • J. Jarrell, Vice President, Safety, Health and Environment • W. Buck, General Manager of Key Lake and McArthur River • S. Grant, McArthur River and Key Lake Manager of Quality Management System, Environmental Management System and Regulatory Compliance • M. Seier, Senior Coordinator, Radiation Safety of Key Lake and McArthur River • P. Landine, Manager of Hydrology, Civil Engineering and Cameco's Safety, Health and Environment department • S. Donald of Golder Associates • H. Mittal, Principal of H.K. Mittal and Associates 	<p>CMD 04-H18.1 CMD 04-H18.1A CMD 04-H18.1B</p>
CNSC Staff	Document Number
<ul style="list-style-type: none"> • B. Howden • K. Scissons • P. Courtney 	<p>CMD 04-H18 CMD 04-H18.A</p>
Intervenors	Document Number
See Appendix A	

Licence: Renewed
Date of Decision: September 15, 2004

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1. Introduction

Cameco Corporation (Cameco) has applied to the Canadian Nuclear Safety Commission (CNSC¹) for the renewal of its operating licence for the Key Lake uranium mill. Cameco has requested a five-year licence term.

Cameco is currently authorized by the CNSC to operate a uranium mill at Key Lake, Saskatchewan, and to maintain the facilities necessary to support this operation. The current licence also authorizes Cameco to possess, store, transfer, import, use, and dispose of nuclear substances and radiation devices.

Issues:

In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*:

- 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.

Public Hearing:

The Commission, in making its decision, considered information presented for a public hearing held on July 8, 2004 and September 15, 2004 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 04-H18 and CMD 04-H18.A) and Cameco (CMD 04-H18.1, CMD 04-H18.1A and CMD 04-H18.1B). The Commission also considered oral and written submissions from intervenors. See Appendix A to this *Record of Proceedings* for a detailed list of the interventions.

2. Decision

Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*, the Commission concludes that Cameco is qualified to carry on the activity that the licence will authorize. The Commission is also satisfied that Cameco, in carrying on that activity, 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. Therefore,

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, pursuant to section 24 of the *Nuclear Safety and Control Act*, renews the Uranium Mine Operating Licence for the Key Lake Uranium Mill, held by Cameco Corporation, Saskatoon, Saskatchewan. The renewed licence (UMOL-MILL-KEY.00/2008) is valid from November 1, 2004 to October 31, 2008, unless suspended, amended, revoked or replaced.

The Commission includes in the licence the conditions recommended by CNSC staff, as set out in the draft licence attached to CMD 04-H18.

With this decision, the Commission also requests CNSC staff to present to the Commission an interim status report on the performance of the facility over the first half of the licence term. The status report is to be presented at a public proceeding of the Commission as soon as practical following the November 2006 mid-point of the licence term.

3. Issues and Commission Findings

In making its licensing decision under section 24 of the *Nuclear Safety and Control Act*, the Commission considered a number of issues relating to Cameco's qualifications 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. The Commission's findings on these issues are summarized in this section.

3.1 Radiation Protection

As part of its evaluation of the adequacy of the provisions for protecting the health and safety of persons, the Commission considered the past performance and future plans of Cameco in the area of radiation protection at the Key Lake mill.

Cameco, in its submission, reported that radiation doses were well below the regulatory limits and decreased during the current licensing period. Cameco explained that the lower doses in 2003 were influenced to some extent by a temporary shutdown of the mill in response to an interruption in the supply of uranium ore². Cameco also noted that, while one Key Lake worker recorded a dose of 11.2 mSv, the majority of that dose was received while the individual was assisting in the response to the mine water inflow incident at the separately licensed McArthur River mine site.

CNSC staff expressed its concurrence with these findings. CNSC staff also observed that the worker radiation doses did not increase after the milling of higher grade McArthur River ore began in 2001. Furthermore, CNSC staff reported that all seven action notices that it raised during a comprehensive evaluation of Cameco's radiation protection program at the Key Lake mill in 2001 have been successfully closed.

² Shipments of ore from Cameco's McArthur River Mine were temporarily interrupted while Cameco addressed a major groundwater inflow event at the mine that began in April 2003.

Cameco stated that, despite its overall good performance in radiation protection at the mill, opportunities for improving the control of airborne uranium dust concentrations in the mill (and in particular in the yellowcake handling areas) were identified and are being acted upon as part of Cameco's ALARA (as low as reasonably achievable) program. In this regard, Cameco stated that it has prepared an action plan for further reducing airborne uranium dust, and that approximately half of the 22 identified items in the action plan have been completed. The remainder of the plan is to be implemented by the end of 2004. CNSC staff expressed its satisfaction with this plan which includes improved housekeeping in problem areas, additional training to workers, revision of procedures and performing of appropriate repairs.

With respect to the relatively high number of reportable incidents that occurred at the facility involving airborne uranium dust, Cameco explained that this was due, in part, to the fact that no credit was being given to the protection factor afforded by the respirators worn by the workers. CNSC staff expressed its agreement with this statement and noted that the reporting trigger is thus being conservatively applied by Cameco.

Further with respect to the radiation protection program at Key Lake, Cameco reported that, in 2002, it launched a new radiation protection database to consolidate the management of radiation-related data. According to Cameco, this database has significantly improved the tracking of radiation work permits related to dosimetry and the reporting of both dosimetry and routine area monitoring results. CNSC staff expressed its support for, and satisfaction with, this improved radiation information management system.

Conclusion on Radiation Protection:

Based on the above information, the Commission is satisfied that Cameco has made, and will continue to make, adequate provisions for the protection of persons from radiation while operating the Key Lake mill.

3.2 Environmental Protection

The Commission considered the potential for the activities to adversely affect the environment, to determine whether Cameco will take adequate measures to protect the environment during the operations of the Key Lake mill

3.2.1 Effluent and Downstream Water Quality

Cameco reported that the mill effluent has remained within the limits prescribed in the licence. Cameco also noted that the quality of the water downstream of the mill has improved since the time when the ore from Key Lake area was being milled. Lower mean contamination levels were also observed by Cameco during the period when the mill was temporarily shutdown in 2003.

Cameco reported that it initiated an investigation of the seasonal decrease in pH in Wolf Lake downstream of the mill in 2000. Cameco concluded from the investigation that the decrease in pH resulted from the natural seasonal breakdown of organic matter rather than by the mill

effluent. Cameco considers this issue closed, and CNSC staff has accepted the results of the investigation.

CNSC staff indicated that toxicity testing has been completed on a regular basis on both the mill effluent and the water in the receiving environment. Cameco reported that, while one effluent sample failed the toxicity test, further testing demonstrated that this was an isolated event. CNSC staff confirmed that follow-up toxicity tests on the effluent had not identified a causal agent, nor had further toxicity test failures occurred.

Cameco reported that the effluent quality exceeded the contaminant discharge limits on two occasions during the current licence period. However, CNSC staff noted that the quantities of effluent released were relatively small and that no significant impacts on the environment were expected as a result.

3.2.2 Air Emissions

CNSC staff noted that Cameco monitors stack emissions from the calciner and packing areas of the mill on an annual basis for metals and radionuclides. The emissions levels have remained low and within licence limits.

3.2.3 Environmental Effects Monitoring

Cameco reported that an Environmental Effects Monitoring (EEM) program was designed to assess the health of the aquatic ecosystems exposed to effluent discharges from the Key Lake operation. Cameco added that the results of water quality monitoring conducted on the receiving environment and a background station indicated that all EEM water quality parameters were below the levels that would trigger a further assessment.

Cameco explained that it performed an assessment of the health of the white sucker population in the downstream water bodies, after it discovered in 1995 that these fish had an ulcerative skin disease. Cameco suspects that the disease was the result of environmental stress caused by the release of treated mill effluent and treated sewage to the David Creek drainage system. Cameco reported that it has observed a recovery of the white sucker population from the disease, but that other abnormalities in the fish were found. Cameco noted, however, that the early results of a follow-up study performed in early 2004 indicate that similar abnormalities exist in the reference area that is unaffected by the mill effluent.

Further with respect to these investigations, CNSC staff confirmed that Cameco established and implemented a CNSC-approved biological monitoring program to identify any increases in impacts previously identified. From that program, impacts were identified in the benthic macro invertebrate communities and the white sucker population in the small near-field water bodies. CNSC staff has observed from this work that nickel and selenium concentrations have increased since the milling of ore from the McArthur River mine began and that the benthic invertebrate population in Fox Lake continues to decline in diversity. However, CNSC staff noted that the impacts and the impact zone remain within those predicted and judged acceptable in the McArthur River Environmental Impact Statement.

With respect to the above-noted increase in selenium concentrations, Cameco reported that elevated levels of selenium in sediments and fish tissue within the David Creek system were identified. Cameco added that it designed and initiated a study on lake whitefish to verify the impacts of the selenium levels. This study is planned to be completed in 2004. Also, as requested by CNSC staff, Cameco submitted a plan which identified a number of planned actions for determining the effect on the environment of selenium contained in the Key Lake mill effluent and, if necessary, a program for selenium control would follow. CNSC staff added that definitive results of the investigation were not expected until later in 2004.

Cameco stated that it will also be investigating the behaviour of molybdenum in the environment downstream of the Key Lake operation. In this regard, CNSC staff expressed concern about the existing levels of molybdenum in the receiving environment and stated that the effects could exacerbate without the implementation of additional controls. Therefore, CNSC staff recommended that the Commission add a condition to the licence (5.4) which would require Cameco to develop and implement an acceptable investigation and control program for molybdenum prior to December 31, 2004.

M. Shiell, in her intervention, expressed concerns about the long-term reproductive effects of the mill effluents on the aquatic plants and benthic invertebrates in the receiving water bodies. In response to the Commission's questions on the monitoring of these effects, Cameco confirmed that the monitoring of the effects on biota in the receiving environment is being carried out.

The Northern Saskatchewan Environmental Quality Committee (EQC) - Athabasca Subcommittee expressed concern about the water quality in Horsefly Lake, its color being unusual for the area. In response to the Commission's questions on the condition of Horsefly Lake, Cameco stated that the colour of this small lake is the result of significant amounts of iron and nickel having precipitated after large quantities of water were discharged to it. Cameco noted that it has since installed a treatment facility to lower the amount of iron and nickel being discharged to the lake and that the water quality in the lake is currently good. Cameco added that no water has been discharged to this lake for a few years, and that while some discharges to Horsefly Lake will likely occur in the future, it will occur at a reduced rate. CNSC staff expressed its concurrence with this response of Cameco and indicated that it considers the issues at Horsefly Lake to have been adequately handled by Cameco.

3.2.4 Incidents

In its presentation to the Commission, Cameco reported that three incidents involving spills of coolant and transmission fluid occurred in 2004. In its submission, Cameco also noted that, while 20 incidents occurred between January 1, 2002 and May 31, 2004, none were considered to be environmentally significant. In order to prevent further incidents, Cameco has replaced the truck used to transfer contaminated material and has taken steps to reduce leaks in yellowcake drums (more information on incidents involving yellowcake drums is provided in section 3.4.3). CNSC staff stated that it considers the effects to the environment from these incidents to be minor. The releases to the environment were small, localized and cleaned up to the extent possible.

CNSC staff noted that, during 2004, Cameco provided an action plan and schedule for addressing CNSC staff's evaluation of the above-noted high frequency of incidents. CNSC staff

has reviewed and accepted Cameco's plan and schedule for three of the seven action notices resulting from CNSC staff's evaluation. CNSC staff is currently reviewing the additional information provided by Cameco on the remaining four action notices.

3.2.5 Groundwater Quality

Cameco reported increased ammonia concentrations in groundwater at the mill site terrace. Cameco added that it performed detailed source identification and source removal work during the years 2002 and 2003, and initiated an extensive study by a hydrogeological consultant in March 2004.

CNSC staff confirmed that two sources of the ammonia contamination had been located and that work is being performed to eliminate them. From its review of the preliminary reports, CNSC staff stated that it is satisfied that there is no immediate danger of contamination reaching any surface water bodies. CNSC staff expects the final report shortly.

The Commission asked Cameco whether it had a plan to recover contaminants from the groundwater if necessary. In response Cameco stated that, before considering the need for any remediation strategies and technologies, it will determine with greater precision the extent and movement of any contaminant plume. Cameco also described the work performed to stop the source of ammonia.

In response to the Commission's questions on whether the one-dimensional hydrogeological model being used in the analysis was adequate, Cameco indicated that one-dimensional modelling was used because there were restrictions on the size of the database available. Cameco is planning to perform further modelling activities. CNSC staff stated that it considers a one-dimensional model to be more conservative (i.e., tending to overestimate the effects) in this instance. CNSC staff is also of the opinion that the piezometers in the field, rather than predictive modelling results, will provide the most useful information on the actual extent of contamination.

With respect to another groundwater contamination issue, Cameco reported that the 2002 monitoring results have indicated a sudden, steep increase in groundwater solute concentrations in the vicinity of the old bentonite-lined ore/cobble ore storage facility that is currently being remediated. CNSC staff noted that the bentonite containment systems for the ore storage area and the two special waste areas had been previously found defective and that, despite repairs, continued to leak significantly. The contamination was eventually controlled through ongoing pump and treat operations. Cameco noted that, at the request of CNSC staff, it has committed to accelerate the originally-proposed reclamation program and to finalize cleanup operations at this location by the end of 2004.

3.2.6 Conclusions on Environmental Protection

Based on the above information, the Commission is satisfied that Cameco has made, and will continue to make, adequate provision for the protection of the environment during the proposed continued operation of the Key Lake mill. The Commission also agrees with licence condition 5.4 proposed by CNSC staff which will require Cameco to develop and implement an acceptable molybdenum control program by December 31, 2004.

3.3 Conventional Health and Safety

As part of its evaluation of the adequacy of provisions for protecting the health and safety of persons, the Commission considered the past performance and future plans of Cameco in the area of conventional health and safety at the Key Lake mill.

Cameco reported no lost-time injuries in 2001 and 2002, and two lost-time injuries in 2003. However, Cameco indicated that three occupational lost-time injuries have occurred recently in 2004.

The Commission asked the joint intervenors, the Canadian Nuclear Workers Council (CNWC) and the United Steel Workers of America (USWA), whether they were satisfied with the resolution of the recent lost-time injuries. The CNWC and the USWA answered that these incidents had been reviewed by their occupational health and safety committee, and that they considered the resolution of these incidents to be satisfactory.

Cameco stated that it has been implementing a revised safety program since 2002, including the use of a database to manage any required corrective actions.

CNSC staff indicated that Cameco's Key Lake operational health and safety program (OH&S) was designed to meet regulatory requirements, as administered by Saskatchewan Labour on behalf of Human Resources Development Canada (HRDC). Saskatchewan Labour evaluated Cameco's OH&S program at Key Lake and found it to be acceptable. CNSC staff also explained that an Occupational Health and Safety Committee (OHSC) had been established at the site. Saskatchewan Labour also examined the activities of the OHSC, and advised CNSC staff that it was functioning properly.

The Commission asked the CNWC and the USWA about whether they find their relationship with Cameco's management on health and safety issues to be satisfactory. The CNWC and the USWA answered that they considered the relationship with Cameco to be generally positive, particularly regarding safety.

Based on this information, the Commission is satisfied that Cameco has made, and will continue to make, adequate provision for the protection of persons from conventional (non-radiological) hazards during the operation at the Key Lake mill.

3.4 Operations

The Commission considered the current and past operating performance as a further indication of Cameco's qualifications to continue operating the facility and, in doing so, provide adequate protection for the environment, persons, national security and international obligations.

CNSC staff reported that the declining trend rating regarding operations was largely influenced by issues that have recently arisen and which, as discussed further below, are being addressed by Cameco. In some cases, CNSC staff had not yet completed its evaluation of the corrective actions.

3.4.1 Mill Operations

CNSC staff reported that it carried out eleven site inspections, two evaluations and three audits during the current licence period. From this, CNSC staff reported that it found several minor deficiencies in Cameco's event investigation and reporting procedures. CNSC staff issued seven action notices which Cameco is in the process of addressing in a satisfactory manner. All action notices have been closed with the exception of those related to the high frequency of operating incidents and the transport and packaging operations.

With respect to the frequency of reportable operating events, 32 events were reported pursuant to section 29 of the *General Nuclear Safety and Control Regulations* and section 19 of the *Packaging and Transport of Nuclear Substance Regulations*. Twenty-two of these incidents occurred in 2003 and were the subject of an evaluation by CNSC staff.

In response to the Commission's question about ageing issues at the facility, Cameco stated that this was not a factor because the equipment has been continually maintained and updated throughout the life of the facility.

3.4.2 Waste Management Area Operations

Tailings:

In its submission, Cameco provided details on the slope instability and sloughing issues in the Deilmann Tailings Management Facility. Cameco also stated that it has taken, and will continue to take, appropriate measures to reduce the sloughing rates and to increase safety by measures such as relocating infrastructure away from the vicinity of potential instability.

Cameco stated that, as a result of studies carried out by specialist consultants, it has concluded that it is not possible to predict reliably with available geotechnical models the timing and magnitude of the slope movements and that it intends to rely on observational methods, including expanded monitoring, to manage the risks.

CNSC staff expressed agreement with Cameco on this finding and reported that it has concluded from other hydrogeological modelling studies that the sloughing will not significantly affect contaminant migration from the pit in the long-term. CNSC staff noted, however, that the sloughing is expected to continue during the remainder of the pit flooding period and that the situation is being closely monitored.

Further in this regard, the Commission enquired as to whether the sloughing of the pit walls would significantly impact the capacity of the pit as a tailings management facility during the remaining life of the McArthur River mine operation. In response, Cameco stated that, even when taking into account the probable loss of space due to the sloughing, the pit is large enough to safely accommodate all of the tailings projected to be generated from the milling of the ore from the McArthur River mine.

The Commission closely examined this slope instability issue during the hearing and was not persuaded that a better understanding and prediction of the slope failure processes could not be reasonably obtained. The Commission therefore requests that this matter be closely studied and

that CNSC staff specifically report on this issue, among other things, at the time of the mid-point status report on the facility (see sections 3.12 and 5 below). The Commission is particularly concerned about the safety of workers in the vicinity of the pit and the potential effects on the capacity and long-term environmental performance of the tailings management facility.

Waste Rock:

With respect to waste rock management, CNSC staff reported that, in 1996, Cameco developed an action plan and schedule for interim management of the Gaertner and Deilmann waste rock disposal areas. CNSC staff noted that the schedule for this project has slipped over the years and needs to be updated. To assist in this regard, CNSC staff recommended that the Commission add a condition to the licence (2.3) that would require Cameco to develop and implement an acceptable action plan and schedule for the management of waste rock. The proposed licence condition would require that Cameco submit a proposed action plan and schedule for the approval of the Commission, or person authorized by the Commission, prior to January 31, 2005.

The Commission considered this recommendation and decided to add the licence condition as recommended by CNSC staff.

3.4.3 Packaging and Transport Operations

Cameco reported several operational incidents involving packaging and transport. CNSC staff referred to five incidents involving improper packaging of yellowcake, resulting in leakage. Cameco stated that, following these incidents, it examined loading and inspection procedures and operator training relating to packaging and transport and concluded that improved handling methods would increase reliability. Among other actions taken to improve the situation, Cameco indicated that it developed a proposal to construct a coverall building for yellowcake shipment handling. Pending regulatory approvals, Cameco plans to begin construction of the building later in 2004.

The Commission enquired as to whether the use of plastic rather than metal drums could reduce the frequency of packaging and transport incidents. In response, Cameco stated that the metal drums currently in use meet all applicable requirements and that the problem was related to the way the drums were being manipulated, rather than the drum material. In response to a follow-up question from the Commission on the changes made to the drum handling procedures, Cameco explained that it is inspecting the drums before and after loading them with yellowcake and that its quality procedures for packing have been improved. Cameco also indicated that there had not been any packaging and transport incidents for the last 1.5 years.

CNSC staff concluded that, while Cameco has addressed several of the issues identified during CNSC staff's earlier audits of the packaging and transport process, the most recent audit conducted in May 2004 revealed that significant deficiencies relating to packaging and transport still remain. However, CNSC staff also reported that Cameco has either taken, or is planning to take, corrective actions on all of the audit findings. CNSC staff is awaiting further information from Cameco on 4 of the items.

In response to a question from the Commission on the nature of the four remaining items, Cameco stated that these involve the provision of: more documentation concerning drop testing

of yellowcake drums (relating to 2 items); a procedure relating to non-destructive testing of the walls of the slurry container; and clarification of inspection procedures during temporary storage.

3.4.4 Conclusion on Operations

Based on the above information and considerations, the Commission is satisfied that the past operating performance at the Key Lake mill provides a positive indication of Cameco's ability to adequately carry out the proposed activities under the licence.

The Commission accepts the CNSC staff recommendation to add the proposed licence condition 2.3 to the licence requiring Cameco to develop and implement an acceptable action plan and schedule for the management of waste rock.

The Commission also requests that further information on the slope sloughing issue in the Deilmann Tailings Management Facility be provided in the CNSC staff's interim status report on the facility to be presented to the Commission following the mid-point in the licence term.

3.5 Quality Assurance

3.5.1 Quality Management System (QMS)

In its assessment of Cameco's ability to sustain compliance and acceptable performance during the proposed licence period, the Commission considered Cameco's quality assurance programs at the Key Lake mill.

Cameco explained that it implemented its Quality Management System (QMS) in 2003 and that, following this implementation, an extensive training and education program took place. The site QMS personnel will also be conducting training sessions in 2004 and beyond for site personnel on many of the site QMS procedures. Cameco also indicated that its QMS manual was submitted to the CNSC in January 2003 and was revised in March 2004.

CNSC staff explained that it has accepted Cameco's plan as providing a broad basis for a QMS. However, until the CNSC staff's review of the full program is complete, CNSC staff will continue to rate quality assurance at the Key Lake project as below requirements.

3.5.2 Environmental Management System (EMS)

With respect to quality in the environmental protection program in particular, Cameco indicated that, in 2002, it obtained an ISO 14001 certification for its Environmental Management System (EMS) and that this registration has been maintained. CNSC staff explained that, while the certification of the EMS has enhanced Cameco's environmental protection program, the above-noted deficiencies in the broader QMS also affect the related EMS. In response to this, Cameco indicated that it would be revising its EMS nonconformance procedures and associated work instructions and forms.

Cameco noted that other improvements to its EMS in the areas of documentation control, change control and training are being addressed in response to the results of EMS audits carried out by

Cameco (2003) and the Quality Management Institute (2004). CNSC staff added that Cameco has demonstrated a strong commitment to resolving the issues related to its EMS.

3.5.3 Conclusion on Quality Assurance

Based on the above information, the Commission is satisfied that the quality assurance measures for the operations of Cameco's Key Lake mill are satisfactory.

3.6 Emergency Preparedness

With respect to the protection of persons and the environment during emergencies that could arise at the Key Lake mill site, Cameco indicated that its emergency response plan was revised, and that training was initiated in 2003. Cameco further explained that two emergency simulations were conducted in 2002. The exercises included simulated incidents involving hazardous materials and fire, and provided for the testing of building evacuation systems.

CNSC staff stated that, while it did not carry out a systematic evaluation of emergency response activities during the current licence term, it did monitor the above-noted two emergency response exercises. CNSC staff concluded that both of those exercises indicated appropriate responses by Cameco.

CNSC staff noted that the Key Lake Operation is a party to a mutual assistance agreement with other mine sites in the area.

Based on this information, the Commission is satisfied that Cameco is adequately prepared for emergencies that could arise at the Key Lake Operation.

3.7 Security

CNSC staff noted that, from its assessment, the Key Lake mill site has an acceptable security program. CNSC staff also reported that Cameco submitted an acceptable *Vulnerability Analysis and Threat Risk Assessment* in April 2002.

Based on this information, the Commission is satisfied that Cameco will continue to make adequate provision for maintaining security at the Key Lake mill site.

3.8 Decommissioning Plan and Financial Guarantee

With respect to the decommissioning plan and related financial guarantee for the Key Lake mill, CNSC staff reported that financial guarantees are in place in the form of irrevocable letters of credit for a total of \$45.46 million, and that the letters of credit are in good standing with an annual self-renewal date. CNSC staff further explained that the value of this financial guarantee was based on costs estimates contained in an accepted Preliminary Decommissioning Plan, dated April 2003.

In its intervention, the Northern Saskatchewan EQC expressed concerns on the planned methods for decommissioning the site. In response to a question from the Commission on the communications about decommissioning to residents of the area, Cameco explained that ongoing discussions are regularly held with the EQC. Cameco also indicated that it participated in a workshop with the EQC in 2002, where a history of the tailings facility and the potential relocation scenarios were presented.

Based on this information, the Commission is satisfied that an appropriate Preliminary Decommissioning Plan and related financial guarantee are in place for the purpose of the application. The Commission is also satisfied with Cameco's efforts to continue consulting with the local communities in the evolution of the decommissioning plan.

3.9 Public Information

With respect to the CNSC's requirement that licensees maintain acceptable public information programs, Cameco reported that its public information efforts for Key Lake are frequently combined with those for the McArthur River mine site. This is because the public information programs for these two facilities are, for all intents and purposes, the same in Cameco's view. Cameco also explained that the primary goal of the community involvement program is to consult with persons living in the vicinity of the mill and with other persons living in Northern Saskatchewan.

CNSC staff reported that Cameco conducted public meetings in several northern communities in April and May 2004 to provide an overview of all of Cameco's activities in Northern Saskatchewan. CNSC staff considers that Cameco has identified an acceptable cross-section of their target audiences, and that Cameco's communication products are varied and effective at reaching those target audiences.

Based on the above information, the Commission is satisfied that Cameco has an adequate public information program in place for the Key Lake Operation.

3.10 Safeguards and Non-Proliferation

Concerning the matter of whether Cameco will make adequate provision to ensure maintenance of Canada's international obligations for safeguards and non-proliferation, CNSC staff reported that the Key Lake mill is not subject to routine safeguards inspections. However, the International Atomic Energy Agency (IAEA) has the right to request complementary access to a location under the Additional Protocol. CNSC staff reviewed Cameco's procedures for facilitating prompt access to IAEA inspectors, and considers them to meet requirements. To date, the IAEA has not exercised its right to access the site.

Based on this information, the Commission is satisfied that Cameco has made, and will continue to make, adequate provisions in the areas of safeguards and non-proliferation at the Key Lake mill that are necessary for maintaining national security and measures necessary for implementing international agreements to which Canada has agreed.

3.11 Canadian Environmental Assessment Act

Before making a licensing decision, the Commission must be satisfied that all applicable requirements of the *Canadian Environmental Assessment Act* (CEAA) have been fulfilled. CNSC staff stated that no environmental assessment is required under the CEAA because the renewal of the operating licence is not a trigger for such an assessment.

The Commission accepts this recommendation and is satisfied that an environmental assessment is not required prior to the Commission making a decision on the application for renewal of the licence.

3.12 Licence Length

Cameco, in its application, requested that the operating licence for the Key Lake mill be renewed for five years. CNSC staff expressed the view that a five-year licence would not be appropriate in light of the program and operating deficiencies identified through the CNSC staff 's compliance program and discussed in the foregoing sections of this *Record of Proceedings*. CNSC staff alternatively recommended, therefore, that the Commission renew the licence for a period of four years. CNSC staff also proposed to submit, at the approximate mid-point of the licence term, a status report covering the relevant information on the operating performance of the facility.

M. Shiell, in her intervention, expressed the view that, until the scientific community can understand the long-term reproductive effects of alpha radiation, only a short licence should be granted for the operation of the Key Lake mill. M. Shiell recommended that only a two-year licence be considered.

Based on the above information and considerations, the Commission accepts CNSC staff's recommendation for a four-year licence term for this facility. The Commission also requests CNSC staff to provide, at a public proceeding of the Commission, a status report on the performance of the Key Lake Operation after the mid-point of the licence term (i.e., as soon as practical after November 2006).

4. Conclusion

The Commission has considered the information and submissions of the applicant, CNSC staff and intervenors as presented in the material available for reference on the record.

The Commission is satisfied that Cameco is qualified to carry on the activity that the licence will authorize. The Commission is also satisfied that Cameco, in carrying on that activity, 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.

The Commission therefore renews, pursuant to section 24 of the *Nuclear Safety and Control Act*, Uranium Mill Operating Licence for the Key Lake Operation, held by Cameco Corporation,

Saskatoon, Saskatchewan. The licence (UMOL-MILL-KEY.00/2008) is valid from November 1, 2004 to October 31, 2008, unless suspended, amended, revoked or replaced.

The Commission includes in the licence the conditions recommended by CNSC staff, as set out in the draft licence attached to CMD 04-H18.

With this decision, the Commission also requests CNSC staff to present to the Commission an interim status report on the performance of the facility. The status report is to be presented at a public proceeding of the Commission following the approximate mid-point of the licence term (i.e., as soon as practical after November 2006).

Marc A. Leblanc
Secretary,
Canadian Nuclear Safety Commission

Date of decision: September 15, 2004

Date of release of Reasons for Decision: October 25, 2004

Appendix A – Intervenors

Intervenors	Document Number
Canadian Nuclear Workers Council and the United Steel Workers of America, Local 8914, represented by G. Telfer	CMD 04-H18.2 CMD 04-H18.2A
Northern Saskatchewan Environmental Quality Committee, West Side Subcommittee, represented by N. Wolverine	CMD 04-H18.3 CMD 04-H18.3A
M. Shiell	CMD 04-H18.4 CMD 04-H18.4A