



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 Uranium Mine and Mill
Operating Licence for the Rabbit Lake Operation

Public Hearing
Date October 1, 2 and 3, 2013

RECORD OF PROCEEDINGS

Applicant: Cameco Corporation

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

Purpose: Application to renew the uranium mine and mill operation licence for its Rabbit Lake Operation

Application received: December 21, 2012

Dates of public hearing: October 1, 2 and 3, 2013

Location: Kikinahk Friendship Centre,
320 Boardman Street, La Ronge, Saskatchewan

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Intervenor
See Appendix A

Licence: Renewed

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1.0 INTRODUCTION

1. Cameco Corporation (Cameco) has applied to the Canadian Nuclear Safety Commission¹ for the renewal of the uranium Mine and Mill Operating Licence for its Rabbit Lake Operation located in northern Saskatchewan, approximately 750 kilometres north of Saskatoon, Saskatchewan. The current operating licence, UMOL-MINEMILL-RABBIT.00/2013, expires on October 31, 2013. Cameco requested a renewal of the licence for a period of 10 years.
2. The Rabbit Lake deposit was discovered in 1968. The Collins Bay A-Zone, B-Zone, D-Zone and Eagle Point deposits were discovered in 1971, 1977, 1979 and 1980 respectively. Open-pit mining of the Rabbit Lake deposit and the mill operations commenced in 1975. The Rabbit Lake deposit was mined out by 1984. The Collins Bay B-Zone deposit was subsequently open-pit mined from 1985 to 1991. Following a federal environmental assessment that concluded in 1993, underground mining of the Eagle Point deposit began in 1994 and continues at present. The Collins Bay D-Zone and A-Zone deposits were open-pit mined sequentially in 1995-1996 and 1996-1997 respectively. The Rabbit Lake Operation currently consists of one active underground uranium mine (Eagle Point mine), a mill, the Rabbit Lake In-pit Tailings Management Facility (RLITMF) and associated mine rock piles and water management infrastructure. The RLITMF was developed in the mined-out Rabbit Lake pit to securely manage tailings, and commenced operation in 1985. The site also has an inactive flooded open-pit mine (B-Zone), two reclaimed open-pit mines (A-Zone and D-Zone) and the partially-reclaimed Above Ground Tailings Management Facility (AGTMF) which contains the tailings from the milling of ore from the first open pit.
3. Cameco is currently authorized to operate a nuclear facility at Rabbit Lake and to maintain the facilities necessary to support this operation, including an underground mine, three flooded open-pit mines, a mill, waste management systems and associated site facilities. The current licence also authorizes Cameco to produce uranium concentrate, and to possess, store, transfer, import, use, and dispose of nuclear substances and radiation devices.
4. This request for the licence renewal includes only the ongoing activities at the Rabbit Lake Operation site.

Issues

5. In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*² (NSCA):
 - a) if Cameco is qualified to carry on the activities that the licence would authorize;

¹ 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 Statutes of Canada (S.C.) 1997, chapter (c.) 9.

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

6. The Commission, in making its decision, considered information presented for a public hearing held on October 1, 2 and 3, 2013 in La Ronge, Saskatchewan. The public hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*³. During the public hearing, the Commission considered written submissions and heard oral presentations from CNSC staff (CMD 13-H15) and Cameco (CMD 13-H15.1). The Commission also considered oral and written submissions from 24 intervenors (see Appendix A for a detailed list of interventions). The hearing was webcasted live via the CNSC Web site, and video archives are available for a three-month period following this decision. A *Summary Record of Proceedings, Including Reasons for Decision*, was issued on October 29, 2013.

2.0 DECISION

7. Based on its consideration of the matter, the Commission concludes that Cameco is qualified to carry on the activity that the renewed 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,

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, renews the Uranium Mine and Mill Operating Licence issued to Cameco Corporation for its Rabbit Lake Operation located in northern Saskatchewan. The renewed licence, UMOL-MINEMILL-RABBIT.00/2023, is valid from November 1, 2013 until October 31, 2023, unless suspended, amended, revoked or replaced.

8. The Commission includes in the licence the conditions as recommended by CNSC staff in CMD 13-H15.
9. With this decision, the Commission directs CNSC staff to provide annual reports on the performance of the Rabbit Lake Operation, as part of the CNSC's Annual Report on Nuclear Fuel Cycle Facilities in Canada. CNSC staff shall present these reports at

³ Statutory Orders and Regulations (SOR)/2000-211.

public proceedings of the Commission. A special focus on the environmental performance of the Rabbit Lake Operation with emphasis on releases to air, water and soil is expected to be part of the annual reports. Some of the proceedings may be held in Saskatchewan with public participation.

10. The Commission accepts the revised financial guarantee for decommissioning of the Rabbit Lake Operation site.
11. The Commission requests that Cameco prepare timeline estimates for completion of each of the major reclamation and decommissioning activities planned at the Rabbit Lake Operation site. Updates of the remediation and decommissioning plans and timelines will be presented as part of the aforementioned annual reports by CNSC staff on the performance of the Rabbit Lake Operation.
12. The Commission accepts CNSC staff's recommendation regarding the delegation of authority in the Licence Conditions Handbook (LCH). The Commission notes that CNSC staff can bring any matter to the Commission as applicable. The Commission directs CNSC staff to inform the Commission on an annual basis of any changes made to the LCH.

3.0 ISSUES AND COMMISSION FINDINGS

13. 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.
14. During the public hearing, the Commission heard from a number of intervenors about the economic benefits and disadvantages of uranium mining and also heard about possible alternatives to nuclear energy. While the Commission appreciates the viewpoints of intervenors on these issues, these issues were deemed to be outside the scope of subjects the Commission is able to consider under the NSCA in arriving at a decision. Therefore, these issues, while important to the local communities and individuals, are not discussed in these reasons for decision.
15. The Commission also heard different viewpoints regarding the process used for the development of collaborative agreements between Cameco and the neighbouring communities. These agreements outline the future business relationship between the parties. The Commission notes that it does not take any position on the process to develop an agreement or on the business interests of the parties. The Commission noted, however, that the agreements contain obligations with respect to communications between the parties which are important as they relate to Cameco ensuring that local communities are informed and consulted about current and future endeavours. These communications are discussed further in this Record of Proceedings.

16. In their intervention, Sierra Club alleged that the CNSC may be acting contrary to its statutory mandate in regard to Canada's international obligations. The Commission disagrees with this submission. The CNSC regulates the nuclear industry by licensing activities only where satisfied that the applicant "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 CNSC is not responsible for the implementation of all of the international obligations to which Canada has agreed. While Sierra Club invokes the *Convention on Long-Range Transboundary Air Pollution* and the 1998 Heavy Metals Protocol and Protocol on Persistent Organic Pollutants, it is the *Canadian Environmental Protection Act, 1999*⁴ (CEPA) that deals specifically with international air pollution. The CNSC does not administer the CEPA. In addition, the *Declaration on the Protection of the Arctic Environment*, the Arctic Environmental Protection Strategy, the Arctic Monitoring and Assessment Program or the Arctic Council, do not create binding obligations on Canada or the CNSC as it relates to this application for renewal.
17. In regard to the Espoo Convention, the obligation to conduct environmental assessments has been implemented under the *Canadian Environmental Assessment Act 2012* (CEAA 2012)⁵. Thus, it is the Environment Minister who determines which projects require an EA to be conducted by the CNSC, and this is done for projects that have the potential to cause adverse environmental effects. In the matter at hand, the Commission concluded that an EA was not required under the CEAA 2012 for the licensing actions that were considered by the Commission. More details on this topic are provided in section 3.15 of this document.

3.1 Management System

18. The Commission examined Cameco's Management System which covers the framework that establishes the processes and programs required to ensure that the Rabbit Lake Operation achieves its safety objectives and continuously monitors its performance against these objectives and fosters a healthy safety culture.
19. CNSC staff reported that previously identified deficiencies in Cameco's management system processes pertaining to design control, procurement, and corrective action on non-conformances were corrected during the previous licence period. CNSC staff currently rates this safety and control area (SCA) as satisfactory.

3.1.1 Quality Management

20. Cameco informed the Commission that the overall site management system is described in the Rabbit Lake Operation's Quality Management Program (QMP), which

⁴ S.C. 1999, c.33.

⁵ S.C. 2012, c.19, s.52 (hereinafter, "CEAA 2012")

addresses the requirements of Cameco's Safety, Health, Environment and Quality policy. The QMP supports Cameco's Mining Facility Licensing Manual that serves as the top-level site document and as a guide to the licensing documents, programs and supporting information needed to ensure compliance with all regulatory requirements. Cameco stated that the QMP was built on the "Plan-Do-Check-Act" model for continuous improvement outlined in the internationally recognized management standards ISO 9001 and ISO 14001.

21. Cameco reported that it has made significant improvements during the past licensing period in its Corrective Action Process, including the development of the Cameco Incident Reporting System. Cameco attributes a significant increase in the number of incidents being reported by personnel to those improvements. While the vast majority of those incidents are classified as low significance, Cameco considers the increased reporting to be indicative of a healthy and improving safety culture, and an important driver for continuous improvement in its operating performance. As part of the system for identifying and taking corrective action, Cameco management reviews the incident reports for corrective action on at least a weekly basis. Cameco also reviews lessons learned from events that have occurred at Cameco sites and at other nuclear and mining installations.
22. Another area where Cameco reported significant improvement in its management system at the Rabbit Lake Operation is in the area of contractor management. Cameco's Contractor Management Program is now aligned directly with Cameco's Safety Health and Environmental Quality Policy, specifically in the areas of hazards assessment, clarity of duties, training, and oversight. Cameco stated that, under this program, contractors are held to the same standards as its employees.
23. In addressing the improvements to its management system, Cameco also emphasized the importance it has placed on enhancing its systematic assessment and management of risk.
24. CNSC staff informed the Commission that, through a series of three focussed inspections in 2009 and 2010, it has verified Cameco's reported improvements to the previously deficient design control, procurement and corrective action processes. CNSC staff reported its close examination of various aspects of hazard identification and comprehensive risk assessment and controls. In this regard, CNSC staff reported that it observed Cameco's formalization of processes related to: work control, calibration control, non-conformance and corrective action management, roles and responsibilities, and process and design control. CNSC staff also observed appropriate alignment of the Significant Environmental Aspects to Cameco's formal risk assessment process.
25. CNSC staff confirmed that Cameco's management system conforms to the required approach as outlined in ISO 9001- Quality Management Systems and ISO 14001- Environmental Management Systems. This includes an appropriate level of Cameco

corporate oversight on all of its site-specific management systems, such as at the Rabbit Lake Operation.

3.1.2 Safety Culture

26. Cameco informed the Commission that it actively fosters and periodically conducts systematic assessments of safety culture at all of its operations. The most recent safety culture assessment at the Rabbit Lake Operation was completed in 2010. This was a follow-up to an assessment completed in 2005. The results indicated that the Rabbit Lake personnel have a strong willingness to improve and that safety issues are taken seriously. The findings have led to further improvements of safety programs, communications, formalized safety training, shared experience learning, incident reporting, and corrective action processes.
27. Some intervenors, including A. Coxworth, stated that culture and language issues could be interfering with communications when First Nations employees wish to address concerns at the site. It was suggested that some First Nations employees may be reluctant to raise issues for fear of their livelihood, or due to limited English language skills. It was suggested by some intervenors that having a community Elder on site as a form of “ombudsman” may improve communications between First Nation employees and Cameco management.
28. In response, Cameco explained that employees have ready access to a confidential hot line they can use to report concerns. Cameco also noted that concerns may also be raised with their supervisors, the site Occupational Health and Safety Committee representative, or with the company representative in their community to whom they may be better able to communicate in their native language. Cameco stated that the company has a policy of openness with its employees and that employees should not fear that raising issues would impact on their jobs. CNSC staff stated that, during its inspections, it takes the opportunity to speak with employees in confidence, and has not observed any reluctance of Cameco personnel or contractors to raise issues of concern. CNSC staff also stated that it visits the communities on a regular basis where open dialogue on facility performance is observed and encouraged.

3.1.3 Conclusion on Management System

29. Based on its consideration of the presented information, the Commission concludes that Cameco has appropriate organization and management structures in place and that the operating performance at the Rabbit Lake Operation provides a positive indication of Cameco’s ability to adequately manage the activities under the proposed licence. The Commission is also satisfied that Cameco is continuing to take the steps necessary to assess and foster a positive safety culture at its Rabbit Lake Operation.

3.2 Human Performance Management

30. Human performance management encompasses activities that enable effective human performance through the development and implementation of processes that ensure licensee staff is sufficient in number in all relevant job areas and have the necessary knowledge, skills, procedures and tools in place to safely carry out their duties. CNSC staff rated the human performance management SCA as satisfactory.

3.2.1 Training

31. Cameco informed the Commission that they have developed and implemented a standardized, robust and risk-informed training system to analyze and track requirements and then develop and deliver appropriate training to the employees. The Systematic Approach to Training (SAT) provides corporate oversight and support for training activities and development of appropriate courses. Cameco representatives stated that, through the implementation of the SAT, the Rabbit Lake Operation has focused on promoting a high level of compliance with critical safety training, and added that, during the latter part of the current licence period, their focus had moved to auditing, reviewing and improving course content and delivery methods for various training programs on site.
32. CNSC staff reported that they had conducted focused and general inspections to assess the effectiveness of training processes and verify the implementation of the training program at the Rabbit Lake Operation. CNSC staff indicated that Cameco has adequately addressed all of the findings identified during those inspections, including with respect to how Cameco systematically analyzes and addresses training needs that may arise from equipment and procedural changes, audit and inspection findings, operational experience and feedback from trainees. According to CNSC staff inspection findings, Cameco has also clarified the qualification process for mill operators at the Rabbit Lake Operation.
33. The Commission sought further information on the degree to which the residents of northern Saskatchewan are being trained for jobs at Cameco's operations. Cameco representatives responded that the percentage of employees from northern Saskatchewan was currently over 50%. Cameco further remarked that it has been steadily increasing its focus on training in all job categories, ranging from entry-level jobs to semi-skilled and skilled jobs. This reportedly includes promoting and supporting education opportunities at various levels, including grade 12, university, technical trades, and technician courses as offered by Northlands College in La Ronge.

3.2.2 Conclusion on Human Performance Management

34. Based on its consideration of the presented information, the Commission concludes that Cameco has appropriate programs in place and that current efforts related to

human performance management provide a positive indication of Cameco's ability to adequately carry out the activities under the proposed licence.

3.3 Operating Performance

35. Operating performance includes an overall review of the conduct of the licensed activities and the activities that enable effective performance as well as improvement plans and significant future activities at the Rabbit Lake Operation.
36. CNSC staff reviewed Cameco's operating performance regarding activities related to underground mining, milling, maintenance, remediation, reclamation and decommissioning activities and rated them as satisfactory.

3.3.1 Conduct of Licensed Activities

37. Cameco informed the Commission that it has, and continues to effectively operate the aforementioned Rabbit Lake facilities through its QMP. Cameco explained that the requisite procedures and change management processes are documented in the Mine Facility Licence Manual for the Rabbit Lake Operation, wherein the Environmental and Radiation Codes of Practice and related performance measures are set out.
38. With respect to operational performance at the Eagle Point mine, Cameco explained how it continuously assesses and mitigates risk associated with water inflow, radiation exposures, and ground stability, including with the assistance of third-party reviews. One outcome of this was a decision to construct a number of 12 metre exhaust vents or "snorkels" on the surface to prevent the mixing of the mine exhaust air with the fresh air intake. Cameco predicts that the existing accessible ore reserves at Eagle Point will be exhausted by 2017. The feasibility of extending the mine to access other known ore reserves is being evaluated, but is not part of the current licence application.
39. Cameco also highlighted its operational performance at the Rabbit Lake mill where processes and procedures are in place to ensure safety, radiation protection, environmental protection and product quality. Cameco drew particular attention to its effluent treatment operating performance improvements where significant reductions in molybdenum, selenium and uranium concentrations in the effluent discharged to the environment have been achieved. All parameters for effluent quality are well within applicable regulatory limits.
40. CNSC staff reported that, during the current licence period, it carried out regular compliance inspections on various aspects of the underground mining, milling and surface facilities and reclamation activities. As part of its compliance verification inspections, CNSC staff focussed in areas where weaknesses were previously observed, or where specific activities or projects were implemented. CNSC staff reported that Cameco has addressed all action notices and recommendations arising from those compliance inspections in a satisfactory and timely manner. Furthermore,

CNSC staff reported that Cameco has continued to provide the CNSC with timely reports on its operational performance.

41. The Commission asked Cameco where it looks to learn about and compare itself to best practices for uranium mining and milling operations, particularly in the area of safety and environment. Cameco responded that it conducts benchmarking, including through its own corrective action processes across all of its uranium mining and fuel operations, and through its involvement in organizations such as the World Nuclear Association.

3.3.2 Conclusion on Operating Performance

42. Based on the above information, the Commission concludes that the operating performance at the facility provides a positive indication of Cameco's ability to carry out the activities under the proposed licence.

3.4 Safety Analysis

43. Safety analysis is a systematic evaluation of the potential hazards associated with the conduct of a proposed activity or the operation of a facility and considers the effectiveness of preventive measures and strategies in reducing the effects of such hazards. It supports the overall safety case for the facility. CNSC staff reviewed this SCA and rated Cameco's performance as satisfactory.

3.4.1 Hazard Analysis

44. Cameco provided the Commission with details on how it assesses and manages risk at the core of its Rabbit Lake Operation, thereby assuring it remains well within the authorized licensing basis. Cameco described how, under the framework of its Corporate Risk Standard, and applying the guidance for systematic risk management and change control as part of its QMP, it is able to identify, assess and effectively mitigate various risks associated with occupational health and safety, radiation protection, environmental protection, waste management, fire protection, and emergency preparation and response. Using an enterprise risk management approach, Cameco explained how it uses various methods and tools, such as Business Screening Level Risk Assessment, Facility Change Control, Job Hazard Analysis, Fire Hazard Analysis, Environmental Management System, and internal auditing to identify, document, control and mitigate risk.
45. CNSC staff reported that it has verified that Cameco is effectively implementing site risk management and control processes at the Rabbit Lake Operation. As an example, CNSC staff referred to the water treatment process changes that Cameco recently and successfully implemented at the Rabbit Lake Operation in response to its updated

Environmental Risk Assessment. In this instance, Cameco significantly reduced the concentrations of molybdenum, selenium and uranium in treated effluents to mitigate the identified risk. CNSC staff also pointed to Cameco's systematic use of Job Hazard Analysis or assessment of non-routine or otherwise complex tasks as an example of a thorough and well developed part of safety analysis. CNSC staff confirmed that Cameco performed safety analyses on an ongoing basis by using job hazard assessments on all non-routine or complex jobs.

3.4.2 Conclusion on Safety Analysis

46. On the basis of the information presented, the Commission concludes that the systematic evaluation of the potential hazards and the preparedness for reducing the effects of such hazards is adequate for the operation of the facility and the activities under the proposed licence.

3.5 Physical Design

47. Physical design includes activities to design the systems, structures and components to meet and maintain their design basis. The design basis is the range of conditions and events taken into account in the design of structures, systems and components of a facility according to established criteria. The specific areas that comprise physical design at the Rabbit Lake Operation include the underground mine (Eagle Point), the mill, waste rock areas, Tailings Management Facilities, and effluent treatment. CNSC staff reviewed Cameco's performance and rated it as satisfactory.

3.5.1 Facility Design

48. Cameco informed the Commission that the physical designs of the facilities at the Rabbit Lake Operation site and their operation are documented in the Rabbit Lake Operation's Mine Facility Licensing Manual.
49. Cameco further informed the Commission about changes and improvements made at the Rabbit Lake Operation site during the current licence period to enhance environmental, health and safety performance. CNSC reported that it reviewed all upgrades and replacements to the physical design made during the current licence period and found them to be acceptable.
50. CNSC staff confirmed that Cameco has been doing, and continues to practice, design control and change control at the Rabbit Lake Operation that assure the proper review and approval of designs and design changes, including regulatory approvals where applicable, prior to their implementation. CNSC staff reported that it has verified through various inspections that Cameco has made important improvements to its change control process to make it more effective, and has an engineering design

process that is clear and well communicated. CNSC staff referred to Cameco's successful design and installation of new water treatment circuits to reduce the molybdenum and selenium concentrations in treated effluent as a good example of the effectiveness of the physical design process.

51. CNSC staff confirmed that the Rabbit Lake Operation had made all significant changes and improvements to the facility in accordance with conditions of their licence and Cameco's design and change management procedures.
52. The Commission asked about Cameco's designs for keeping waterfowl and other wildlife out of the tailing ponds. Cameco representatives responded that the company has a wildlife management program on site and is using multiple levels of control, including inspections, scare cannons, and other means to discourage the use of the site by birds and other wildlife.

3.5.2 Conclusion on Physical Design

53. On the basis of the information presented, the Commission concludes that the design of the Rabbit Lake Operation, and the processes for the control and evolution of the design, are adequate for the operation period included in the proposed licence.

3.6 Fitness for Service

54. Fitness for Service covers activities that are performed to ensure the systems, components and structures at the Rabbit Lake Operation continue to effectively fulfill their intended purpose. CNSC staff reviewed Cameco's performance and rated this SCA as satisfactory.

3.6.1 Maintenance

55. The licensee is required to manage maintenance activities to comply with regulatory requirements and accepted industry practice to minimize potential impacts to workers, the public and the environment. In addition, maintenance activities must provide assurance to achieve desired results, provide effective management of inventory of maintenance materials, and provide systematic management of maintenance change control.
56. Cameco informed the Commission about ongoing efforts at the Rabbit Lake Operation to improve the overall maintenance of the operation and supporting systems. Cameco explained that the Rabbit Lake Operation's Maintenance Program describes the testing, inspection, equipment calibration schedules (including automatic notifications to maintenance personnel), and work procedures required to ensure that systems, components, and structures at the site remain in good operating condition. Cameco

noted that experience gained at the Rabbit Lake Operation is contributing to the development of Cameco's corporate-wide operational reliability initiative that will incorporate best practices for work management, materials management and reliability engineering.

57. CNSC staff explained a number of rejuvenation projects that Cameco undertook during the previous licence period to improve process and equipment reliability. CNSC staff confirmed from its compliance verification activities that, in addition to on-demand repairs, maintenance at the Rabbit Lake Operation is being systematically scheduled, completed and documented with priorities being appropriately focused on safety-specific equipment. CNSC staff's random sampling of Cameco's maintenance records provided further evidence that the process is being well implemented and documented. No preventable equipment failures occurred during the licence period.

3.6.2 Conclusion on Fitness for Service

58. The Commission is satisfied with Cameco's programs for the inspection and life-cycle management of key safety systems. Based on the above information, the Commission concludes that the equipment as installed at the Rabbit Lake Operation is fit for service and continued to be properly maintained.

3.7 Radiation Protection

59. 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 of Cameco's Rabbit Lake Operation in the area of radiation protection. The Commission also considered the radiation program at the Rabbit Lake Operation to ensure that both radiation doses to persons and contamination are monitored, controlled, and kept as low as reasonably achievable (ALARA), with social and economic factors taken into consideration.
60. The Cameco representative informed the Commission that it has implemented a Radiation Protection Program (RPP) and a Radiation Code of Practice (RCOP) as required by the CNSC. Cameco informed the Commission that the RPP is implemented by dedicated radiation safety personnel with management oversight.
61. CNSC staff confirmed that Cameco has effective RPP and RCOP in place at its Rabbit Lake Operation that meets CNSC requirements. CNSC staff rated the radiation protection SCA as satisfactory.

3.7.1 Public Radiation Exposure

62. Cameco stated that, with the measures in place to reduce radiation exposures on the Rabbit Lake Operation site, doses to the public are well below the public dose limit and are indiscernible from the natural background radiation levels.
63. Some intervenors, including D. Dewar, C. Paul, and the Committee for Future Generations, provided anecdotal information that cancer rates in northern Saskatchewan communities are high and that rates are attributable to the uranium mining industry.
64. In response to the Commission's questioning of this assertion, the Public Health Officer indicated that the greatest risk to developing cancer does not come from uranium mining but from tobacco smoking and that lung cancer rates, in both men and women, are elevated in northern Saskatchewan compared to southern Saskatchewan. During discussion of background radiation, the Medical Health Officer noted that levels of background radiation vary from one locale to another and that background radiation levels in northern Saskatchewan are lower than in southern Saskatchewan because of the differences in soils and ground structure.
65. Some intervenors, including the Prince Albert Grand Council, English River First Nation, Sierra Club Canada and the Committee for Future Generations, expressed concern that radiation exposure to members of the public comes from the contamination of country foods including fish, wildlife and berries. Cameco representatives and CNSC staff indicated that studies conducted in support of the human health risk assessments have shown that country foods taken from or near the mine site have been shown to be free of contamination and that country foods are as safe as supermarket foods. The Medical Health Officer indicated that ongoing monitoring of country foods is important since these foods are vital to enabling the local populations to maintain a healthy diet and their lifestyle. He stated that there is no indication that country foods are contaminated or that they are causing any health problems. With respect to those studies, CNSC staff referred specifically to the work of the community-based Athabasca Working Group, the Province of Saskatchewan's Eastern Athabasca Regional Monitoring Program, and other northern dietary surveys (e.g., Hatchet Lake).
66. The Prince Albert Grand Council representative stated that he has periodically seen clouds of dust blowing off of the surface of the waste rock piles at the Rabbit Lake Operation, and expressed concern that this may be contaminating Wollaston Lake and the fish on which the community depends as part of its diet. In response to questioning by the Commission on this concern, Cameco referred to the extensive air and surface water quality monitoring that it carries out on, and in the vicinity of, the site. Cameco noted that it continues to complete its remediation and stabilization of the waste rock areas and other unused portions of the Rabbit Lake Operation site, any releases of dust or gases from these areas are not posing a risk to human health. CNSC staff confirmed

that the near-field environmental monitoring results at the Rabbit Lake Operation do not indicate any radiological risk to public health.

3.7.2 Worker Radiation Exposure

67. Cameco explained that the primary radiological hazards for workers at the site are from gamma radiation, radon gas and its progeny, and long-lived radioactive dust. Workers in the Eagle Point underground mine have a greater potential to be exposed to the radon progeny and radioactive dust, while greater attention to potential gamma radiation to workers is required at the mill operations. Cameco stated that it has a well-developed and mature radiation protection program at the Rabbit Lake Operation that is staffed and overseen by a dedicated team.
68. Cameco reported that the measured and calculated doses to workers at the Rabbit Lake Operation during the previous licence period have remained well below the regulatory limits. The average annual effective dose during the licence period was 1.2 mSv, and the maximum single dose, occurring in 2012, was 14.4 mSv. The effective dose limit for a nuclear energy worker is 50 mSv per year and 100 mSv over a five-year period.
69. With reference to Cameco's own Action Levels (which are set well below regulatory limits and serve to provide early indications of issues that may require attention to assure worker exposures are maintained ALARA), Cameco described five incidents during the five-year licence period which led to exceeding the Action Levels nine times. Cameco described how it responded in each instance to identify the cause and implement appropriate corrective action to prevent recurrence. CNSC staff added that none of the resulting exposures posed a health risk to the workers involved and that CNSC staff was fully satisfied in the manner with which Cameco investigated the events and took corrective action.
70. CNSC staff informed the Commission that it reviewed Cameco's radiation protection program and how it is being implemented at the Rabbit Lake Operation. CNSC staff concluded that Cameco has a consistent and effective radiation protection program that is continuing to improve. CNSC staff reported that, during the previous licence period, it has observed specific improvements in the areas of Long-Lived Radioactive Dust (LLRD) monitoring, respiratory protection, zone control (to prevent contamination spreading between work areas), mine fresh air intake structures, and action planning for minimizing workers future doses.
71. In response to the Commission's questioning on possible patterns and trends in the annual radiation exposure data presented, Cameco explained that it is not appropriate to extrapolate and draw trending conclusions from average effective and maximum dose data. Cameco stated that the differences from one year to another, or during different times of the year, are largely driven by the normal fluctuations in the type and intensity of mining and milling activities occurring at a dynamic and evolving site such as the Rabbit Lake Operation. Any apparent trends in the data would need to be examined in

this context. Cameco noted that it is more appropriate to judge performance by comparing the individual data to the regulatory limits and Action Levels. CNSC staff supported this interpretation of the data.

72. C. Paul, in her intervention, argued that the notion of “reasonably achievable” as the basis of the ALARA principle is not an appropriate objective for reducing radiation exposures; rather the intervenor argued that radiation doses should be “as low as possible” and that all available means, irrespective of cost, should be made to achieve this. In response, CNSC staff indicated that ALARA is the universally accepted principle in the field of Radiation Protection to ensure that radiation doses are kept very low, and well below that which may cause harm to human health. Application of the ALARA principle has been shown to be effective at sites regulated by the CNSC.

3.7.3 Conclusion on Radiation Protection

73. The Commission is satisfied that Cameco has made, and will continue to make, adequate provision to protect workers and the public from the effects of radiation from the Rabbit Lake Operation.

3.8 Conventional Health and Safety

74. Conventional Health and Safety covers the implementation of a program to manage workplace safety hazards. This program is mandatory for all employers and employees in order to reduce the risks associated with conventional (non-radiological) hazards in the workplace. This program includes compliance with Part II of the *Canada Labour Code*⁶ and conventional safety training.
75. Cameco described its Occupational Health and Safety Program (OHSP) as it exists corporately and at the Rabbit Lake Operation. Modeled on the international Occupational Health and Safety Advisory Services OHSAS 18001 standard, Cameco explained that its OHSP is founded on:
- a systematic identification of hazards;
 - the development and provision of safety procedures, equipment and training; and
 - the fostering of a positive and continuously learning safety culture.

Cameco described workplace safety as one of its highest values and, while it maintains a dedicated staff for this, it ensures that safety is a shared responsibility of every employee and contractor. Cameco has also undertaken, at a corporate level, to link its Corrective Action Process and Incident Reporting System (CIRS), thereby facilitating the analysis of trends and sharing of experience across all of its operations. CNSC staff

⁶ R.S.C., 1985, c. L-2

added that the CIRS includes both accident and near-miss data, and that reports trigger several levels of review. CNSC staff stated that Cameco's reporting culture had improved, and concluded that the CIRS is an effective tool to facilitate and track actual and potential accident investigations and assign corrective actions.

76. Cameco reviewed its safety performance in terms of the numbers and rates of Lost Time Incidents (LTIs) during the previous licence period. Cameco noted that the LTIs remain very low despite recent significant increases in the amount and complexity of work taking place at the Rabbit Lake Operation, such as for the upgrading of the acid plant. The LTI statistics are also generally well below the averages recorded for the Saskatchewan mining industry overall. Cameco added that its safety record at the Rabbit Lake Operation has been recognized by the Canadian Institute of Mining, Metallurgy and Petroleum, and that the site has been awarded the John T. Ryan Safety award for the past 3 years.
77. In response to two serious injuries at the Rabbit Lake Operation in 2011, where workers sustained injuries to their lower limbs in two separate accidents, Cameco reported that it promptly took a number of corrective actions. Those actions involved upgrading of requirements for hoisting equipment, improved hoisting procedures, improved worker training and orientation, changes to safety communication protocols, and modified work area design.
78. CNSC staff, working in close collaboration with the Saskatchewan Ministry of Labour Relation and Workplace Safety, attested to the quality and performance of Cameco's OHSP.
79. CNSC staff reported that previously identified weaknesses in Cameco's oversight of contractor safety at the Rabbit Lake Operation have been addressed. Safety is now a consistent focus for both contractors and employees. CNSC staff further commented that Cameco is investigating and correcting all safety-related regulatory non-conformances and incidents to the full satisfaction of both the CNSC and the Saskatchewan Ministry of Labour Relation and Workplace Safety. In addition to the CNSC site inspections, the provincial safety inspectors regularly conduct their own independent workplace safety inspections.
80. CNSC staff stated that it has reviewed the investigation reports for all LTIs from 2008 to 2012, and verified that corrective actions have been implemented in conjunction with Saskatchewan Ministry of Labour Relation and Workplace Safety. The LTIs were discussed and reported to the Commission as part of the CNSC Staff Report on the Performance of Canadian Uranium Fuel Cycle and Processing Facilities. CNSC staff rated Cameco's performance in this SCA as satisfactory.
81. The Commission questioned Cameco if it looks to other organizations to better understand and adopt industry best practices for assuring worker health and safety. In response, Cameco stated that it looks for, and shares information on safety practices across all of its own mining and other fuel-cycle operations, as well as through its

involvement with organizations such as the Saskatchewan Mining Association, the Mining Association of Canada, and the World Nuclear Association.

82. In response to questions from the Commission, Mr. J. Little, an intervenor who is employed at the Rabbit Lake Operation, opined that there is a strong and positive safety culture at the Rabbit Lake camp and that Cameco is living its core values of safety and environmental awareness and protection.
83. The Commission is of the opinion that Cameco has been protecting, and will continue to protect, the health and safety of workers at the Rabbit Lake Operation.

3.9 Environmental Protection

84. Environmental protection covers Cameco's programs to identify, control and monitor all releases of radioactive and hazardous substances and to minimize the effects on the environment which may result from the licensed activities. It includes effluent and emissions control, environmental monitoring and estimated doses to the public. CNSC staff rated Cameco's performance in this SCA as satisfactory.
85. Cameco informed the Commission that the environmental protection at Rabbit Lake Operation is assured by the site specific ISO 14001-certified Environmental Management System (EMS) that is aligned to the requirements of Cameco's Safety Health and Environmental Quality (SHEQ) policy. Cameco reported that all licensed activities at the Rabbit Lake Operation are systematically identified, controlled and monitored by the Environmental Protection Program (EPP) and the Environmental Code of Practice (ECOP) using a specified set of processes and procedures.
86. CNSC confirmed that Cameco's EMS fully conforms to the Canadian Standards Association International Standard CAN/CSA ISO 14001 and meets CNSC staff's expectations.

3.9.1 Effluent and Emissions Control

87. Cameco explained that, as part of its EMS, it has established performance objectives for all areas of potential environmental impact that are designed to drive continuous improvements in environmental performance. Most notably, Cameco described significant improvements it made during the previous licence period in the quality and quantity of liquid effluent released from the Rabbit Lake Operation. Cameco reported that it has reduced the concentrations of uranium, molybdenum and selenium in its effluent discharge by 63%, 87% and 30% respectively. Currently, the effluent quality meets all regulatory limits for contaminant concentrations (all parameters) and toxicity, and remains below the Action Levels set out in Cameco's ECP.

88. Another important improvement in environmental performance at the Rabbit Lake Operation reported by Cameco was with respect to the upgrades completed at the acid plant. In addition to a safer and more reliable operation, the resulting reduction in SO₂ emissions was in the order of 65%.
89. CNSC staff confirmed the aforementioned performance of the water treatment system at the Rabbit Lake Operation, including the marked reductions in the concentrations of uranium, molybdenum and selenium in effluent achieved during the previous licence period. Effluent quality and toxicity currently meets all regulatory requirements and represents a level of performance superior to the metal mining sector in general. CNSC staff opined that the near complete additional improvements to the mill will likely further improve overall environmental performance at the Rabbit Lake Operation with respect to emissions and effluents.
90. Some intervenors (Saskatchewan Environmental Society, S. Lawrence and Sierra Club Canada) expressed concerns about the past and continuing contaminant discharge loadings (particularly with respect to uranium) to the Horseshoe Creek system, through to Hidden Bay of Wollaston Lake. These intervenors are concerned that the inventories of release contaminants and their long-term effects may not be well understood. In response to the Commission's questions on this topic, Cameco stated that it has been, and continues to be, engaged in extensive sampling and the conduct of detailed, state-of-the-art environmental risk assessments in this location. Cameco acknowledged that the historic contaminant loadings are present in the downstream sediments, but that they have been progressively covered by clean sediments and the ecological risk remains low. CNSC staff stated that it is closely monitoring and reviewing the above-noted risk assessments. CNSC staff stated that it currently anticipates that the contaminated sediments in the upper reaches of the Horseshoe Creek system will ultimately require some form of active remediation and decommissioning once the input flow of water is reduced and the material would otherwise become subject to exposure and oxidation. It was noted that such remediation is possible, but that the specific requirements will follow from the conclusions of the Ecological Risk Assessment.
91. On a similar topic, the Saskatchewan Environmental Society and Sierra Club expressed serious concerns about contamination in the adjacent Link Lake drainage system to Pow Bay. In response to the Commission's questions on this issue, Cameco acknowledged that the Link Lake system was significantly contaminated during historic operations at the Rabbit Lake Operation. Cameco explained, however, that effluent is no longer discharged through that drainage system and that detailed assessments have confirmed that the contaminated materials are isolated, stable and not causing adverse effects in Pow Bay of Wollaston Lake. Furthermore, Cameco acknowledged that the Link Lake system will require remediation before, or as part of, the final decommissioning of the Rabbit Lake site. CNSC staff confirmed that the situation in the Link Lake system has been extensively studied and that CNSC specialists concur with Cameco's conclusion that the system is currently isolated

pending final remediation, and that it is not currently causing significant adverse downstream effects.

92. In its intervention, Sierra Club Canada stated that regulatory and/or legal limits do not exist for a number of contaminants. CNSC confirmed that this is the case for a limited number of contaminants. In these instances, CNSC staff implements the precautionary principle and releases are controlled and monitored through the use of Action Levels or regulatory levels established in CNSC requirements. CNSC staff further noted that it is involved in initiatives to expand the set of parameters for which limits are established in the federal *Metal Mining Effluent Regulations*⁷ (MMER) (including for selenium for example).
93. Sierra Club Canada discussed at length the release of mercury and cadmium to the environment and whether or not emissions are measured and causing harm. Cameco representatives stated that mercury and cadmium are not associated with their mining or milling process, and indicated that the concentrations were measured and have been found to be generally at, or below detectable levels and therefore do not pose a risk to the environment. CNSC staff confirmed that mercury and cadmium releases are not relevant to the Rabbit Lake Operation.
94. In response to the Commission's questions on the expected long-term performance of the drainage from remediated waste rock areas, Cameco responded that the objective is to cap and largely isolate the waste such that rain and snow melt would runoff without interacting with the underlying waste. As such, Cameco expects that Saskatchewan Surface Water Quality Objectives (SSWQOs) would be met for the runoff and in the surrounding surface waters. Cameco qualified this statement by stating that the SSWQOs represent reference criteria from which site specific environmental risk assessments, and the need for any further remediation, may be determined. CNSC staff concurred with this interpretation of the SSWQOs and noted that, depending on natural site conditions, it is not uncommon for natural surface water quality to exceed the SSWQOs.
95. In its intervention, the Saskatchewan Environmental Society expressed the view that Cameco may not be giving sufficient consideration to the use of "reactive barriers" to control the release of contaminated water from the Rabbit Lake Operation. A reactive barrier involves the placement of special contaminant-adsorbing materials in a trench that is positioned across the path of a shallow contaminated ground water flow. In response to the Commission's questions on this technology, Cameco indicated its familiarity with its use and acknowledged that they can be highly effective in certain situations. Cameco explained that reactive barriers have not been considered as a long-term decommissioning option at the Rabbit Lake Operation primarily because they have a limited life and, as such, require regular maintenance and periodic rehabilitation. Cameco further noted that areas of ground and sediment contamination at the Rabbit Lake Operation, such as in the Link Lake and Horseshoe drainages, are under study in anticipation of permanent remediation. CNSC staff also acknowledged

⁷ SOR/2002-222

its understanding of reactive barrier technology and concurred that a more permanent remediation strategy is preferred where available.

3.9.2 Environmental Incidents

96. With respect to environmental spills during the past licence period, Cameco reported that 19 small spills occurred, all of which were promptly detected, cleaned up and corrective actions were taken to prevent recurrence. No residual environmental impacts resulted.
97. Cameco further described preventative maintenance and repairs that it made to the water handling system pipeline and mill tanks to reduce the risk of future spills to the environment.
98. CNSC staff, in close collaboration with Saskatchewan Environment, expressed satisfaction with the manner in which Cameco promptly identified, reported and responded to spills during the licence period.

3.9.3 Environmental Monitoring

99. Cameco explained that, pursuant to requirements of the *Metal Mining Effluent Regulations*⁸, it conducts end-point Environmental Effects Monitoring (EEM). As discussed above, a result has been the identification of end-point effects in Horseshoe Pond, immediately downstream of the point of effluent discharge. An investigation to gain a comprehensive understanding of the impact is near completion (2014) and this will be used to develop any required remediation strategy. As also discussed above, Cameco reported that the identified impacts are confined to the near-field and do not extend to Wollaston Lake.
100. Some intervenors, including The Kineepik Métis Local Inc. #9 and the Prince Albert Grand Council, expressed their intention to perform their own environmental monitoring. The Saskatchewan Environmental Society, with reference to recommendations arising from previous federal environmental assessments, argued for a higher degree of independent environmental monitoring that involves a multitude of regulatory, local community, scientific and not-for-profit parties. In response, the Commission asked who else, other than the licensee, monitors the environment and how are the results consolidated and made public. CNSC staff responded that, in addition to its regulatory activities, the Province of Saskatchewan independently conducts monitoring, and that the Northern Mines Monitoring Secretariat involves the local community members in monitoring and sample collection. CNSC staff and the Saskatchewan Ministry of Environment also referred to the Eastern Athabasca Regional Monitoring Program which directly involves local communities. Information from this program, including technical reports, interpretative reports and raw data, is posted on the program public web site. The Environmental Quality Committee was established by the Province specifically to enable direct community engagement.

⁸ SOR/2002-222

CNSC staff stated that it is considering developing its own monitoring program for uranium mines and mills as part of an independent environmental monitoring program for the full nuclear fuel cycle. In response to further questioning by the Commission, the representative for the Saskatchewan Ministry of Environment expressed a willingness to explore further opportunities for exchange with groups such as the Saskatchewan Environmental Society and academia.

101. Some intervenors, including S. Lawrence, questioned the adequacy of methods applied for environmental monitoring. In response, Cameco described the ecological risk assessment and human health risk assessments that are undertaken in relation to Cameco's operations and stated that the company conducts extensive environmental monitoring programs that include the use of sophisticated scientific and site-specific models. The analytical models are regularly reviewed and updated. CNSC staff stated that it requires that licensees have an integrated program of environmental protection that manages all elements of their monitoring programs. The CNSC, in addition to requiring licensees to develop and maintain Environmental Management Systems that conform to the ISO 14001 international standard, establishes specific requirements for assessing and measuring potential human health and ecological risk through analytical modelling and monitoring. CNSC staff expressed its satisfaction with Cameco's environmental monitoring and risk assessment methods.
102. The Commission received further information from the Saskatchewan Ministry of Environment (MoE) on the environmental monitoring that it is carrying out under the direction of the province. The MoE representative informed the Commission about Saskatchewan's Boreal Watershed Management Strategy and the Eastern Athabasca Regional Monitoring Program. The MoE representative presented the background and explained the purpose, strategy and different ecological aspects of the project. The Commission sought more information regarding sampling distribution of country food samples and whether the results represent average values for the entire region, or if they were more local and community-specific. The MoE representative responded that the province is working with selective communities in the area; however, as the project progresses, more and more communities are involved to provide a larger information basis. The MoE representative added that the samples that were collected so far in the various locations in the reference and exposure sites were safe to eat. CNSC staff stated that some of the exposure sites were in the proximity of uranium mines.
103. Responding to the Commission's question regarding the province's interaction with local communities on its environmental monitoring, the MoE representative noted that the results are presented to the interested communities, and that the communities have shown a high level of acceptance. The program, now in its third year, is expected to continue.
104. The Commission asked if the Eastern Athabasca Regional Monitoring Program is independent from the industry and CNSC. The MoE representative responded that the sampling program is independently reviewed by scientists and by universities, and that

all of the data is fully credible. The MoE representative added that the results are publicly available and posted on the project's public web site.

105. The Commission was further assured by the MoE representative that Cameco has and continues to cooperate with the provincial environmental monitoring programs in an open and transparent manner, and that the monitoring results are not currently showing significant environmental effects from Cameco's uranium mining and milling operations.
106. In its intervention, Sierra Club Canada expressed its objection to any use of the 1 mSv human dose limit as a surrogate for environmental protection. In response to the Commission's examination of this statement, CNSC staff explained that, in fact, the 1 mSv human limit is not used for this purpose. CNSC staff explained that much is now known in the field of radioecology and the effects of radiation exposures to non-human biota. That knowledge is applied in the conduct of environmental risk assessments to establish conservative effect thresholds for the protection on non-human populations. CNSC staff actively participates internationally in advancing the science in this area. CNSC staff assured the Commission that the radio-ecological dose modeling at the Rabbit Lake Operation shows that, while some near-field locations will require remediation, the site is protective of the environment.
107. As discussed above in the context of the Physical Design of the Rabbit Lake Operation (sec. 3.5), Cameco explained, in response to the Commission's questions, how it also monitors and controls the potential direct exposure of wildlife and, in particular, waterfowl to potentially contaminated areas. Cameco explained, for example, how it monitors the use by waterfowl of the tailings pond and takes various actions, such as hazing and scare cannons, to effectively discourage the birds from using these areas.

3.9.4 Conclusion on Environmental Protection

108. Based on the above information, the Commission is satisfied that, given the mitigation measures in place, Cameco will adequately protect the environment at the Rabbit Lake Operation.

3.10 Emergency Management and Fire Protection

109. Emergency management and fire protection cover Cameco's provisions for preparedness and response capabilities which exist for emergencies and for non-routine conditions at the Rabbit Lake Operation. This includes nuclear emergency management, conventional emergency response, and fire protection and response. After reviewing Cameco's performance related to the SCA, CNSC staff rated it as satisfactory.

3.10.1 Emergency Management

110. Cameco informed the Commission that the emergency response capability at the Rabbit Lake Operation is guided by its Emergency Preparedness and Response Program (EPRP) which define the actions, organizations, roles and responsibilities for potential emergency situations, and covers all major risks at the Rabbit Lake Operation. Cameco noted that its emergency programs must, and do, comply fully with the regulatory requirements of both the CNSC and the Saskatchewan Ministry of Labour Relation and Workplace Safety.
111. Cameco reported that it completed 37 emergency drills and exercises of various types during the previous licence period, and that its emergency organization responded to 8 actual events during the same period involving responses to local forest fires and personnel injuries.
112. CNSC staff indicated that it continues to monitor the performance of Cameco's emergency response organization through general and focussed inspections and reviews, including monitoring of the findings arising from the above-mentioned drills and exercises. CNSC staff expressed its satisfaction that Cameco is continuing to take appropriate and timely corrective actions to all findings.
113. Cameco also informed the Commission that, in response to the CNSC's request to review their emergency response measures following the Fukushima event, it had engaged a third-party expert to review the company's emergency response measures. The review did not find significant health and safety or environmental risks, and no significant gaps were identified in the design of facilities with respect to their ability to withstand natural disasters. Cameco also conducted exercises to test response to multiple natural events, such as a forest fire and power outage happening simultaneously. CNSC staff reported that all action items resulting from the licensee's review have been closed.

3.10.2 Fire Protection

114. Cameco provided information on recent changes and upgrades to its fire protection equipment infrastructure and programs, including training of its Emergency Response Team, that have helped improve the Rabbit Lake Operation's emergency response capabilities. Cameco noted that its fire response program must, and do, comply fully with the *National Fire Code of Canada, 2005* and other CNSC regulatory requirements.
115. CNSC staff reported that all of the deficiencies in Cameco's Fire Protection Program that were identified during its previous assessments and inspections have been adequately addressed by Cameco through the implementation of a CNSC-approved Action Plan.

3.10.3 Conclusion on Emergency Management and Fire Protection

116. Based on the above information, the Commission concludes that Cameco's Emergency Preparedness and Response Program and Fire Protection Program at the Rabbit Lake Operation are adequate to protect the health and safety of persons and the environment during emergencies.

3.11 Waste Management

117. Waste management covers the licensee's site-wide waste management program. CNSC staff evaluated Cameco's performance with regards to waste minimization, segregation, characterization, and storage. CNSC staff rated Cameco's performance in this SCA at the Rabbit Lake Operation as satisfactory.
118. Cameco informed the Commission that facilities for the collection, processing and storage of wastes produced at the Rabbit Lake Operation are managed through its Waste Management Program, which includes a Site-Wide Remediation Plan approved by the CNSC in 2009.
119. Cameco described how it collects and treats contaminated water from the mill, Eagle Point mine, Rabbit Lake In-pit Tailings Management Facility, and mineralized waste rock areas for reuse or release to the environment in accordance with all regulatory requirements for effluent quality and quantity. As noted earlier in subsection 3.9.1 (Effluent and Emissions Control), CNSC staff confirmed Cameco's acceptable performance in waste water treatment at the Rabbit Lake Operation.
120. Cameco also described its management of various past and current solid waste streams, including mill tailings, mineralized and clean waste rock, contaminated industrial wastes, and domestic wastes from the camp operations. The waste disposal sites at the Rabbit Lake Operation include the Rabbit Lake In-pit Tailings Management Facility (RLITMF), the Above Ground Tailings Management Facility (AGTMF), the A, D and B-Zone waste rock areas, and the camp domestic landfill site. The RLITMF remains operational, receiving tailings from the continued mining of ore at Eagle Point mine. The AGTMF is partially remediated and will continue to be used for the disposal of non-recyclable radioactively contaminated and other hazardous waste. The waste rock piles are in various stages of final remediation and waste rock from current mining at Eagle Point is being processed and used as backfill in the underground mined-out areas. Cameco further reported on how its 4Rs waste plan (reduce, reuse, recycle and recover) has successfully reduced the amount of waste requiring final disposal in its domestic and contaminated waste landfills.
121. Progressive and final site remediation is part of the Waste Management Program. In this regard, Cameco described the key components of its Site-Wide Remediation Plan that was approved by CNSC in 2009 and is updated annually. In that plan, Cameco

addresses all inactive areas of the site, including all former mined pits, the waste rock and closed tailings management areas, and associated pads, access roads, etc.

122. An area receiving special attention in the Site-Wide Remediation Plan for the Rabbit Lake Operation is in the previously contaminated Link Lake drainage system. Material previously released to this system is isolated in the downstream soils and sediments. Detailed investigations, studies and field trials are being carried out to determine the optimized remediation plan for this site. The plan will be subject to full regulatory review and approval prior to implementation. CNSC staff noted that it is closely following Cameco's work in this area and confirmed that it is not causing significant downstream impacts.
123. Another remediation challenge at the Rabbit Lake Operation described by Cameco relates to the need to eventually thaw frozen tailings buried within the RLITMF. During past operations, tailings that were deposited above water during winter froze before being covered with subsequent layers of tailings. This has hampered the consolidation of the tailings, thereby limiting the capacity of the facility and potentially complicating final decommissioning and remediation. After completing experiments with various thawing methods, Cameco reported that it will complete the thawing process during final decommissioning and after the TMF has permanently ceased active operation. CNSC staff confirmed that, in the meantime, the existence of the frozen tailings does not pose a significant safety or environmental risk.
124. CNSC staff reported that it had periodically inspected waste management at the Rabbit Lake site and that all related action notices have been satisfactorily closed.
125. Based on the above information and considerations, the Commission is satisfied that Cameco is safely managing waste at the Rabbit Lake Operations.

3.12 Security

126. Security covers the programs required to implement and support the security requirements stipulated in the relevant regulations and the licence. This includes compliance with the applicable provisions of the *General Nuclear Safety and Control Regulations*⁹ and the *Nuclear Security Regulations*¹⁰.
127. Cameco stated that the Rabbit Lake Security Program has the controls necessary to prevent the loss or theft of nuclear materials, and to prevent any interference with the safe operation of the site. During the current licence term, there were no changes made to the Security Program and no reportable incidents with respect to security-related issues.
128. CNSC staff reviewed Cameco's performance regarding this SCA and rated it as satisfactory.

⁹ SOR/2000-202

¹⁰ SOR/2000-209

129. The Commission concludes that Cameco has made adequate provisions for ensuring the physical security of the facility, and is of the opinion that Cameco will continue to make adequate provisions during the proposed licence period.

3.13 Safeguards and Non-Proliferation

130. The CNSC's regulatory mandate includes ensuring conformity with measures required to implement Canada's international obligations under the Treaty on the Non-Proliferation of Nuclear Weapons. Pursuant to the Treaty, Canada has entered into safeguards agreements with the International Atomic Energy Agency (IAEA). The objective of these agreements is for the IAEA to provide credible assurance on an annual basis to Canada and to the international community that all declared nuclear material is in peaceful, non-explosive uses and that there is no undeclared nuclear material or activities in this country.
131. Cameco stated that the Rabbit Lake Operation makes adequate provision for the maintenance of national security and implements international obligations to which Canada has agreed. Cameco provides annual production reports to CNSC, in accordance with international requirements.
132. Cameco also stated that there were no requests by IAEA inspectors to inspect the Rabbit Lake Operation during the current licence term.
133. CNSC staff confirmed that Cameco submits annual information on its operations to the CNSC, which forms part of Canada's annual declaration to the IAEA regarding the Canadian nuclear fuel cycle. CNSC staff rated this SCA as satisfactory.
134. In its intervention, the Saskatchewan Environmental Society expressed concerns about Cameco's possible sales of uranium to India, stating that India refuses to sign the Nuclear Non-Proliferation Treaty. The Commission notes that a Canada-India Nuclear Cooperation Agreement came into force in September 2013, which allows Canadian companies to export nuclear items for peaceful uses, in accordance with Canada's nuclear non-proliferation policy. The CNSC will be responsible for the implementation of the Agreement, ensuring that Canadian exports only go to facilities in India under International Atomic Energy Agency safeguards.
135. Based on the above 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 Rabbit Lake Operation that are necessary for maintaining national security and measures necessary for implementing international agreements to which Canada has agreed.

3.14 Packaging and Transport

136. Packaging and Transport covers the safe packaging and transport of nuclear substances and radiation devices to and from the Rabbit Lake Operation. The licensee must adhere to the *Packaging and Transport of Nuclear Substances Regulations*¹¹ and Transport Canada's *Transportation of Dangerous Goods Regulations*¹² for all shipments leaving the facility. CNSC staff assessed Cameco's performance in this SCA and concluded that Cameco has in place a program for the safe packaging and transport of radioactive materials. CNSC staff rated it as satisfactory.
137. During the review period, CNSC staff conducted compliance inspections of the Rabbit Lake Operation and found that the transport and packaging program and associated procedures complied with regulatory requirements of both the CNSC and Transport Canada. Minor events and incidents during the past licence period were adequately reported and addressed by Cameco. CNSC staff was satisfied with corrective actions taken by Cameco. None of these incidents resulted in health or radiological effects, or releases to the environment.
138. Based on the above information, the Commission is satisfied that Cameco is meeting regulatory requirements regarding packaging and transport.

3.15 Application of the *Canadian Environmental Assessment Act*

139. CNSC staff informed the Commission that the activities considered for the Rabbit Lake Operation licence renewal were the subject of a Joint Federal/Provincial Panel environmental assessment that was completed in the 1990s, and that other environmental assessments have been completed as needed.
140. The Commission notes that the NSCA provides a strong regulatory framework for environmental protection. Whether an environmental assessment under CEAA 2012 is required or not, the CNSC regulatory system ensures that adequate measures are in place to protect the environment and human health in accordance with the NSCA and its Regulations.

3.16 Aboriginal Engagement and Public Information Program

3.16.1 Aboriginal Engagement

141. The common law Duty to Consult with Aboriginal communities and organizations applies when the Crown contemplates actions that may adversely affect established or potential Aboriginal or treaty rights.

¹¹ SOR/2000-208

¹² SOR/2001-286

142. Cameco informed the Commission that, as the majority of the residents of Saskatchewan's North are of Aboriginal origin; its public engagement activities are largely aimed at providing opportunities to effectively engage with Aboriginal communities in northern Saskatchewan's Athabasca Basin. For the Rabbit Lake Operation, this focuses on the Hatchet Lake Denesuline First Nation and the adjoining community of Wollaston Lake, the Black Lake Denesuline First Nation, the Fond du Lac Denesuline First Nation and the communities of Stony Rapids, Uranium City and Camsell Portage. Cameco further reported that it maintains a Northern Affairs office in La Ronge and three satellite offices in the communities of Wollaston, Black Lake and Fond du Lac. The community liaison officers in those locations serve as Cameco's primary point of contact in the community, helping the community members to access information about Cameco operations, and providing follow-up to questions that community members might have about Cameco's operations.

143. CNSC staff informed the Commission that, during the current licence period, it also continued to engage with Aboriginal groups and communities throughout northern Saskatchewan, and participated in annual meetings with the Fond du Lac Denesuline, Black Lake Denesuline, and Hatchet Lake Denesuline First Nations and the communities of Stony Rapids and Wollaston. These meetings provided an opportunity for the communities to receive updates regarding operations from the licensee and to ask questions to CNSC staff. CNSC staff reported that it also met in June 2013 with the Hatchet Lake First Nation, Fond du Lac First Nation and Black Lake First Nation to discuss the upcoming CNSC licensing hearings in October 2013. Notices of the public hearings were also sent to all First Nation and Métis groups, organization and communities with a potential interest in the CNSC hearings. CNSC staff participated in the Northern Saskatchewan Trappers convention in Prince Albert and the Athabasca Sector Meeting held in Black Lake. CNSC staff also regularly participated in Cameco's site tours, and meetings with the Northern Saskatchewan Environmental Quality Committee (NS-EQC). At these meetings, CNSC staff shared information on topics such as the licensing process, environmental protection and radiation protection using interactive presentations and demonstrations.

144. Intervenors, including Kineepik Métis Local Inc. #9, Prince Albert Grand Council, and the Lac La Ronge Indian Band, stated that First Nations should not merely be consulted but should be part of the decision-making process regarding mine development in the north. It was noted by those intervenors that First Nations people are not just interested parties, but that they have rights to the land and that the mining companies, the CNSC and governments have an obligation to engage them fully and must enable them to have a voice in decisions affecting them and their land. Cameco representatives indicated that, through agreements reached with First Nations communities, there is a partnership that involves consultation in addition to communication and providing information. Cameco representatives indicated that they hope to have agreements in place with all communities.

3.16.2 Public Information

145. A public information program is a regulatory requirement for licence applicants and licensed operators of a uranium mine. Paragraph 3(c)(i) of the *Uranium Mines and Mills Regulations*¹³ requires that licence applications include “the proposed program to inform persons living in the vicinity of the mine or mill of the general nature and characteristics of the anticipated effects of the activity to be licensed on the environment and the health and safety of persons.”
146. The CNSC document RD/GD-99.3, *Public Information and Disclosure*, provides regulatory direction and guidance to licensees on the development and implementation of their public information and disclosure programs. Cameco further informed the Commission that its Public Disclosure Protocol is consistent with RD/GD 99.3. The protocol is posted on the Cameco Northern Saskatchewan website.
147. Cameco informed the Commission that it has in place a Public Information Program (PIP) with the objective to engage community stakeholders and keep target audiences informed about activities and planned activities at the operation. Cameco’s facilities and target communities for the PIP are identified above under Aboriginal Engagement.
148. Cameco reported that it presented more than 35 updates on the site operations and projects in the Athabasca Basin communities during the current licence period (since 2008). Updates were also provided at the meetings of the Athabasca Working Group and Northern Saskatchewan Environmental Quality meetings, including one at the Rabbit Lake Operation site each year. The Cameco PIP also includes various school tours and visits, maintenance of its northern Saskatchewan website, media interviews, and adherence to a public disclosure protocol.
149. The updates are posted on Cameco’s northern Saskatchewan website, presented through paid advertising and print articles in publications distributed in Saskatchewan’s North, and distributed as part of face-to-face engagement in the North. Cameco stated that it measures the effectiveness of its PIPs partly through polling and surveys of public perceptions of the uranium mining industry twice a year across Saskatchewan. The most recent results from May 2013 indicated that approximately 80% of residents in the province continue to support the uranium mining industry.
150. In its intervention, the Saskatchewan Mining Association (SMA) confirmed the results of this survey. The Commission asked for more information on the survey. The SMA representative responded that the survey had been conducted by an independent expert in public polling. Cameco representatives noted that the survey had encompassed large sample of population in north Saskatchewan. Cameco representatives added that they have not influenced the content of the survey, and that they order this type of independent survey every year.

¹³ SOR/2000-206

151. The Commission enquired about Cameco's efforts in providing information to the community. A member of the English River First Nation stated that personnel from Cameco visit their communities several times a year and explain events, company plans and actions for the next ten-year period.
152. CNSC staff informed the Commission that it had reviewed Cameco's revised public information and disclosure program and concluded that it meets CNSC requirements. CNSC staff confirmed that Cameco has developed a public disclosure protocol for its northern Saskatchewan operations and has made it available to the public on its web site.
153. CNSC staff reported that Cameco has continued to engage residents of Saskatchewan's North, and maintained open communications with the interested local communities and Aboriginal groups. As noted above, CNSC staff's assessment was informed by attending numerous community meetings organized by Cameco with the NS-EQC, the Athabasca Working Group, community leadership groups and other stakeholders with a direct interest in the project.
154. CNSC staff informed the Commission that, in addition to public consultation activities, the CNSC provided funding through its Participant Funding Program (PFP) to assist Aboriginal groups, members of the public and other stakeholders to participate in reviewing and commenting on the licence application through written or oral presentations. A Funding Review Committee, independent from the CNSC, reviewed the funding applications received and funding was made available to the following groups and individuals:
 - English River First Nation;
 - Kineepik Métis Local 9, Pinehouse;
 - Prince Albert Grand Council;
 - Mr. Clarence Natomagan;
 - Dr. Rose Roberts;
 - Saskatchewan Environmental Society; and
 - Sierra Club Canada.
155. Some intervenors who received funding under the PFP, including the Saskatchewan Environmental Society, R. Roberts, Kineepik Métis Local Inc. #9, English River First Nation, and C. Natomagan, indicated that the funding was very helpful in enabling them to participate in the licensing process; however, they expressed concern about lack of funding for participation in annual licence reviews if a 10-year licence were to be awarded. They indicated that the PFP program relates to licence application hearings and not to annual reviews. The Commission indicated that this would be investigated since the intent of the PFP is to enable participation during public proceedings of the Commission.
156. A number of intervenors, including K. Scansen, the Lac La Ronge Indian Band, English River First Nation, and the Committee for Future Generations, expressed the

view that, while there is communication from Cameco to local residents and communities, there was little true consultation and meaningful acceptance and use of Aboriginal Traditional Knowledge. Cameco responded that the company encourages dialogue with, and input from, community members with a view to improving the relationship and that this goes beyond providing information.

157. The NS-EQC and the Saskatchewan Environmental Society, in their interventions, added that meaningful consultation with the local communities will be particularly important leading up to a final decision to remove the coffer dam at the Rabbit Lake Operation B-Zone Pit, which would allow the pit water to mix with Wollaston Lake water. Cameco indicated that it understands the local community interest in that operation and provided assurances that the potentially affected communities would continue to be closely consulted on the remediation plan for the B-Zone pit. The final remediation plan will be subject to full regulatory review and approval prior to any implementation.
158. The Committee for Future Generations, in its intervention, expressed concern that the information being provided by Cameco was not sufficiently independent and therefore may not be credible in the eyes of the communities. On the question of independence of information, CNSC staff and other intervenors referred to the directly relevant independent work carried out by the CNSC, Province of Saskatchewan, and independent activities with community involvement such as the Eastern Athabasca Regional Monitoring Program and Athabasca Working Group which confirm that the public health and the environment are not being impacted by Cameco's operations.

3.16.3 Conclusion on Aboriginal Engagement and Public Information

159. Based on this information, the Commission is satisfied that Cameco's public information program meets regulatory requirements. The Commission is also satisfied that Cameco's and CNSC staff's public information activities are effective in keeping the public and Aboriginal communities informed and engaged on the facility operations.
160. The Commission acknowledges the efforts made in relation to the CNSC's obligations regarding Aboriginal consultation and the Legal Duty to Consult. The Commission is satisfied that the proposed licence renewal will not cause any adverse impacts to any potential or established Aboriginal or treaty rights and that the consultation activities undertaken for this licence renewal were adequate, given that no changes to the licensed activities have been requested¹⁴.

3.17 Decommissioning Plans and Financial Guarantee

¹⁴ Rio Tinto Alcan v. Carrier Sekani Tribal Council, 2010 SCC 43, [2010] 2 S.C.R. 650 at paras 45 and 49.

161. The Commission requires that the licensee has operational plans for decommissioning and long-term management of waste produced during the life-span of the facility. In order to ensure that adequate resources are available for a safe and secure future decommissioning of the Rabbit Lake Operation 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.
162. With respect to remediation of the areas at the Rabbit Lake Operation site that are no longer required, Cameco highlighted the work it has completed, or is underway, to remediate lands near and along the shorelines of the three former open pits on Collins Bay, including the former access road to A-Zone. Work is reportedly proceeding on completing and revegetating the engineered covers for the B-Zone rock pile and the Above Ground Tailings Management Area.
163. CNSC staff confirmed that Cameco has been making satisfactory progress in accordance with its Rabbit Lake site reclamation plan approved by the CNSC in 2010. CNSC staff confirmed that remediation is complete at the A and D-Zones, including revegetation of disturbed areas and associated waste rock piles. The B-Zone remediation is progressing. It is partly backfilled and flooded, the pit water quality continues to improve, and the plan for final reclamation is in development. CNSC staff further noted that it is monitoring Cameco's work on the final cover design for the Above Ground Tailings Management Facility which is currently under progressive reclamation. CNSC staff is also closely monitoring Cameco's reclamation plan development for the contaminated Link Lakes drainage, which it expects to receive for review later in the year. CNSC staff reported its satisfaction with the reclamation activities completed and underway.
164. Cameco stated that its Preliminary Decommissioning Plan (PDP) and Preliminary Decommissioning Cost Estimate (PDCE) is updated every five years in accordance with the requirement of the CNSC and Province of Saskatchewan. Cameco declared that the financial guarantee for the Rabbit Lake Operation has been increased for the purpose of the licence renewal application from \$105.2M to \$202.7M. Cameco indicated that new irrevocable standby letters of credit will be issued to the Province of Saskatchewan upon approval of the PDP and PDCE.
165. CNSC staff stated that it has completed a review of Cameco's PDP and PDCE and concluded that it provides sufficient detail and is consistent with regulatory requirements.
166. Kineepik Métis Local Inc., #9, in its intervention, recommended that decommissioning and progressive reclamation activity work should directly involve the local community partners and that the decommissioning plans should be reviewed by a third party. In response to the Commissions questions on the role of third parties in the review of decommissioning plans and costs, CNSC staff responded that it expects licensees to solicit community input in reclamation and decommissioning activities, and to engage a third party in preparing its plans for regulatory approvals. CNSC staff then

independently reviews the technical aspect of plans and cost estimates.

167. A number of intervenors expressed their concerns regarding decommissioning and stated that they were under the impression that Cameco envisions and acts in five-year increments while First Nations' people look ahead to a time when Cameco will no longer be mining in northern Saskatchewan. They wanted assurance that the mine sites would be left in a manner as close to pre-mining conditions as possible for many generations to come and that this should be part of the decommissioning plans. The Northern Saskatchewan Environmental Quality Committee (NS-EQC) stated that future developments should be designed and planned with final decommissioning in mind. Some intervenors, including the Committee for Future Generations and the Saskatchewan Environmental Society, added that they would like to see a plan for the mine site that continues to decommissioning and beyond. CNSC staff stated that such a long-term post-decommissioning vision is reasonable and is in place for most major nuclear facilities. Cameco representatives stated that the company conducts reclamation activities continuously and will ensure that the sites are left in a stable environmentally safe state. Cameco representatives indicated, however, that, due to uncertainties on future business opportunities, it would be difficult to add precision on the specific activities and schedules beyond that currently contained in its reclamation plans. CNSC staff stated that Cameco has an obligation to leave a site in a stable and environmentally safe condition and that measures are in place to ensure this occurs.
168. The NS-EQC noted that they have seen some evidence of decommissioning and reclamation at the McArthur River Operation site and are encouraged by what they have seen. The NS-EQC would like Cameco to continue its efforts in this regard and invited Cameco to involve local communities in the process.
169. The Saskatchewan Environmental Society expressed concerns regarding the long-term monitoring of tailing areas at the site, after decommissioning and reclamation. The Commission asked for further information on reclamation activities and monitoring of decommissioned sites. Cameco representatives stated that their intent is to eventually decommission the sites leaving the areas as close to the natural environment as possible. Cameco representatives added that areas currently no longer used for mining are actively being reclaimed and returned to a natural state. Cameco representatives further stated that there was ongoing monitoring of all facilities, including already reclaimed areas, which would continue beyond the life of the facilities to ensure that the protective covers on the decommissioned waste areas are not eroding and that the waste sites are stable and performing as designed. CNSC staff confirmed that all decommissioning activities would be verified and that Cameco would continue to be involved after mining had ceased. Additionally, the property would eventually revert to the Government of Saskatchewan for ongoing maintenance (institutional control program). CNSC staff added that there is another fund which serves as a financial assurance put to the side for future generations. Those funds will be established for the in-pit tailings management facilities after decommissioning and reclamation.
170. The Commission asked if the decommissioning fund addresses the transfer of a site to institutional control program and the costs of that program. CNSC staff responded that

the decommissioning, including financial guarantees and funds, is a separate process from the institutional control, and that there is a requirement for the funds when the application is put forth for institutional control. The Saskatchewan Ministry of Environment representative clarified that financial guarantee for decommissioning includes some of the post-closure monitoring costs. After a site is released from the CNSC regulation, an appropriate financial assurance would be established for the expected long term monitoring plan.

171. A number of intervenors commented on historical mine operations in northern Saskatchewan that remain in an unsightly and environmentally unacceptable state years after operations has ceased. Comments were made that mine waste in some instances is contaminating lakes and rivers and that barrels and other debris litter the site, yet no one seems to be taking any action. CNSC staff noted that these “legacy” sites are now under government management and regulatory oversight, and that remediation works are now underway or in development. CNSC staff and Cameco representatives concurred that the site conditions at some historic operations are unacceptable and that, under current practice and regulatory requirements, such problems would not occur today. Cameco stated that it has policies and practices in place to ensure that mining and exploration areas are left in a clean state once an operation ceases. Cameco added that, in the course of their work, they have cleaned up areas left by previous operators. The Commission further confirmed that the poor conditions now being rectified at the other sites referred to by the intervenors would now never be permitted at any site.
172. Based on this information, the Commission considers that the preliminary decommissioning plans and related financial guarantee are acceptable for the purpose of the current application for licence renewal.

3.18 Cost Recovery

173. CNSC staff informed the Commission that Cameco is in good standing with the CNSC regarding the licensing fee payment for the Rabbit Lake Operation.

3.19 Licence Length and Conditions

174. Cameco requested the renewal of the current operating licence for a period of ten years. CNSC staff recommended the renewal of the licence for a period of 10 years, stating that Cameco is qualified to carry on the licensed activities authorized by the licence.
175. CNSC staff informed the Commission that it has implemented a process of licence reform to improve the clarity and consistency of CNSC requirements and to streamline the administration of CNSC licences while maintaining adequate regulatory oversight. Accordingly, the proposed licence includes the changes already introduced for nuclear power plants, nuclear fuel fabrication plants, uranium refinery and conversion facilities, and other uranium mines and mills. The proposed licence is associated with the proposed site-specific Licence Conditions Handbook (LCH). The proposed

documents include CNSC staff's recommendations regarding delegation of authority on specific matters to persons authorized by the Commission.

176. CNSC staff added that, if a significant event were to occur, information on the event would be provided to the Commission using the Event Initial Report process. All activities, including proposed changes, would be governed by the licence and the LCH. Any changes outside of the licensing basis would require the Commission's prior review and approval.
177. The Saskatchewan Environmental Society stated that a shorter licence term would be more appropriate given the likelihood of Cameco applying for variations or amendments during the term of the licence to deal with issues of process, production, waste management, and expansion of operations. CNSC staff noted that this application for licence renewal does not encompass any expansion. Any such application would be considered through a separate licensing process, including any federal environmental assessment that may be required.
178. At this time, and while Cameco indicated it is exploring the possibility of expanding the Eagle Point mine to reach new ore deposits, Cameco has not made any application for expansion or significant change to the Rabbit Lake Operation.
179. The English River First Nation expressed the view that if a 10-year term were granted, there should be a mandatory public mid-term review conducted by the Commission with public participation. The Commission sought more details regarding the reporting requirements. CNSC staff stated that it was increasing the reporting frequency by recommending annual reports, instead of a mid-term report after a five-year period. These annual reports would be presented to the Commission for consideration at public meetings. CNSC staff added that a mid-term review would, therefore, not be required if annual reviews were in place.
180. Based on the above information received during the course of this hearing, the Commission is satisfied that a ten-year licence is appropriate. The Commission accepts the licence conditions as recommended by CNSC staff. The Commission also accepts CNSC staff's recommendation regarding the delegation of authority, and notes that it can bring any matter to the Commission as applicable.

4.0 CONCLUSION

181. The Commission has considered the information and submissions of CNSC staff, the applicant and all participants 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.
182. The Commission determined that there was no requirement for an environmental assessment pursuant to subsection 5(1) of the *Canadian Environmental Assessment*

*Act, 2012*¹⁵ (CEAA). The Commission notes that the NSCA provides a strong regulatory framework for environmental protection. Whether an environmental assessment is required or not under CEAA 2012, the CNSC regulatory system ensures that adequate measures are in place to protect the environment and human health in accordance with the NSCA and its Regulations.

183. The Commission is satisfied that Cameco meets the requirements of subsection 24(4) of the *Nuclear Safety and Control Act*. That is, the Commission is of the opinion that the applicant is qualified to carry on the activity that the proposed licence will authorize and that the applicant 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.
184. Therefore, the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, renews the uranium mine and mill operation licence issued to Cameco Corporation for its Rabbit Lake Operation. The renewed licence, UMOL-MINEMILL-RABBIT.00/2023 will be valid from November 1, 2013 until October 31, 2023.
185. The Commission includes in the licence the conditions as recommended by CNSC staff and set out in the draft licence attached to CMD 13-H15.
186. The Commission also accepts CNSC staff's recommendation regarding the delegation of authority in the Licence Conditions Handbook (LCH). The Commission notes that CNSC staff can bring any matter to the Commission as applicable. The Commission directs CNSC staff to inform the Commission on an annual basis of any changes made to the LCH.
187. With this decision, the Commission directs CNSC staff to provide annual reports on the performance of the Rabbit Lake Operation, as part of the Annual Report on Nuclear Fuel Cycle Facilities in Canada. CNSC staff shall present these reports at public proceedings of the Commission. A special focus on the environmental performance of the Rabbit Lake Operation, with emphasis on releases to air, water and soil is expected to be part of the annual reports. Some of the proceedings may be held in Saskatchewan with public participation.
188. The Commission requests that Cameco prepare timeline estimates for completion of each of the major reclamation and decommissioning activities planned at the Rabbit Lake Operation site. Updates of the remediation and decommissioning plans and timelines will be presented as part of the aforementioned annual reports by CNSC staff on the performance of the Rabbit Lake Operation.

¹⁵ S.C. 2012, c. 19, s. 52.

M. Binder

JAN 07 2014

Michael Binder
President,
Canadian Nuclear Safety Commission

Date

Appendix A – Intervenors

Kineepik Métis Local Inc., represented by V. Natomagan and M. Vermette	CMD 13-H13.2 CMD 13-H14.2 CMD 13-H15.2
Prince Albert Grand Council, represented by L. Hardlotte, J. Tsannie, P. Robillard, A. Charles, J. Tsannie and E. Hansen	CMD 13-H13.3 CMD 13-H13.3A CMD 13-H14.3 CMD 13-H14.3A CMD 13-H15.3 CMD 13-H15.3A
Candyce Paul	CMD 13-H13.5 CMD 13-H14.4 CMD 13-H15.4
Saskatchewan Mining Association, represented by P. Schwann	CMD 13-H13.7 CMD 13-H13.7A CMD 13-H14.6 CMD 13-H14.6A CMD 13-H15.5 CMD 13-H15.5A
Athabasca Basin Development Limited Partnership, represented by G. Gay	CMD 13-H13.8 CMD 13-H14.7 CMD 13-H15.6
Johnson-Shoyama Graduate School of Public Policy	CMD 13-H13.9 CMD 13-H14.8 CMD 13-H15.7
Steve Lawrence	CMD 13-H13.10 CMD 13-H14.9 CMD 13-H15.8
Canadian Nuclear Association, represented by H. Kleb and M. Bernard	CMD 13-H13.12 CMD 13-H14.11 CMD 13-H15.10
Dale Dewar	CMD 13-H13.13 CMD 13-H14.12 CMD 13-H15.11
Dwayne Buffin	CMD 13-H13.14
James Little	CMD 13-H13.15 CMD 13-H14.13 CMD 13-H15.12
Snake Lake Group of Companies, represented by R. Rediron	CMD 13-H13.16 CMD 13-H14.13 CMD 13-H15.13

Rose Roberts	CMD 13-H13.17 CMD 13-H13.17A CMD 13-H14.15 CMD 13-H14.15A CMD 13-H15.14 CMD 13-H15.14A
English River First Nation, represented by M. Black and D. Reynolds	CMD 13-H13.18 CMD 13-H14.15 CMD 13-H15.15
Pinehouse Business North Development Inc., represented by J. Wriston	CMD 13-H13.19 CMD 13-H14.17 CMD 13-H15.15
Kitsaki Management Limited Partnership, represented by R. Roberts	CMD 13-H13.20 CMD 13-H14.18 CMD 13-H15.17
Saskatchewan Ministry of Environment, represented by K. McCullum	CMD 13-H13.21 CMD 13-H13.21A CMD 13-H14.19 CMD 13-H14.19A CMD 13-H15.18 CMD 13-H15.18A
Northern Saskatchewan Environmental Quality Committee, represented by N. Wolverine and S. Boyes	CMD 13-H13.22 CMD 13-H14.20 CMD 13-H15.19
Saskatchewan Environmental Society, represented by A. Coxworth and P. Prebble	CMD 13-H13.23 CMD 13-H14.21 CMD 13-H15.20
Committee for Future Generations, represented by D. Mihalicz, D. Smith and B. Lee	CMD 13-H13.24 CMD 13-H14.22 CMD 13-H15.21
Clarence Natomagan	CMD 13-H13.25 CMD 13-H14.23 CMD 13-H15.21
Sierra Club Canada, represented by J. Bennett and C. Elwell	CMD 13-H13.26 CMD 13-H13.26A CMD 13-H14.24 CMD 13-H14.24A CMD 13-H15.23 CMD 13-H15.23A
Lac La Ronge Indian Band, represented by Chief Cook-Searson	CMD 13-H13.27 CMD 13-H14.25 CMD 13-H15.24
Kirstin Scansen	CMD 13-H13.28 CMD 13-H14.26 CMD 13-H15.25