



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Record of Decision

In the Matter of

Applicant

Cameco Corporation

Subject

**Application to Renew the Nuclear Fuel Facility
Operating Licence for the Port Hope Conversion
Facility**

**Public Hearing
Dates**

November 8 and 9, 2016

RECORD OF DECISION

Applicant: Cameco Corporation

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

Purpose: Application to renew the Nuclear Fuel Facility Operating Licence for the Port Hope Conversion Facility

Application received: November 20, 2015 and August 4, 2016

Date of public hearing: November 8 and 9, 2016

Location: Town Park Recreation Centre, 62 McCaul Street, Port Hope, Ontario

Members present: M. Binder, Chair
S. McEwan
D. D. Tolgyesi
R. Velshi

Secretary: M.A. Leblanc
Recording Secretary: S. Dimitrijevic
Senior General Counsel: L. Thiele

Applicant Represented By	Document Number
D. Clark, Vice President, Cameco Fuel Services Division D. Ingalls, General Manager, Port Hope Conversion Facility L. Mooney, Vice President, Safety, Health, Environment & Quality and Regulatory Relations S. Watson, Program Manager, Vision in Motion R. Peters, Superintendent, Special Projects	CMD 16-H8.1 CMD 16-H8.1A
CNSC staff	Document Number
R. Jammal, H. Tadros, K. Murthy, J. Thelen, M. Rinker, J. Burtt, P. Thompson, B. Prieur, M. Jones, A. Bouchard, C. Gélinas, P. Burton, M. Jones, C. Ducros, A. Rupert, A. McAllister, K. Sauvé, K. Glenn, C. Dodkin, A. Levine and C. Purvis	CMD 16-H8 CMD 16-H8.A
Intervenors	Document Number
See appendix A	
Others	
Environment Canada, represented by D. Kim and N. Ali Ministry of Environment and Climate Change, represented by D. Bradley	

Licence: Renewed

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1.0 INTRODUCTION	
1.	Cameco Corporation (Cameco) has applied to the Canadian Nuclear Safety Commission ¹ for a 10-year renewal of the Nuclear Fuel Facility Operating Licence for its Port Hope Conversion Facility (PHCF). The current operating licence, FFOL-3631.0/2017, expires on February 28, 2017.
2.	The PHCF is located within the Municipality of Port Hope, Ontario (the Municipality), situated on the north shore of Lake Ontario, approximately 100 km east of the City of Toronto, Ontario. The facility comprises two sites. Site 1 consists of two properties: the main site property for operations and storage and the Centre Pier property. The Centre Pier property includes buildings used for the storage of contaminated solid waste materials and outside temporary storage for contaminated soils excavated from the municipal water treatment plant located to the west of Site 1. Site 2 consists of a single property for storage facilities and contains two buildings used to store contaminated solid waste materials.
3.	The PHCF processes and stores various natural, depleted and enriched uranium compounds. The facility converts uranium trioxide (UO ₃) powder to uranium dioxide (UO ₂) and uranium hexafluoride (UF ₆). The PHCF also includes facilities to support uranium processing, including maintenance, waste management, laboratory services, utilities and materials handling.
4.	With its application, Cameco informed the Commission about its plans to implement the Vision in Motion (VIM) project during the upcoming licensing period. This is a project to carry out the clean-up, remediation and renewal work at the PHCF and is planned to be carried out under Cameco's existing clean-up program.
5.	<p>Cameco's request for the renewal of the operating licence included the following:</p> <ul style="list-style-type: none"> • No change to the current annual production limits of uranium as UO₂ from the UO₂ plant • Continued authorization to process and store various natural, enriched and depleted uranium compounds • Removal of references to the north UO₂ plant as a UO₂ production facility <p>Cameco further requested that the operating licence specifically describe the authorization for the PHCF to engage in clean-up, decontamination, demolition and remediation activities, including the VIM project, that are within the current licensing basis.</p>
6.	Cameco also requested the Commission's approval of the revised financial guarantee, based on the 2016 update to the Preliminary Decommissioning Plan (PDP).

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.

	<u>Issue</u>
7.	<p>In considering the application, the Commission was required to decide:</p> <ul style="list-style-type: none">a) what environmental assessment review process to apply in relation to this applicationb) if Cameco is qualified to carry on the activity that the licence would authorizec) if, in carrying on that activity, Cameco 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
	<u>Public Hearing</u>
8.	<p>The Commission, in making its decision, considered information presented for a public hearing held on November 8 and 9, 2016 in Port Hope, Ontario. The public hearing was conducted in accordance with the <i>Canadian Nuclear Safety Commission Rules of Procedure</i>². During the public hearing, the Commission considered written submissions and heard oral presentations from Cameco (CMD 16-H8.1 and CMD 16-H8.1A) and CNSC staff (CMD 16-H8 and CMD 16-H8A). The Commission also considered oral and written submissions from 44 intervenors (see Appendix A for a detailed list of interventions). The hearing was webcast live via the CNSC website, and video archives are available for a three-month period following the hearing.</p>
	2.0 DECISION
9.	<p>Based on its consideration of the matter, as described in more detail in the following sections of this <i>Record of Decision</i>, the Commission concludes that Cameco is qualified to carry on the activity that the licence will authorize. The Commission is of the opinion 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,</p>
	<div style="border: 2px solid black; padding: 5px;"><p>the Commission, pursuant to section 24 of the <i>Nuclear Safety and Control Act</i>³, renews the Nuclear Fuel Facility Operating Licence issued to Cameco Corporation for its Port Hope Conversion Facility located in Port Hope, Ontario. The renewed licence, FFOL-3631.00/2027, is valid from March 1, 2017, until February 28, 2027, unless suspended, amended, revoked or replaced.</p></div>

² Statutory Orders and Regulations (S.O.R.)/2000-211.

³ Statutes of Canada (S.C.) 1997, chapter (c.) 9.

10.	The Commission includes in the licence the conditions as recommended by CNSC staff in CMD 16-H8.
11.	The Commission considers the environmental review that was conducted by CNSC staff to be acceptable and thorough.
12.	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.
13.	With this decision, the Commission directs CNSC staff to report annually on the performance of the PHCF, as part of an annual <i>Regulatory Oversight Report</i> . CNSC staff shall present this report at a public proceeding of the Commission, where members of the public will be able to participate.
14.	The Commission encourages Cameco to make available to the public data on contaminants of primary concern and requests that CNSC staff report on the status of public disclosure by Cameco as part of the annual <i>Regulatory Oversight Reports</i> .
15.	The Commission requests that Cameco Corporation present a report regarding the progress of the VIM project activities approximately two years after the first shipment of Cameco's waste materials to the Canadian Nuclear Laboratories (CNL) waste storage site. This report will be presented to the Commission at a public proceeding with public participation.
16.	The Commission accepts the revised financial guarantee proposed by Cameco Corporation, provided that the financial instruments remain unchanged except for the increase in amount to \$128.6 M.
17.	The Commission removes the production limits and references associated with the north UO ₂ plant, as Cameco no longer produces uranium metals at this facility.
	3.0 ISSUES AND COMMISSION FINDINGS
18.	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. These issues encompassed all 14 relevant Safety and Control Areas (SCAs).
	3.1 Management System
19.	The Commission examined Cameco's management system, which provides the

	<p>framework that establishes the processes and programs required to ensure that the PHCF achieves its safety objectives and continuously monitors its performance against these objectives, as well as fostering a healthy safety culture. Based on information submitted by Cameco and CNSC staff, the Commission considered the following specific areas of this safety and control area (SCA):</p> <ul style="list-style-type: none"> • Management system • Organization • Safety culture • Performance assessment, improvement and management review • Change management <p>CNSC staff rated the PHCF performance in this SCA for the period 2012 -2016 as satisfactory.</p>
	<p><i>3.1.1 Management System</i></p>
<p>20.</p>	<p>The Commission considered Cameco’s management system documents and CNSC staff’s verification of whether Cameco’s management system is implemented in accordance with CNSC regulatory requirements. Cameco informed the Commission that the PHCF conducts annual management reviews of the site management system and all associated programs and performance to evaluate the effectiveness of the system and to identify opportunities for improvement. Cameco added that the PHCF’s management system had been developed to meet the CNSC quality assurance elements, the current LCH and to incorporate aspects of CSA standard N286-12, <i>Management system requirements for nuclear facilities</i>. CNSC staff informed the Commission about its desktop reviews and inspections conducted during the current licence period, and reported that Cameco had addressed inspection findings in a timely and satisfactory manner and had taken all appropriate corrective actions.</p>
	<p><i>3.1.2 Organization</i></p>
<p>21.</p>	<p>The Commission assessed the information submitted by Cameco and CNSC staff in regards to the organizational structure at the PHCF, including roles and responsibilities, as documented in the Quality Management Program Manual and Facility Licensing Manual and lower tier documentation and procedures. CNSC staff reported that they had reviewed the PHCF’s organizational structure that underwent a major reorganization conducted in May 2013. CNSC staff stated that the organizational changes have not impacted the safe conduct of licensed activities.</p>
	<p><i>3.1.3 Safety Culture</i></p>
<p>22.</p>	<p>The Commission considered information regarding the safety culture at the PHCF. Cameco informed the Commission about the safety culture assessments conducted approximately every five years at all sites within Cameco’s Fuel Services Division, and about the action plans that were developed in areas where opportunities for continual</p>

	improvement had been identified. CNSC staff reported that they had monitored, and were satisfied with, corrective and preventive actions resulting from the most recent safety culture assessment conducted in 2015.
23.	The Commission enquired about potential improvements in this specific area. CNSC staff responded that this is a relatively new SCA and noted that Cameco had conducted a safety culture assessment that had been reviewed by CNSC staff. CNSC staff added that, during their evaluation of this self-assessment, some opportunities for improvement had been identified and will be discussed with Cameco within the CNSC activities for the preparation of a CNSC regulatory document on safety culture.
	<i>3.1.4 Performance Assessment</i>
24.	The Commission considered the methods used by Cameco to assess the PHCF's performance. These methods include an annual management review, an audit program, and a self-assessment program. Annual management reviews of the site management system and associated programs are conducted to evaluate the effectiveness of the system, to identify opportunities for improvement, and incorporate health and safety as an integral part of good management.
25.	The Commission also considered information on CNSC staff's review of Cameco's annual audit summary reports as part of the CNSC regulatory oversight activities. CNSC staff reported that Cameco conducts audits of the elements of its licensed programs in three-year cycles. Cameco also collects information from inspections conducted by the CNSC, the Ontario Ministry of the Environment and Climate Change (MOECC) and Environment and Climate Change Canada (ECCC), as well as third parties. Results of all audits are reported in Cameco's Incident Reporting System (CIRS) and tracked until the successful implementation of associated corrective actions. During the current licence period, there were no significant issues identified in internal or external audits. CNSC staff further reported that they continue to verify Cameco's activities related to self-assessments at the PHCF, and that the PHCF's self-assessment program will be updated as Cameco transitions to meet the specifications of CSA N286-12, <i>Management System Requirements for Nuclear Facilities</i> .
	<i>3.1.5 Change Management</i>
26.	Cameco informed the Commission about the PHCF's change control program that encompasses process layouts, material design, regulatory personnel, training and document change. CNSC staff submitted that Cameco's change and design control program aligns with CNSC regulatory requirements and ensures that adequate mitigation measures are in place prior to any modifications to PHCF systems, structures and components. CNSC staff reported that Cameco had taken appropriate corrective measures to adequately implement improvements to its change and design control program.
27.	The Commission asked for examples on corrective measures to adequately implement

	<p>improvements. CNSC staff responded that they had reviewed Cameco’s design control program document which showed positive changes in that program document. CNSC staff added that improvements had been made with respect to better linkages to other site programs in Cameco’s document, for example updating titles and responsibilities based on organizational changes at the facility.</p>
	<p><i>3.1.6 Conclusion on Management System</i></p>
28.	<p>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 PHCF during the current licence period provides a positive indication of Cameco’s ability to adequately carry out the activities under the proposed renewed licence.</p>
	<p>3.2 Human Performance Management</p>
29.	<p>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. The Commission’s consideration of this SCA includes the following specific areas:</p> <ul style="list-style-type: none"> • Human performance program • Personnel training <p>CNSC staff evaluated the PHCF’s performance related to this SCA and rated it as satisfactory for the period 2012-2016.</p>
	<p><i>3.2.1 Human Performance Program</i></p>
30.	<p>The Commission considered the tools that Cameco developed to support and improve human performance and the influence of human factors on the development and continuous improvement of site management system programs, processes and activities in the PHCF. Cameco stated that these tools are intended to engage employees, promote awareness of operational status, correct issues, improve communication within and between crews, and drive consistent performance and behaviours. Cameco presented to the Commission information about the principles of human performance management and explained the work control tools used to support these principles. CNSC staff reported that Cameco had conducted a common cause analysis investigation for several events that occurred during the current licence period. As a result, Cameco had to establish a prioritization process for procedure revision and identified the need to improve the clarity of its work instructions. CNSC staff was satisfied with Cameco’s actions and improvements to procedures.</p>
31.	<p>The Commission considered interventions from a number of Cameco employees and</p>

	<p>heard their experience regarding different aspects of human performance management at the PHCF, working conditions, radiation protection, occupational health and safety, security and safety culture in general. This group of intervenors, as well as the North American Young Generation in Nuclear – Durham Chapter, highlighted their positive experience. The Commission enquired about work-related pressure the workers might have experienced from management, as well as about the recognition and compensation for good performance. The intervenors submitted that they had not experienced that kind of pressure or being rushed into less safe solutions, and added that the company recognizes its employees' achievements and shares this information between sites. A Cameco representative described some recognition practices, including small prizes and compensation as part of a program where the employee can be compensated for the cost savings associated with work-related improvements.</p>
32.	<p>The Commission further enquired about the sources for recruiting new employees and the migration of the workforce between Cameco's sites. One of the intervenors, a training coordinator for the PHCF, responded that, depending on the work requirements, new employees are recruited from different production plants and from a network of schools in Ontario with which Cameco already has an established collaboration. The intervenor also submitted that there were a number of employees who had transferred between the Cameco sites located in Port Hope and Cobourg and have work experience from multiple sites. A representative from Cameco pointed out that the turnover of employees through the organization was low, and that the bulk of the turnover was represented by retirees that have had 35 to 40 years of experience at the PHCF.</p>
33.	<p>The Commission noted the high level of professionalism, engagement and commitment (especially to safety) demonstrated through the interventions submitted by Cameco's employees, which reflected positively on the workplace culture.</p>
	<p><i>3.2.2 Personnel Training</i></p>
34.	<p>The Commission examined whether Cameco meets the requirement to maintain sufficient qualified personnel in attendance at the PHCF to ensure at all times the safe conduct of activities authorized by the licence. Cameco informed the Commission that the company uses a systematic approach to training and a computerized learning management system, which were updated to meet all the requirements of CNSC regulatory document REGDOC-2.2.2, <i>Personnel Training</i>, published by the CNSC in 2014. CNSC staff reported that they had reviewed the latest revision of the PHCF training plan and found that it meets the requirements of REGDOC-2.2.2. CNSC staff informed the Commission about the compliance inspections related to personnel training at the PHCF conducted between January 2012 and January 2015, and noted that Cameco had addressed all inspection findings in a satisfactory manner and had taken all appropriate corrective actions. CNSC staff further reported that Cameco had continued to maintain acceptable staffing levels that account for the safe operation of the UO₂ and UF₆ plants, emergency response and security.</p>

35.	The Commission enquired about the average time spent on training, requalification and refreshing at the PHCF. A training coordinator for the PHCF, who appeared before the Commission as an intervenor, responded that the average time is role-specific, and could be in excess of 500 hours for training of a brand new operator to a fully qualified operator.
36.	The Commission further enquired about the degree of compliance with the training requirements and the consequences for non-compliant candidates. The training coordinator for the PHCF submitted that they had 95% compliance with the training requirements, and that the individuals who were not compliant, for different reasons, were accommodated where appropriate to make sure that they obtain their required qualification.
37.	The Commission, referring to the intervention by United Steelworkers Local 13173 which stated that the union promotes, trains and supports all aspects of health and safety in the workplace, enquired about the involvement of the union in the definition of the objectives for training programs and their underpinning philosophy. The union representative confirmed that the union has been involved and has been helping with the training processes.
38.	The Commission enquired about the level of training offered to contracted workers at the PHCF. The Cameco representative explained that the contracted workers do not receive an equal level of training compared to Cameco employees. However, Cameco makes sure that all contracted workers receive the safety training required for the job that they have to perform at the site.
<i>3.2.3 Conclusion on Human Performance Management</i>	
39.	Based on its consideration of the presented information, the Commission concludes that Cameco has appropriate programs in place and that the 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	
40.	The Commission considered the operating performance of the PHCF, including CNSC staff's 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 PHCF. CNSC staff reviewed the following specific areas encompassed by this SCA: <ul style="list-style-type: none">• Conduct of licensed activity• Procedures• Reporting and trending

	After evaluating the PHCF's performance in this SCA, CNSC rated it as satisfactory for the period 2012-2016.
	<i>3.3.1 Conduct of Licensed Activity</i>
41.	The Commission considered the operating practices in the PHCF, as described in the Facility Licensing Manual and associated programs, and how the facility operated within its licensing basis. Cameco informed the Commission about accomplishments during the current licence period, and presented future plans for the operational improvements and remediation of the site and Port Hope harbour. CNSC staff reported that Cameco operates the PHCF in compliance with CNSC regulatory requirements and remained well below its production limits for the current licence period. With respect to Cameco's request regarding the removal of production limits for the metal plants and references to the north UO ₂ plant, CNSC staff recommended removing the production limits and references associated with the north UO ₂ plant, since uranium metals are not produced at the PHCF anymore and Cameco dismantled the PHCF's uranium metal production equipment.
42.	The Commission sought more information about customer audits conducted by Vattenfall Nuclear Fuel AB, a customer of Cameco that had submitted an intervention to support Cameco's licence renewal application. The Cameco representative submitted that the PHCF has a very large number of customer audits that take place throughout the year, and that Vattenfall Nuclear Fuel AB is conducting audits every few years. The findings from those audits are recorded in Cameco's CIRS to ensure that corrective actions are implemented for any findings. CNSC staff added that their inspections include the verification of third-parties' audit reports.
43.	The Commission considered the proposed PHCF licensed activities and enquired whether Cameco would continue to process depleted uranium. The Commission noted that several intervenors submitted that the limits for the processing of depleted uranium were not specified. The Cameco representative explained that the facility continues to produce depleted uranium in the form of UO ₂ that is required for CANDU reactors, and that this licensed activity would not change. The amount of this depleted uranium containing UO ₂ is included in the total limit for UO ₂ production.
	<i>3.3.2 Procedures</i>
44.	CNSC staff reported on their inspection of the implementation of error-reduction processes and associated training modules that had been developed, enhanced and implemented in the PHCF. These processes included job hazard analysis, hazards and operability and the CIRS.
45.	The Commission enquired about the functioning and accessibility of the CIRS. CNSC staff explained that the CIRS is part of the management system's audit, and that CNSC staff's site inspections include a routine verification of the functioning of the CIRS to make sure that events are reported in the CIRS, are captured and tracked, and followed

	by necessary actions. The CIRS is available to CNSC staff, which regularly accesses and checks it.
	<i>3.3.3 Reporting and Trending</i>
46.	CNSC staff informed the Commission that incidents related to plant operations, lost time injuries and action levels for environmental releases were reported to the CNSC and other relevant regulators including the MOECC and ECCC. CNSC staff noted that Cameco reported 42 events during the current licence period. CNSC staff is satisfied with Cameco's event detection, reporting, investigation process, and timely implementation of corrective actions and lessons learned. Cameco provided more details about three of the events that were reported to the Commission during public proceedings. Two of them involving internal releases of hydrogen and fluoride gases occurred in 2014 and were presented to the Commission as Event Initial Reports (EIRs). The corrective actions have been reviewed and accepted by CNSC staff. The third event, a release of diluted nitric acid into secondary containment within the plant in April 2016, was presented to the Commission twice as a status update. The corrective actions are in progress and CNSC staff will track their implementation.
	<i>3.3.4 Conclusion on Operating Performance</i>
47.	Based on the above information, the Commission concludes that the operating performance at the facility during the current licence period provides a positive indication of Cameco's ability to carry out the activities under the proposed licence.
48.	The Commission removes the production limits and references associated with the north UO ₂ plant, as Cameco no longer produces uranium metals at this facility.
	3.4 Safety Analysis
49.	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. The Commission considered CNSC staff's review of the specific areas of this SCA, as well as Cameco's submission regarding the site safety report that summarizes the systematic review of the PHCF operations, to identify and assess hazards and potential risks to the public and environment. The Commission also considered Cameco's hazards and operability (HAZOP) approach used to assess new processes or equipment, human actions and other factors that may affect the safety case for the facility.
50.	CNSC staff reviewed the following specific areas encompassed by this SCA: <ul style="list-style-type: none"> • Hazard analysis • Criticality safety

	<p>After evaluating the PHCF's performance in this SCA, CNSC rated it as satisfactory for the period 2012-2016.</p>
	<p><i>3.4.1 Hazard Analysis</i></p>
51.	<p>The Commission considered CNSC staff's evaluation of Cameco's safety report and fire hazard analysis for the PHCF. CNSC staff submitted that Cameco's assessments have included an environmental risk assessment (ERA), a flood study, a harbour wall study, and screening level risk assessments for the UF₆ process and anhydrous hydrogen fluoride service. CNSC staff is satisfied with the most recent revision to the safety report that was made in 2015. This report is reviewed for accuracy and updated every five years. CNSC staff also submitted that the PHCF has an acceptable fire hazard analysis, compliant with the requirements of the National Fire Protection Association NFPA-801, <i>Fire Protection for Facilities Handling Radioactive Materials</i>. CNSC staff reported that its inspection of emergency management and fire safety conducted in February 2016 resulted in the finding of minor deficiencies, some of which had been addressed immediately by Cameco, while the others had been included in a corrective action plan which CNSC staff will monitor as a part of regular oversight activities.</p>
52.	<p>Cameco informed the Commission about the conclusions of the updated safety report, which concludes that the risk to the public and the environment arising from an unplanned release of hazardous materials stored, processed and transported to and from the PHCF has been mitigated. Cameco further informed the Commission that the ERA and the derived release limit (DRL) assessment for the PHCF had been submitted to CNSC staff and accepted. These assessments have been completed in accordance with CSA standards N288.6-12: <i>Environmental Risk Assessment</i> and N288.1-14: <i>Derived Release Limit</i>. The PHCF has committed to the full implementation of CSA standard N393-13: <i>Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances</i> by December 2017.</p>
	<p><i>3.4.2 Criticality Safety</i></p>
53.	<p>CNSC staff reported that operations with uranium enriched material stored at the PHCF from past operations were controlled by a criticality control committee, and that the procedures were documented. CNSC staff conducted a focused inspection of Cameco's implementation of its nuclear criticality program in May 2014. All findings were minor in nature and have been adequately addressed by Cameco.</p>
54.	<p>The Commission enquired about the PHCF's activities related to enriched uranium and potential criticality issues. The Cameco representative responded that the inventory of uranium enriched material that exists at the site represents contaminated historical waste, and that the PHCF currently does not have any projects or research involving enriched material. The PHCF has a criticality control plan in place. CNSC staff confirmed that, at the PHCF site, there is not enough material for a critical mass, which</p>

	means that the operations are inherently safe and there is no potential for an inadvertent criticality accident.
	3.4.3 Conclusion on Safety Analysis
55.	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 are adequate for the operation of the facility and the activities under the proposed licence.
	3.5 Physical Design
56.	Physical design includes activities to design the systems, structures and components to meet and maintain the design basis of the facility. The design basis is the range of conditions, according to established criteria, that the facility must withstand without exceeding authorized limits for the planned operation of safety systems. CNSC staff reviewed this SCA and rated it as satisfactory for the period 2012-2016.
57.	Cameco informed the Commission that its program for physical design is described in the Facility Licensing Manual and covers numerous types of conventional industrial equipment at the PHCF. Cameco described different aspects of the physical design program, and identified and prioritized plant improvements related to physical design. Cameco further informed the Commission about the improvements made during the current licence period and the quality control related to the PHCF pressure systems and pressure boundary program.
58.	CNSC staff reported that Cameco's implementation of the physical design SCA requirements continues to meet CNSC regulatory requirements and that Cameco continues to maintain a pressure boundary program, including a formal agreement with an external party to perform all inspections as required by CSA standard B51-09, <i>Boiler, pressure vessel, and pressure piping code</i> . CNSC staff added that Cameco would provide to CNSC staff, by December 2016, its plan to fully implement the 2014 edition of CSA B51.
59.	On the basis of the information presented, the Commission concludes that the design of the facility is adequate for the operation period included in the proposed licence.
	3.6 Fitness for Service
60.	Fitness for Service covers activities performed to ensure the systems, components and structures at the PHCF continue to effectively fulfill their intended purpose. CNSC staff reviewed this SCA and rated it as satisfactory for the period 2012-2016. The Commission considered Cameco's submission related to the PHCF's preventive maintenance program, in-service inspection program, operational reliability program,

	<p>and other testing and review systems. CNSC staff confirmed that Cameco had identified safety-significant structures, systems and components at the PHCF and had implemented preventive maintenance, inspection and testing programs. CNSC staff reported that the results of inspections and desktop reviews demonstrate that Cameco maintains its UF₆ plant, UO₂ plant and supporting infrastructure in compliance with regulatory requirements. CNSC staff further reported that the routine inspections of the maintenance records associated with the preventive maintenance program had demonstrated that Cameco was conducting the required maintenance at the required frequency.</p>
61.	<p>The Commission sought more information regarding the operational reliability at the PHCF, referring to a concern related to this issue expressed by an intervenor. The Cameco representative described the multifaceted programs at the PHCF that improve operational reliability and involve planning, scheduling, asset management plans and improvements of the maintenance practices. Cameco stated that the effectiveness of these programs is measured and demonstrated by the very high percentage of operational time for the facility.</p>
62.	<p>The Commission enquired about maintenance backlog at the PHCF. The Cameco representative responded that maintenance backlogs are maintained for planning, prioritizing and scheduling, and noted that the amount of emergency work orders is also tracked. The Cameco representative added that the PHCF maintains a steady amount of backlog.</p>
63.	<p>The Commission is satisfied with Cameco's programs for the inspection and lifecycle management of key safety systems. The Commission encourages Cameco to continue to address maintenance backlog as was explained during the hearing. Based on the above information, the Commission concludes that the equipment as installed at the PHCF is fit for service.</p>
	3.7 Radiation Protection
64.	<p>As part of its evaluation of the adequacy of the measures for protecting the health and safety of persons, the Commission considered the past performance of Cameco in the area of radiation protection. The Commission also considered the radiation program at the PHCF 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. CNSC staff provided information on the following specific areas encompassed by this SCA:</p> <ul style="list-style-type: none">• Application of ALARA• Worker dose control• Radiation protection program performance• Radiological hazard control• Estimated dose to the public

	<p>After evaluating the PHCF's performance in this SCA, CNSC staff rated it as satisfactory for the period 2012-2016. CNSC staff added that Cameco had implemented and maintained an effective radiation protection (RP) program as required by the <i>Radiation Protection Regulations</i>⁴, and that no worker or member of the public had received a radiation dose in excess of regulatory limits as a result of the licensed activities conducted at the PHCF.</p>
65.	<p>CNSC staff reported on its assessment of Cameco's RP program performance conducted through various CNSC staff compliance verification activities, including desktop reviews of quarterly and annual compliance reports, as well as numerous inspections. In response to the findings from these activities, Cameco implemented enhancements to the RP program and established appropriate corrective actions to address areas requiring improvement. CNSC staff also informed the Commission about its assessment of Cameco's radiological hazard control, which includes the measures to control and prevent unnecessary radioactive releases and radiation exposures at the PHCF through monitoring. CNSC staff described the assessed radiation zoning scheme at the PHCF and monitoring of radiation within the zones, and stated that radiological hazards have been adequately controlled at the PHCF.</p>
	<p><i>3.7.1 Public Radiation Exposure</i></p>
66.	<p>Cameco informed the Commission about the potential sources for radiation doses to the public from the PHCF, about methods applied to estimate doses to the members of the public based on the PHCF operating release limits (ORL), and presented the estimated results for the current licence period. The highest annual effective dose calculated over the current licence period was 0.029 mSv/y (milliSieverts per year) in 2012. This value is 2.9% of the regulatory dose limit for members of the public of 1 mSv/y. CNSC staff submitted that sources for potential public radiation exposure are controlled and monitored in accordance with the PHCF's environmental and RP programs, and confirmed the estimation of the doses presented by Cameco.</p>
67.	<p>Some intervenors, including the Port Hope Community Health Concerns Committee, expressed concerns regarding the impact of the PHCF operation on public health, given the history of uranium processing at the facility, and requested a shorter licence duration, typically two years with the condition that, within this period, Cameco prepare a plan for approval by the Commission, the Municipality, and the public to fully decommission all of its sites and conclude their operation by 2021, including the clean-up and waste removal. The intervenors also requested independent and federally funded updated morbidity, mortality, and cancer studies of the Port Hope residents and Port Hope nuclear workers.</p>
68.	<p>The Commission asked for submissions regarding the studies on the effects of the operation of the PHCF on the health of the population of Port Hope and available</p>

⁴ S.O.R. 2000-203.

	<p>epidemiological data. CNSC staff responded that the population of Port Hope had been studied extensively and that epidemiological studies have looked at cancer incidents, as well as cancer mortality and a range of different birth defects. The overall results of these studies complement each other and demonstrate that there is no solid scientific evidence of any excess cancers, mortality, different kinds of cancers in different age groups and different sexes, caused by radiation coming from this facility. CNSC staff provided a description of the time-scale fluctuations of epidemiological data on cancer appearance in communities across Canada, studied by the CNSC, Health Canada, the provinces, and academic institutions.</p>
69.	<p>The Commission pointed out that all of the presented information had already been considered by the Commission during previous public proceedings held in the Port Hope area, and asked if any new information that has not been considered by the Commission was available. CNSC staff summarized recent results that had not been presented earlier and stated that the conclusion of a study of the cancer incidence in Port Hope from 1992 to 2007 had the same conclusions: there were no elevations in the incidence of different cancers in different groups of people or over different time periods that could be linked to radiation exposures.</p>
70.	<p>Asked by the Commission to substantiate their rejection of the presented results of the epidemiological studies, the intervenors were not able to cite results that would counter the results of the studies presented by CNSC staff, but reiterated that some types of cancer that can be associated with radiation exposure are above the national average.</p>
71.	<p>The Commission considered concerns raised by the intervenors regarding a potential increase of public radiation exposure caused by the clean-up activities. Asked for an opinion on this issue, CNSC staff submitted that, under the EA assessment that was conducted, any excavation work to be done, either as a part of the remediation of the Centre Pier or the Port Hope Area Initiative (PHAI), would have to have a dust mitigation strategy, and this was made a part of the licence requirements.</p>
72.	<p>The Commission enquired about Cameco's monitoring of gamma radiation emitted from the stored legacy radioactive material, which might represent a risk to members of the public. The Cameco representative responded that stationary environmental dosimeters are used at the fences of the PHCF to measure the emissions, including gamma, and demonstrate that the doses to the public remain a small fraction of the regulatory limit. The Cameco representatives stated that the cylinders stored close to the PHCF fence (for future decommissioning), which were singled out by the intervenors as increasing risks, are empty and clean, and do not contain any uranium residues in them. The Cameco representatives added that the detected radiation at the fence originates from the buildings containing radioactive materials and not from the stored cylinders. CNSC staff submitted that its inspection of the site conducted in 2015 demonstrated that the radiation levels at the fence were between 0.02% and 0.03% of the regulatory limit for the public, and confirmed that the cylinders in question were clean. The Commission acknowledged that the evidence demonstrates that the radiation levels at the fences of PHCF are a small fraction of the regulatory limits. The</p>

	Commission notes the dissatisfaction expressed by the intervenors regarding this explanation; however, the Commission does not intend at this instance to reopen a discussion about the existence or non-existence of safe levels for low radiation doses, being satisfied that the current regulatory levels are safe.
	<i>3.7.2 Workers Radiation Exposure</i>
73.	The Commission considered dosimetry data including annual external, specific internal and effective doses to workers, as well as doses to the public for the current licence period. All presented results have demonstrated that all doses were well below regulatory limits. The doses have also been compared to established ALARA targets set at about 10% of the regulatory limits. All average doses were well below the ALARA targets throughout the licence period except on a few occasions, but the recorded values were still below regulatory limits.
74.	CNSC staff submitted that the RP program implemented at the PHCF was developed in line with CNSC Regulatory Guide G-129, <i>Keeping Radiation Exposures and Doses “As Low As Reasonably Achievable” (ALARA)</i> and added that Cameco establishes ALARA targets focused on worker dose reduction initiatives. CNSC staff also informed the Commission about Cameco’s 2016 comprehensive review of the current radiological action levels for workers and that they had accepted Cameco’s review. CNSC staff included the revised radiological action levels in the verification criteria for the proposed licence.
75.	After considering interventions from a number of Cameco employees regarding working conditions, radiation protection and safety measures, the Commission enquired about these intervenors’ observations related to epidemiological studies. An intervenor, currently an occupational health physician for Cameco, responded that studies conducted in 1984 and 2006 have demonstrated that there were no indications that PHCF employees were at higher risk from radiation-related diseases and death. The intervenor pointed out that he systematically checks all employees at the PHCF and was able to conduct, with Cameco’s support, additional tests that include a larger list of diseases, with results that support the conclusions of previously mentioned studies.
76.	The Commission enquired about Cameco’s dosimetry program for internal uptakes and the frequency of urine sampling and lung dose counting. The Cameco representative explained that Cameco’s dosimetry program was outlined in its internal dosimetry licence and that the frequency of sampling varies by work group. The most exposed work group has a lung count done twice per year, and members of this work group have to submit urine samples every time they change their shift cycle, which means at least once a week.
	<i>3.7.3 Conclusion on Radiation Protection</i>
77.	The Commission is of the opinion that, given the mitigation measures and safety

	programs that are in place or will be in place to control radiation hazards, Cameco provides adequate protection to the health and safety of persons and the environment.
78.	The Commission has heard the concerns expressed by some intervenors regarding the impact of the PHCF operations on the health of the surrounding population. The Commission considers that the numerous studies made in this area, as presented on the record for this hearing, are sufficient to demonstrate that the health of the population is not significantly adversely affected by the PHCF operations.
	3.8 Conventional Health and Safety
79.	<p>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 <i>Canada Labour Code</i>⁵ and conventional safety training. The Commission considered the past performance of Cameco in the area of conventional health and safety. CNSC staff evaluated Cameco’s performance in this SCA focusing on the following specific areas:</p> <ul style="list-style-type: none"> • Performance • Practices • Awareness <p>After evaluating the PHCF performance in this SCA, CNSC staff rated it as satisfactory for the period 2012-2016. CNSC staff noted that routine inspections had not identified major findings in this area, and that the PHCF continues to demonstrate its ability to keep workers safe from occupational injuries while conducting its licensed activities.</p>
80.	Cameco informed the Commission about the purpose, role and structure of the PHCF workplace health and safety committee and its subcommittees. Cameco informed the Commission about the PHCF’s audit program and noted that, during the current licence period, 18 audits included the assessment of components of the occupational health and safety program. No significant issues were identified during these audits, and all appropriate actions were completed and documented in the CIRS. Cameco also provided information on the total recordable injury rate and the annual numbers of lost time injuries for the current licence period. Cameco noted that the PHCF had the two safest years of operation recorded at the facility in 2013 and 2015, with total recordable injury rates of 1.05 and 1.84, and lost time injuries of zero and one, respectively.
81.	CNSC staff informed the Commission about the results of regulatory oversight of the activities of the PHCF health and safety committee and its subcommittees, as well as its evaluation of Cameco’s job hazard analysis program. CNSC staff is of the opinion

⁵ R.S.C., 1985, c. L-2

	<p>that Cameco continues to maintain an effective conventional health and safety management program, which has resulted in the ability to keep its workers safe from occupational injuries.</p>
82.	<p>The Commission asked about the role of the Conversion Safety Steering Committee (CSSC). The Cameco representative responded that the formation of the CSSC was part of the safety improvement plan conducted during the current licence period and is a replacement of the original joint health and safety committees that are required under the <i>Canada Labour Code</i>. By forming the CSSC and its specialized subcommittees, Cameco wanted the employees to become involved in setting Cameco's safety programs. CNSC staff noted that, as part of the inspections, they review minutes of the CSSC and subcommittees' meetings.</p>
83.	<p>Members of the United Steelworkers Local 13173, in their interventions, provided a detailed description of the workers' involvement and the functioning, through a proactive approach, of the CSSC and its subcommittees, emphasizing their daily engagement in safety issues. The intervenors explained the focal points and structure of the eight subcommittees and highlighted the benefits of the implementation of the CSSC at the PHCF.</p>
84.	<p>Based on the information presented, the Commission is of the opinion that the health and safety of workers was adequately protected during the operation of the facility for the current licence period, and that the health and safety of workers will also be adequately protected during the continued operation of the facility.</p>
	3.9 Environmental Protection
85.	<p>Environmental protection covers Cameco's programs that 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. The Commission considered submissions from Cameco and CNSC staff that encompass the following specific safety areas:</p> <ul style="list-style-type: none">• Effluent and emissions control• Environmental management system (EMS)• Assessment and monitoring• Protection of the public• Environmental risk assessment (ERA) <p>CNSC staff verified Cameco's performance with respect to environmental protection through the review of Cameco's reports, submissions and routine compliance inspections. The findings of the conducted inspections were minor in nature and have been adequately addressed by Cameco. CNSC staff rated the PHCF's performance in this SCA as satisfactory for the period 2012-2016.</p>

	<i>3.9.1 Effluent and Emissions Control</i>
86.	The Commission considered Cameco’s information regarding liquid and airborne releases resulting from the impact of the PHCF licensed activities to the environment and Cameco’s control and monitoring of these releases. The data submitted for uranium, fluoride and ammonia have demonstrated that, during the current licence period, releases to the environment were well below the release limits specified in the CNSC licence.
87.	The Commission considered Cameco’s monitoring data of the PHCF’s atmospheric emissions and liquid effluent discharges. These discharges were monitored and in compliance with CNSC regulatory requirements as well as applicable requirements of other regulators. CNSC staff confirmed the monitoring results, considered the levels to be consistently low and acceptable, and noted that the licence requirement prohibiting the discharge of the process waste water effluent has been met.
88.	CNSC staff reported that they monitor Cameco’s implementation of the environmental protection program through compliance verification activities. CNSC staff provided information about the release limits and the proposed changes to these limits based on the ORLs established for the PHCF. CNSC staff also explained the role of the established action levels that provide an early indication of a potential loss of control. They are set to correspond to between 5% and 30% of the public dose limit of 1 mSv/y. The uranium action level for the UO ₂ main plant stack emissions was exceeded only once, in 2012, due to maintenance activities on the pollution control equipment. There was no impact on the environment or the health of workers or the public as a result of this action level exceedance. Cameco provided the CNSC with an acceptable corrective action plan. CNSC staff informed the Commission about Cameco’s update of its ORL and DRL reports to reflect changes to the PHCF operations and to follow the guidance of CSA standard N288.1-14, <i>Guideline for Calculating Derived Release Limits for Radioactive Material in Airborne and Liquid Effluents for Normal Operation of Nuclear Facilities</i> .
89.	Lake Ontario Waterkeeper (LOW), in its intervention, objected to the renewal of the PHCF operating licence, particularly to a 10-year licence term, and stated that there were several major information gaps that needed to be filled before the Commission can render its decision. These alleged information gaps concern the following issues: <ul style="list-style-type: none"> • Lack of information and lack of CNSC staff’s conclusion regarding Cameco’s recent self-assessment of the impact of its facility’s cooling water intakes on local aquatic biota, and whether it would require a permit from the Department of Fisheries and Oceans • More information is needed about Cameco’s wastewater treatment plans related to the VIM project • Cameco must provide more complete information regarding the management of all contaminants of primary concern at the PHCF

	<ul style="list-style-type: none">• Cameco has refused to release its public information program on the grounds that it's an internal policy document and there is a blanket prohibition on releasing any internal policies to the public <p>LOW submitted that the unavailable information had prevented it from performing a comprehensive review of the application. However, LOW reviewed several aspects of the application and informed the Commission about its concerns. Based on this review, LOW submitted to the Commission 11 recommendations related to the PHCF's effluent discharges and effluent monitoring programs, PHCF's compliance with the <i>Fisheries Act</i>⁶, and the PHCF's public information and disclosure programs. Key concerns expressed by LOW included effluent releases and monitoring, notably the discharge of contaminated storm water going into the harbour via the storm sewer network, water discharged to the sanitary sewer system, and contaminated groundwater from the site that is also discharging into the harbour. In addition, multiple intervenors, including the Canadian Association of Nuclear Host Communities and the Municipality of Clarington, in their interventions, requested clarification regarding the proposed revision to the release limits for uranium in the sewer. Similar concerns regarding ORLs and DRLs have been expressed in the intervention by the Mohawks of the Bay of Quinte (MBQ).</p>
90.	<p>The Commission considered the concerns expressed in these interventions and pursued information on the impacts of the releases from the PHCF operation on the quality of harbour water and potential contamination of Lake Ontario. CNSC staff explained that there is no direct discharge of uranium to the sanitary sewer and the sewer discharge is not treated at the PHCF. Cameco analyzes daily uranium discharge from the PHCF. The sewer discharge is also continuously monitored using an auto-sampler at the final point before being introduced into the municipal sewer. After being treated in the municipality's sewage treatment plant, the treated sanitary sewer effluent is discharged to Lake Ontario.</p>
91.	<p>The Commission enquired about the release limits and action levels and sought clarification regarding the proposed changes to uranium discharge levels. CNSC staff recognized that the protective limits based on the toxicity of uranium are more stringent than the limits based on radiological doses. Consequently, CNSC staff changed its recommendation for the uranium release limit from the originally proposed 1 825 kg/y, to a more conservative, toxicity based interim value of 275 µg/L (micrograms per litre). This limit at the release point from the facility, taking into account the dilution that would occur before the water reaches the lake, would meet the Canadian federal water quality limit for the protection of aquatic life of 15 µg/L. CNSC staff also agreed with LOW that the point of control should be at the facility, at a much tighter limit, rather than relying on the wastewater treatment plant as a point of control. CNSC staff added that the CNSC independent environmental monitoring of water flowing into and out of the wastewater treatment plant had demonstrated that the releases from the PHCF were within the more conservative limit of 275 µg/L during</p>

⁶ R.S.C., 1985, c. F-14

	<p>the course of this licence term. Asked by the Commission about the measured value of the release, the Cameco representative responded that the routinely collected samples typically contained about 20 µg/L. Asked by the Commission for a comment, LOW submitted that the change was made in a good direction, but could have been set at an even lower value.</p>
<p>92.</p>	<p>With respect to groundwater concerns, CNSC staff submitted that no processed effluent groundwater or storm water is discharged to the sanitary sewer. The main sources to the sanitary sewer are effluent discharges from the powerhouse and contributions from the facility showering facilities. CNSC staff added that, during the current licensing period, the sanitary sewer uranium loadings ranged from 2.4 kg/y in 2012 to 6.5 kg/y in 2014. The Commission noted the concerns expressed by LOW that the information on effluent management had been focused on the sanitary sewer discharges, and enquired about storm sewer discharges and groundwater discharges to the harbour. The Cameco representative explained that Cameco has a very comprehensive environmental monitoring program at the PHCF and that the site was very well modelled for groundwater flow. The Cameco representative noted that a risk assessment had demonstrated that, even without treatment, there was no risk to the aquatic environment or the public. The Cameco representative added that Cameco performs semi-annual monitoring of the PHCF storm water discharges and submits summary reports to CNSC staff. Cameco intends to substantially improve this storm water system through the VIM project. CNSC staff submitted that they were observing the effects related to storm water through the ERA, analyses of the water quality in the turning basin and the soil, and through inspections and compliance monitoring. CNSC staff is of the opinion that there were adequate measures for the protection of the environment at the PHCF.</p>
<p>93.</p>	<p>The Commission noted that there was a great difference between the release limits and measured discharged amounts, and asked what value would be set as an action level. CNSC staff responded that the establishment of action levels is considered in light of the draft CSA standard N288.8-16, <i>Establishing and Implementing Action Levels for Releases to the Environment from Nuclear Facilities</i>. CNSC staff added that the action levels would be established by the end of 2016 with the value set to considerably lower than the release limit. In addition, the PHCF would have its site-specific administrative levels in order to deal with any discharges leaving the site and to keep them lower than the release limits.</p>
<p>94.</p>	<p>The Commission directs CNSC staff to provide, in all CNSC staff documentation, a clear, understandable to lay persons, explanation of release limits and action levels, basis for the accepted values and rationales and justifications for changes to those, if proposed for approval and as appropriate. The Commission also suggests that CNSC staff include action levels in their reports, even though these are not regulatory requirements, but rather as a demonstration of the “defence in depth”.</p>
<p>95.</p>	<p>The Commission invited the MOECC to present its views and position with respect to the releases from the PHCF. A representative from the MOECC provided information</p>

	<p>on an environmental compliance approval that had been issued to Cameco, and added that the MOECC undertakes regular reviews of Cameco's reports. The MOECC representative added that the last review indicated that Cameco was in compliance with regulations under the <i>Canadian Environmental Protection Act</i>⁷ in relation to air emissions. The MOECC representative added that they regulate storm water discharges, as well as process effluent discharges, and issue environmental compliance approvals under the <i>Ontario Water Resources Act</i>⁸ for those discharges. The MOECC representative submitted that they were aware of the groundwater contamination issues on Cameco's property and that they were in regular communication with CNSC staff and Cameco regarding the operation and control of Cameco's pump and treat system and the measures in place for controlling groundwater discharges to the harbour.</p>
	<p><i>3.9.2 Environmental Management System</i></p>
96.	<p>The Commission heard CNSC staff's assessment of Cameco's EMS described in its Environmental Management Program Manual, which includes activities such as establishing annual environmental objectives and targets. The EMS is verified through the annual management reviews that include minutes and follow-up to outstanding issues. These reviews are assessed by CNSC staff. CNSC staff stated that Cameco was conducting annual management reviews according to CNSC requirements, and that the issues identified were addressed in a satisfactory manner.</p>
	<p><i>3.9.3 Assessment and Monitoring</i></p>
97.	<p>The Commission considered information about the environmental monitoring program that serves to demonstrate that the site emissions of nuclear and hazardous substances are properly controlled. This program also provides data for estimating annual radiological doses to the public. Cameco provided monitoring data on ambient air monitoring, vegetation, soil, surface water and groundwater monitoring, as well as gamma monitoring. The presented data demonstrated that all emissions have been kept well below regulatory limits, as well as below action levels. Cameco informed the Commission about the various audits conducted at the PHCF during the current licence period and noted that no significant issues had been identified during these audits. Cameco also informed the Commission about the improvements made over the current licence period that have enhanced PHCF's environmental protection program and environmental performance.</p>
98.	<p>CNSC staff confirmed the monitoring results and informed the Commission about the results obtained through the CNSC Independent Environmental Monitoring Program (IEMP). CNSC staff explained that samples of air, water, soil, and wild vegetation were collected in publicly accessible areas outside the perimeter of the PHCF and tested for uranium, fluoride, nitrate and ammonia. The IEMP results indicate that the public and the environment around the PHCF site are safe and that there are no health</p>

⁷ S.C. 1999, c. 33.

⁸ R.S.O. 1990, c.O.40.

	impacts as a result of facility operations.
99.	<p>Cameco informed the Commission of upgrades with respect to the VIM project. Cameco added that these upgrades are expected to have benefits to the environmental protection around the PHCF. CNSC staff submitted that Cameco must adhere to the environmental assessment (EA) follow-up commitments described in the comprehensive study report for the Vision 2010 project (former name of VIM), and added that Cameco has developed a specific environmental monitoring plan to monitor the impact of the VIM project on the environment in the vicinity of the PHCF. The plan is focused on the potential environmental effects of the project, including airborne particulate, radioactive constituents associated with uranium and radium-226 particulates, and noise.</p>
100.	<p>Referring to the list of contaminants of primary concern submitted in the intervention by LOW, the Commission asked whether all of these have been monitored and considered in the risk assessment. CNSC staff explained that the method for including potential contaminants in the list is considered a risk assessment process. The Cameco representative confirmed that all potential contaminants from the submitted list were monitored, and noted that their reports were focused on specific ones that are primary contaminants of concern. The LOW representative submitted that monitoring of the contaminants of primary concern, even though conducted by Cameco, had not been reflected in the LCH where only uranium had been addressed. CNSC staff submitted that the LCH did not include the list of things that do not need monitoring because they were not risk significant or monitoring of other constituents was an appropriate surrogate. According to CNSC staff, a way to move towards increasing transparency was the application of appropriate CSA standards for environmental monitoring and for effluent monitoring, which includes steps to document how that selection process of constituents of potential concern has been conducted. CNSC staff added that the PHCF would be compliant with such standards by the end of year 2017, which should generate more publicly available results.</p>
101.	<p>The MBQ, in its intervention, expressed concerns about spills and soil contamination and recommended more frequent and deeper sampling for the monitoring of long-term effects of contamination. The Commission enquired about the possibility for recommended increase of monitoring. The Cameco representative described various methods, including source monitoring and ambient monitoring, used to monitor both the short-term and long-term effects encompassed by Cameco's comprehensive environmental monitoring program around the PHCF. Soil sampling is one component of ambient monitoring. The Cameco representative added that there was no record of significant accumulation of uranium in the soils in Cameco's clean soil area, located by the waterworks, which is in a cleaned area and will be used as a baseline for future operations. This result is also an indication that the current PHCF operations are not causing any accumulation of uranium in soils. CNSC staff confirmed that there have not been any observable increases in soil contamination attributable to the PHCF operations, and noted that the VIM project would provide an opportunity to revisit Cameco's soil monitoring program and to adjust it as appropriate. CNSC staff</p>

	explained that deeper sampling, at 60 cm, had been applied earlier, but had been replaced with 15 cm sampling in order to avoid potential influence of legacy contamination on the monitoring of the current impact of PHCF operations.
102.	The MBQ also expressed concerns regarding the impact of temperature fluctuations to aquatic biota caused by releasing cooling water from the facility into the environment. The Commission invited ECCC to comment. The ECCC representatives submitted that ECCC had reviewed studies done by Cameco and was satisfied with the work done to evaluate the effects of thermal impact. The ECCC representatives added that there was some uncertainty for winter seasons, which would require further monitoring, and that ECCC continues to work with Cameco and CNSC to resolve this issue. The Cameco representative added that they have cooling water discharge limits compliant with both federal and provincial guidelines. CNSC staff confirmed that these discharges were continuously monitored, and that the exceedances mentioned by the intervenor were limited spatially to around the mouth of the discharges. The concern about thermal impact potentially affecting the Ganaraska River was not confirmed by monitoring data.
	<i>3.9.4 Environmental Risk Assessment</i>
103.	CNSC staff informed the Commission that they had reviewed and accepted Cameco's revised ERA. Cameco has committed to address ERA conclusions and recommendations and to implement the updated specifications of CSA standards N288.4-10, <i>Environmental Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills</i> , and N288.5-11, <i>Effluent Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills</i> , by December 2017.
	<i>3.9.5 Conclusion on Environmental Protection</i>
104.	Based on the assessment of the application and the information provided at the hearing, the Commission is satisfied that, given the mitigation measures and safety programs that are in place to control hazards, Cameco will provide adequate protection to the health and safety of persons and the environment.
105.	The Commission encourages Cameco to make available to the public, data on contaminants of primary concern and requests that CNSC staff report on the status of public disclosure by Cameco as part of the annual <i>Regulatory Oversight Reports</i> .
	3.10 Emergency Management and Fire Protection
106.	The Commission considered the emergency management and fire protection SCA that covers Cameco's measures for preparedness and response capabilities which exist for emergencies and for non-routine conditions at the PHCF. This includes nuclear emergency management, conventional emergency response, and fire protection and response. After evaluating the PHCF's performance in this SCA, CNSC staff rated it as

	satisfactory for the period 2012-2016.
	<i>3.10.1 Emergency Management</i>
107.	<p>Cameco informed the Commission that the emergency response organization at the PHCF is comprised of the local emergency response team, which deals with the event at the site level, and the divisional local crisis management team, which is supported by Cameco's corporate crisis management. Cameco added that the PHCF conducts a number of internal drills and training exercises to test the effectiveness of the site and the emergency response organization, and provided details on the types and number of drills completed at the PHCF between 2012 and 2016. Cameco further informed the Commission about the measures to prevent or mitigate the effects of accidental releases of nuclear and other hazardous substances at the PHCF. Cameco added that the PHCF maintains qualified emergency response personnel on-site, 24 hours a day when the facility is operating, and that during off-shift hours, additional emergency response personnel can be recalled to the site if required. Emergency preparedness and response training is provided on an ongoing basis.</p>
108.	<p>CNSC staff provided information about the results of their regulatory oversight and their assessment of post-exercise reports prepared by Cameco, and stated that the PHCF emergency preparedness plan documentation complies with current regulatory requirements. CNSC staff added that Cameco has committed to the full implementation of CNSC regulatory document REGDOC 2.10.1, <i>Nuclear Emergency Preparedness and Response</i>, by the end of 2017.</p>
109.	<p>The Commission sought clarification regarding some changes in the emergency management team and emergency medical teams during the licence period that have been mentioned in the intervention by United Steelworkers, Local 8562. The Cameco representatives responded that changes had been made to ensure that emergency medical team members, historically a group of volunteers, are available 24/7 throughout the PHCF operation. The change consisted of adding medical training to the qualifications of the security group. This group, which already has the skill set for fire and chemical response, is part of Cameco's emergency response team and is at the site all the time.</p>
110.	<p>The Commission invited submissions respecting the potential risk of seismic events to expose legacy contamination deposits, as expressed by the MBQ in its intervention. CNSC staff submitted that, in response to the CNSC letter requesting all operators of nuclear power plants and all major nuclear facilities to undertake a review of the lessons learned after the Fukushima event, to examine their safety cases and to report on the implementation of the corrective actions, Cameco had completed a review of its safety case and emergency preparedness and examined the consequences of a worst-case, beyond-design-basis event, such as an earthquake or a plane crash. The Cameco representative described the actions taken in response to the CNSC letter and stated that the structures within the PHCF were improved to comply with the most current codes and the strictest seismic requirements.</p>

	<i>3.10.2 Fire Protection</i>
111.	The Commission considered Cameco’s submission regarding the fire protection program established at the PHCF to prevent, mitigate and respond to fires. Cameco stated that the program meets the requirements of the <i>National Fire Code of Canada</i> , 2005, the <i>National Building Code of Canada</i> , 2005, and the National Fire Protection Association’s NFPA 801: <i>Standard for Fire Protection for Facilities Handling Radioactive Materials</i> . Cameco informed the Commission about the completed fire inspections that were carried out for every area of the facility, drills and annual third-party assessments and audits. Cameco also informed the Commission about an agreement between the PHCF and the Municipality through which Cameco provides the Port Hope Fire and Emergency Services with the necessary equipment and training to effectively respond to emergencies at the PHCF.
112.	CNSC staff informed the Commission of its monitoring of Cameco’s fire protection program and its implementation and reported on the 2016 compliance inspection that demonstrated that the implementation of the fire protection program meets regulatory requirements. CNSC staff’s review of Cameco’s annual third-party review reports of the inspection, testing and maintenance related to fire protection and of the proposed modifications to the facility indicate that the PHCF is meeting the requirements of the <i>National Building Code of Canada</i> , the <i>National Fire Code of Canada</i> and NFPA 801. CNSC staff further added that Cameco has committed to the full implementation of CNSC REGDOC 2.10.1, and to the full implementation of CSA N393-13, <i>Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances</i> , by the end of 2017.
	<i>3.10.3 Conclusion on Emergency Management and Fire Protection</i>
113.	After considering the above information, the Commission concludes that the fire protection measures and emergency management preparedness programs in place, and that will be in place, at the facility are adequate to protect the health and safety of persons and the environment.
	3.11 Waste Management
114.	The Commission considered the PHCF’s site-wide waste management program. CNSC staff evaluated Cameco’s performance with regards to waste minimization, segregation, characterization, and storage, and rated it as satisfactory for the period 2012-2016.
115.	Cameco informed the Commission about three aspects of the PHCF waste management program and presented the activities performed during the current licence period. These aspects encompass the routine management of radioactive, conventional, hazardous and mixed waste, the clean-up program, and the decommissioning strategy and

	<p>planning. Cameco provided details of the waste management plan that describes the management of waste throughout its lifecycle and includes waste generation, storage, processing, recycling and removal/transfer to an appropriate waste management or other facility. Cameco also described the Clean-up Program (CUP) responsible for the removal of obsolete buildings, equipment and materials for the purpose of reducing environmental liabilities, creating useable space and improving the appearance of the PHCF. CNSC staff verified, through a combination of regulatory oversight activities and on-site visits, Cameco's CUP project and concluded that this project has been conducted safely.</p>
116.	<p>Cameco further informed the Commission that the VIM project was expected to be implemented during the proposed licence period in conjunction with the PHAI. Cameco also described a plan to dispose of its legacy waste materials. Cameco added that the PHCF intends to implement during the next licence period the relevant aspects of CSA standards N292.3-14, <i>Management of low- and intermediate-level radioactive waste</i> and N292.0-14, <i>General principles for the management of radioactive waste and irradiated fuel</i>. Cameco has committed to implement these standards for active waste starting in September 2017.</p>
117.	<p>CNSC staff reported that Cameco has an acceptable waste management program and informed the Commission about the inspections of Cameco's waste management practices, including the maintenance of waste inventories. CNSC staff stated that radiological criteria have been established for classifying waste and that all waste generated at the PHCF is packaged and stored pending final disposal. Contaminated combustible waste was packaged and shipped to Cameco's Blind River Refinery for incineration, while all non-contaminated solid waste was recycled or disposed of at a local municipal landfill site in accordance with the waste management program. Waste generated prior to 1988 will be transported to the Port Hope Project long term waste management facility (LTWMF) that is currently under construction and managed by the Canadian Nuclear Laboratories (CNL). This activity is part of the VIM project. While waste placement activities at the LTWMF are expected to begin in 2018, the Commission was informed that the precise schedule will not be established until construction activities are near completion.</p>
118.	<p>Several intervenors expressed concerns regarding the management of waste generated in the PHCF and the VIM project activities, and its reduction, decontamination and disposal. The Commission enquired about the possibility of decontamination of used metal components and on the controls that are applied. The Cameco representative responded that all of the scrap metal released from the facility was decontaminated by various processes available on-site. Before leaving the facility, the metal is scanned to make sure that the residual activity is below the clearance levels defined in the <i>Nuclear Substances and Radiation Devices Regulations</i>⁹. CNSC staff explained the basis for these clearance levels and stated that they are aligned with internationally accepted practice allowing material to be removed from regulatory control.</p>

⁹ S.O.R. 2000-207.

119.	Based on the above information and considerations, the Commission is satisfied that Cameco is safely managing waste at PHCF and looks forward to being provided with a more precise estimate of the timetable for the disposal of the waste.
	3.12 Security
120.	Security covers the programs required to implement and support the security requirements stipulated in the regulations and the licence. This includes compliance with the applicable provisions of the <i>General Nuclear Safety and Control Regulations</i> ¹⁰ and the <i>Nuclear Security Regulations</i> ¹¹ . CNSC staff rated Cameco's performance in this SCA as satisfactory for the period 2012-2016.
121.	The Commission considered Cameco's security plan that includes an overview of the security operations at the PHCF and identifies the systems and processes in place to meet the security program objectives. Cameco stated that, during the licence period, CNSC staff conducted four security compliance inspections, and that the findings and recommendations resulting from these inspections have been used to improve the overall security program at the PHCF. Cameco conducts a security readiness test annually for PHCF security personnel, and exercises are carried out with the Port Hope Police Service. Cameco noted that Cameco is in the process of renewing its Memorandum of Understanding with the Port Hope Police Service.
122.	CNSC staff reported that Cameco satisfactorily maintains security systems and devices for the PHCF and confirmed that Cameco has established a response protocol with the Port Hope Police Service to ensure proper response of armed police officers in a timely manner if needed. CNSC staff informed the Commission about its inspections of the physical protection program implementation. CNSC staff finds that security measures for controlling access to on-site radioactive source locations are satisfactory and comply with CNSC regulatory requirements. CNSC staff added that that it will monitor Cameco's implementation of REGDOC 2.12.3, <i>Security of Nuclear Substances: Sealed Sources</i> , published in May 2013, through CNSC regulatory oversight activities.
123.	Based on concerns expressed by some intervenors regarding physical security measures at the facility and the potential that some loose legacy material could be stolen and used for terrorist activities, and after having heard interventions from some PHCF employees with opposite opinions, the Commission sought more information regarding these concerns. An intervenor, a security supervisor at the PHCF, explained the security measures at the site and stated that the materials present at the facility are secure to the highest level. CNSC staff confirmed that the measures in place at the PHCF meet regulatory requirements. The implementation of these measures is inspected annually by security inspectors.

¹⁰ SOR/2000-202

¹¹ SOR/2000-209

124.	The Commission is satisfied that Cameco's performance with respect to maintaining security at the facility has been acceptable. The Commission concludes that Cameco has made adequate provision for the physical security of the facility and is of the opinion that Cameco will continue to adequately provide for it during the proposed licence period.
	3.13 Safeguards
125.	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 safeguard 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 are no undeclared nuclear material or activities in this country. The Commission considered the effectiveness of Cameco's implementation of safeguards measures and non-proliferation commitments related to the licensed activities at the PHCF. CNSC staff evaluated the PHCF's performance in this SCA and rated it as satisfactory for the period 2012-2016.
126.	Cameco informed the Commission that the company complies with IAEA document SG-SGOB-3105: <i>Integrated Safeguards Procedure</i> for conversion and fuel fabrication, and that the PHCF maintains separate inventories for natural, depleted and enriched uranium. All receipts and shipments are recorded and uranium accountability controls and practices are in place. Monthly inventory reports are submitted to the CNSC as per the requirements of CNSC regulatory document RD-336: <i>Accounting and reporting of nuclear material</i> . Cameco also informed the Commission of periodic audits of the inventory system that are conducted by the IAEA, the CNSC and by Cameco internal auditors.
127.	CNSC staff reported that, during the current licence period, the IAEA conducted 26 inspections, 13 of which with CNSC staff participation, and that CNSC staff also performed independent safeguards evaluations. CNSC staff noted that there were no reportable events or action notices issued as a result of these inspections. CNSC staff confirmed that, in all cases, Cameco provided the IAEA and CNSC staff with the necessary access and assistance to perform their activities, and complied with all regulatory requirements.
128.	Based on the above information, the Commission is satisfied that Cameco has provided for, and will continue to provide for, adequate measures in the areas of safeguards and non-proliferation at the PHCF that are necessary for maintaining national security and measures necessary for implementing international agreements to which Canada has agreed.

3.14 Packaging and Transport	
129.	The packaging and transport SCA covers the safe packaging and transport of nuclear substances and radiation devices to and from the licensed facility. The licensee must adhere to the <i>Packaging and Transport of Nuclear Substances Regulation, 2015</i> ¹² and the <i>Transportation of Dangerous Goods Regulations</i> ¹³ for all shipments leaving the facility. The Commission considered the PHCF packaging and transport program that covers elements of package design, package maintenance, and the registration for use of certified packages.
130.	<p>CNSC staff reviewed the following specific areas encompassed by this SCA:</p> <ul style="list-style-type: none"> • Packaging and transport • Package design and maintenance • Registration for use <p>After evaluating the PHCF's performance in this SCA, CNSC rated it as satisfactory for the period 2012-2016.</p>
131.	Cameco described the PHCF procedures related to the handling, storing, loading, transport and receipt of nuclear substances and other dangerous goods. Cameco also described the production, packaging and transport of UO ₂ and UF ₆ to domestic and overseas customers. Cameco explained the packaging and transport of other radioactive materials such as laboratory samples, other uranium materials, fluoride by-products, ammonium nitrate and waste. Cameco explained that, if required by the <i>Nuclear Non-proliferation Import and Export Control Regulations</i> ¹⁴ , an import or export licence is obtained from the CNSC prior to shipment and corresponding import or export permits are also obtained from Global Affairs Canada.
132.	Cameco informed the Commission about two minor traffic accidents and two labelling/placarding errors that occurred during the current licence period. CNSC staff had been notified of these four occurrences; however, none of these was reportable under the <i>Packaging and Transport of Nuclear Substances Regulations, 2015</i> . Cameco stated that these events had been investigated, corrective actions put into place, and that no environmental impacts occurred as a result.
133.	CNSC staff informed the Commission about its evaluation of the packaging and transport program implemented at the PHCF. CNSC staff reported having verified records pertaining to the inspection of packages that are maintained by Cameco, and found them to be compliant with CNSC regulatory requirements. CNSC staff further informed the Commission that it conducted, in 2013, an inspection of Cameco's

¹² SOR/2015-145

¹³ SOR/2001-286

¹⁴ SOR/2000-210

	packaging and transport activities, and that no significant findings were noted during the inspection. CNSC staff confirmed that there were no reportable events related to the packaging and transport SCA during the current licence period.
134.	Based on the above information, the Commission is satisfied that Cameco is meeting regulatory requirements regarding packaging and transport.
	3.15 Application of the <i>Canadian Environmental Assessment Act</i>
135.	Cameco submitted that a comprehensive study-type EA had been completed under the <i>Canadian Environmental Assessment Act</i> (CEAA 1992) with the CNSC as the responsible authority for the Vision 2010 project, which has been subsequently rebranded VIM. The environmental impact statement and supporting documentation was submitted by Cameco in December 2010. The Commission concluded, in its recommendation to the federal Minister of the Environment, that the Vision 2010 project was not likely to result in significant adverse environmental effects, taking into account the implementation of mitigation measures identified during the EA. The Minister referred the Comprehensive Study Report back to the CNSC as a responsible authority for licensing.
136.	<p>CNSC staff reported having conducted an EA under the <i>Nuclear Safety and Control Act</i> (NSCA) for this licence renewal. The <i>Environmental Assessment Report</i> released in September 2016 includes, among others, the following findings:</p> <ul style="list-style-type: none"> • Cameco’s environmental protection programs meet CNSC regulatory requirements. • Cameco’s ERA assessed the potential environmental (ecological and human health) effects from the PHCF emissions and is in compliance with CSA standard N288.6-12. • The results of the CNSC’s IEMP confirm that the public and the environment in the vicinity of the PHCF site are protected from the releases of the facility.
137.	The Commission considers the environmental review that was conducted by CNSC staff to be acceptable and thorough.
138.	The Commission is satisfied that, given the mitigation measures and safety programs that are in place to control hazards, Cameco provides adequate protection to the environment and that the environment will be protected in the renewed licence period.
139.	The Commission notes that the NSCA provides a strong regulatory framework for environmental protection. Whether an EA 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 Vision in Motion Project	
140.	Cameco informed the Commission about the activities to be carried out as part of the VIM project that include demolition, excavation and construction activities, as well as the transport and disposal of contaminated and non-contaminated materials. These activities are sought under the requested renewed licence.
141.	Cameco further informed the Commission that a legal agreement between the Government of Canada and the two host municipalities establishing the PHAI specifies that approximately 150,000 m ³ of Cameco decommissioning waste materials arising at the PHCF and other specified locations are to be accommodated in the LTWMF which is being constructed in the Municipality ¹⁵ . This agreement provides Cameco with a limited time to transport waste for storage at the LTWMF. Cameco noted that the VIM project would require effective coordination with the PHAI to ensure success.
142.	Cameco provided details regarding the scope, schedule, controls and expected outcomes of the VIM project, and has requested that the operating licence for the PHCF specifically provides the authorization for the PHCF to engage in clean-up, decontamination, demolition and remediation activities (including VIM).
143.	CNSC staff stated that, should the licence request be approved by the Commission, the planned clean-up, remediation and renewal work at the PHCF, including the implementation of the VIM project, would be carried out in accordance with CNSC regulatory requirements.
144.	The Canadian Association of Nuclear Host Communities (CANHC) and the Municipality of Clarington, in their intervention, supported the PHCF licence renewal for a period of ten years and submitted a peer-reviewed report (commissioned and financially supported through the CNSC Participant Funding Program (PFP)) on Cameco's application with suggestions and recommendations mainly focused on the VIM and PHAI activities. The recommendations included a request for clarification of some technical issues related to groundwater management and remediation, transport of waste, as well as a request for greater coordination between Cameco, CNL, the Municipality of Port Hope, and in general between the VIM project and PHAI. The recommendations further included a request that the CNSC require that Cameco obtain a Record of Site Condition for its lands or any Cameco lands to become publicly accessible, where Cameco is not using PHAI residential/parkland criteria and risk-based criteria are instead proposed to be used. The Municipality also requested to be informed and have a say in the final clean-up levels for remediated areas. The Municipality also recommended that Cameco and the CNSC provide regular updates of Cameco's progress to the Municipality. Requested by the Commission to respond to the recommendations submitted by the CANHC related to technical and transport activities, Cameco representatives responded that they agree with the

¹⁵ The Commission visited the sites of the PHAI and VIM activities on November 8, 2016. The visit included a tour of the Port Granby and Port Hope (LTWMF) waste facilities.

	recommendations.
145.	<p>The Commission sought clarification regarding the application of the clean-up criteria for Cameco's lands to become publicly accessible, as well as for the Municipality lands. Representatives from Cameco confirmed that Cameco intends to use a risk-based approach on the land in question outside of the fence line property, and noted that a risk assessment in a particular area would be conducted to ensure that the radiation and contamination levels after the clean-up are safe for the public and the environment, as opposed to a very specific limit that has been proposed and is in discussion for the PHAI. The Cameco representatives further explained that specifics regarding the criteria to be applied for the clean-up of this particular area stem from the fact that this area has a number of complications associated with deep excavation, including issues related to the stability of harbour walls. As a consequence, the proposed remediation plan, which has been supported by the CNSC, the MOECC and ECCC, proposes that risk-based criteria be applied for this area of the site. The Cameco representative added that Cameco's understanding was that it would work to obtain a Record of Site Condition to ensure that the land remains safe for public use and for the environment. CNSC staff explained that, in Ontario, any property that undergoes a land use change triggers provincial regulatory requirements that, in this case, include a Record of Site Condition with its additional criteria. CNSC staff pointed out that there are overlapping requirements from different jurisdictions, and that Cameco would have to abide by the most conservative one. A representative from ECCC agreed with CNSC staff's opinion.</p>
146.	<p>Asked for their opinion on some modifications in the scope of the VIM project, the representatives of the CANHC responded that they were satisfied that, with the proposed modifications, the process would be done more efficiently, considering that a longer-term clean-up and remediation would be done.</p>
147.	<p>The representatives of the CANHC expressed their expectation to be provided with more information, and their wish to participate in decision-making related to the harbour remediation activities. The representative of the Municipality added that the Licence Condition Handbook (LCH) could strengthen the role of the Municipality in these activities. The Cameco representative submitted that Cameco has had extensive communication and cooperation with the Municipality over many years, and will do what is necessary to make sure that the Municipality and the legal representatives of the Municipality are well informed. The Cameco representative added that a new protocol in the form of tripartite regular meetings with management and key staff from Cameco, the PHAI and the Municipality had been established. CNSC staff noted that the CNSC mandate is not to oversee contractual agreement and submitted that CNSC staff recognizes the role of the Municipality in the remediation projects. However, the Commission agrees with CNSC staff that CNSC staff should not include a reference to the Municipality in the LCH. The Commission's mandate is not a shared one.</p>
148.	<p>CNL, in its intervention, supported Cameco's application, provided details about the PHAI and explained the relationship between the PHAI and the VIM project. CNL</p>

	<p>submitted that the PHAI is a federal initiative to implement safe local, long-term solutions for the remediation of historic low-level radioactive waste originating from a former Crown corporation, Eldorado Nuclear, in the Municipalities of Port Hope and Clarington. In each community, the waste will be consolidated into new long-term waste management facilities. In Clarington, the new facility began receiving waste on November 1, 2016, while the Port Hope facility, LTWMF, is under construction and scheduled to open in 2018. The PHAI and the VIM project are being executed in parallel, as both involve work in the harbour on the Centre Pier and the West Beach areas of Port Hope, and the remediated waste from both projects will be placed in the LTWMF. CNL added that the cooperation between the PHAI and VIM teams has resulted in the development of a number of agreements that define responsibilities and the associated cost sharing.</p>
149.	<p>The Commission enquired whether the two sides had established a binding dispute resolution mechanism to resolve potential disagreements. The CNL representative responded that there was no specific binding dispute resolution mechanism established between Cameco and the PHAI, and that, instead, the two sides have specific legal agreements to deal with specific items in terms of work sharing and cost sharing.</p>
150.	<p>The Commission considered a timeframe for the VIM project and whether the transfer of waste to the LTWMF could be finalized within a requested 10-year licence period. Representatives from both Cameco and CNL noted that the volume of waste coming from the VIM project represents a small portion of the waste coming from other components of the PHAI, and expressed their confidence that the transfer of waste from the VIM project could be completed by 2022, as scheduled. The Commission enquired how accurate was the estimate of 150,000 m³ of Cameco decommissioning waste materials to be accommodated in the LTWMF. The Cameco representative responded that Cameco did not expect to exceed the estimated volume of waste.</p>
151.	<p>The Commission enquired about the potential risks that could arise from a complex interaction between CNL, PHAI and Cameco at this phase of the remediation initiative. The Cameco representatives provided details on a risk assessment and a study conducted to ensure that the project would not have any adverse impact on the public and the environment. Cameco expressed the view that, based on the study and results of already completed smaller scale demolition and cleaning activities, Cameco has the ability to conduct all planned activities.</p>
152.	<p>Several intervenors, including LOW and the MBQ, expressed concerns regarding the impacts of the VIM project on local waterbodies and about the apparent lack of information regarding the monitoring of potential contamination of Lake Ontario caused by remediation activities in the harbour. The Commission enquired whether the existing pumping and water treatment system would have sufficient capacity to process an increased volume of contaminated water produced during the VIM project. The Cameco representative responded that Cameco has already increased its capacity to treat and recover contaminated water from the site, and that they intend to further enhance the current level of protection and capture additional amount of water by</p>

	installing additional pump and treat wells.
153.	Multiple intervenors expressed concerns with respect to the historic waste management and transfer of drums of historic uranium-bearing waste, which are under International Atomic Energy Agency (IAEA) safeguards requirements to the LTWMF. The Commission asked whether the IAEA would be involved in this potential transfer. CNSC staff confirmed that the IAEA had confirmed that it will be involved in this activity through verification that the transfer is done as declared.
154.	The Commission referred to concerns of several intervenors that implied that the MOECC was not sufficiently overseeing these activities, and enquired about the role of the MOECC in the VIM project. A representative from the MOECC responded that the MOECC role would be to review the groundwater monitoring data as the clean-up continues, and to ensure that appropriate measures are in place to protect or limit discharges to the harbour. Some activities related to changes to the storm water management systems will also require an environmental compliance approval from the MOECC. The MOECC representative added that they will be monitoring the effectiveness of the groundwater pump and treat system. The Commission further enquired whether the MOECC was satisfied with the monitoring of the information and whether the MOECC measure and publish some of the observations in terms of environmental impacts. The MOECC representative responded that the MOECC conducts regular inspections of the facility and performs technical reviews of the groundwater and service water monitoring. The MOECC technical staff prepares memos regarding those reviews on an annual basis. These memos are not published, but are available upon request.
155.	Citing the concerns regarding ammonia pollution of the waters surrounding the PHCF, as expressed in the intervention by the MBQ, the Commission enquired about the impact of the VIM project on this issue. CNSC staff submitted that, although some aspects of the modelling were still to be tested and confirmed, the quality of water in the harbour is expected to improve as a result of the improvements implemented through the VIM project. CNSC staff noted that the water in the harbour, with respect to ammonia and fluoride, is already clean based on accepted criteria. CNSC staff added that the PHAI and VIM project will include augmented environmental monitoring requirements to ensure that the planned activities will be conducted in an appropriate way and that the surrounding environment is safe during the conduct of those activities.
156.	The Restore the Port Hope West Beach Committee, in its intervention, presented its <i>Port Hope West Beach Restoration Proposal</i> , and informed the Commission about the way the activities associated with the VIM project and the PHAI were affecting their proposal for beach restoration. The intervenor also stated that Cameco had not properly informed the public about the scope of their activities in the West Beach area. The intervenor suggested that the Commission order Cameco to obtain public approval for the expansion of activities in the West Beach area and to improve its public engagement process.

157.	<p>The Commission sought more information regarding the ownership of the land in the West Beach area where Cameco intends to conduct proposed works, including the expansion of the Ring Road, as was indicated by the intervenor. The Commission also enquired whether the intended road extension would require an EA. The Cameco representative explained that the road had been designed as a municipal road built on the municipal property and paid by Cameco. Cameco noted that the VIM project has been from its inception extensively presented to the public. The Cameco representative further explained that the arguments and supporting conceptual drawings presented by the intervenor show the earlier concept of the area, including the Ring Road, and do not represent the actual state. The Cameco representative stated that the development of the VIM project included a lot of consultation, and that the project meets primary objectives that had been established by the Municipality and are documented in the Consolidated Waterfront Master Plan. The Cameco representative reiterated that Cameco has legal agreements with the Municipality that includes the construction of the road. The Cameco representative added that, after completion of the VIM project, about 20% of the waterfront land that Cameco occupies currently would be returned to municipal or public use. Representatives from the Municipality provided an insight to technical problems that had to be solved with respect to the remediation of the area and pointed out the important role that Cameco had to perform in resolving these problems. The representatives from the Municipality submitted that, for the works that need to be performed in the area in question, a provincial EA needs to be done, and that the Municipality would look to the MOECC for assistance in that regard.</p>
158.	<p>The Commission further enquired about the role of the CNSC in these aspects of the VIM project. CNSC staff explained that the discussed activities regarding the issues around the West Beach area are outside of the footprint of any licensed activity that would be considered under the CNSC licence for the PHCF, and that most of them could be addressed through the PHAI. CNSC staff added that the option that had been chosen for the remediation activities through the VIM project had already been included in the EA that had been originally performed. Any additional remediation work, beach area and additional road would have to go through the approval process and the CNSC would assess the project proposal and make a determination on which type of EA would be required and if it involved the CNSC. CNSC staff further stated that everything that had been proposed in this licence application had been assessed in the comprehensive study and subsequently in the EA under the NSCA report that is appended to CNSC staff's submission to the Commission. The interactions between Cameco, PHAI, the Municipality and the intervenor are outside the scope of this licence renewal. The Commission nonetheless encourages all involved to cooperate and share information with a view to finding resolutions to these issues.</p>
159.	<p>The Commission requests to be updated on the progress of the VIM project related activities on a regular basis. In addition, the Commission requests that Cameco present a report regarding the progress of the VIM project activities approximately two years after the first shipment of Cameco's waste materials to the CNL waste storage site (LTWMF). This report will be presented to the Commission at a public proceeding open to public participation.</p>

	3.17 Authorization under the <i>Fisheries Act</i>
160.	Cameco informed the Commission that the PHCF had completed a self-assessment related to the cooling water intake from Lake Ontario to determine if a <i>Fisheries Act</i> authorization was required. The results had indicated that much less than one kilogram per year of fish was lost to the ecosystem with the existing cooling water operation and mitigation in place, which should be considered as low potential impact. Therefore, an authorization would not be required. Cameco submitted the results of the self-assessment to CNSC staff for review. Cameco noted that it would work with CNSC staff to ensure that regulatory requirements in this area continue to be met.
161.	CNSC staff, in its submission, confirmed that Cameco had prepared and submitted the self-assessment of ongoing fish impingement and entrainment studies as a result of the PHCF operation. CNSC staff stated that it was reviewing Cameco's self-assessment to determine the need for a <i>Fisheries Act</i> authorization for the PHCF.
162.	One of the issues raised in the intervention submitted by LOW was related to the PHCF's compliance to the <i>Fisheries Act</i> . LOW submitted that information regarding this issue was not publically available and recommended that Cameco's self-assessment report and CNSC staff's review of it be publicly accessible once completed. The Commission enquired about the status of this process. CNSC staff responded that, after reviewing the report, they requested additional information and clarification of some elements. Clarification was sought for some of the sampling program elements and on how Cameco came to the conclusion that it does not need an authorization based on the numbers and speciation. These clarifications were expected by mid-December 2016. CNSC staff's view is that the information could be accessible to the public upon completion of the process.
163.	The Commission directs Cameco and CNSC staff to make the requested information on the self-assessment report and CNSC staff's review of this report available to the public as appropriate.
	3.18 Aboriginal Engagement and Public Information
164.	CNSC staff informed the Commission that the CNSC made available up to \$50,000 through its PFP to assist members of the public, Aboriginal groups, and other stakeholders in providing value-added information to the Commission through informed and topic-specific interventions. Based on recommendations from the Funding Review Committee, independent from CNSC staff, the CNSC awarded participant funding for a total amount of \$56,279.68 to the following recipients, who were required to submit a written intervention and make an oral intervention at the Commission's public hearing:

	<ul style="list-style-type: none"> • Mohawks of the Bay of Quinte • Lake Ontario Waterkeeper • Canadian Association of Nuclear Host Communities (CANHC) • Restore the Port Hope West Beach Committee
	<i>3.18.1 Aboriginal Engagement</i>
165.	The common law duty to consult with Aboriginal peoples applies when the Crown contemplates action that may adversely affect established or potential Aboriginal and/or treaty rights. The CNSC, as an agent of the Crown and as Canada’s nuclear regulator, recognizes and understands the importance of building relationships and engaging with Canada’s Aboriginal peoples. The CNSC ensures that all of its licensing decisions under the NSCA uphold the honour of the Crown and consider Aboriginal peoples’ potential or established Aboriginal and/or treaty rights pursuant to section 35 of the <i>Constitution Act, 1982</i> . ¹⁶
166.	Cameco informed the Commission that it had included the Chiefs of the five First Nations bands nearest to the PHCF and the Métis Nation of Ontario on its mailing list to ensure Aboriginal stakeholders are aware of all community forums and other community events. Cameco added that, during the preparation for this licence renewal application, it contacted other identified Aboriginal groups outlining the significant planned activities and the length of the licence term, and invited them to a meeting. None of the groups identified expressed interest in the proceedings or to meeting with Cameco.
167.	CNSC staff reported that it had identified First Nation and Métis groups who may have an interest in the proposed licence renewal and provided them with information regarding the proposed licence renewal, the availability of participant funding and details on how to participate in the Commission’s public hearing process. CNSC staff confirmed that no issues have been raised by identified First Nation and Métis groups. Since Cameco did not propose any changes to its operations, CNSC staff is of the opinion that this licence renewal application will not cause incremental adverse impacts to any potential or established Aboriginal or treaty rights, and that the decision before the Commission does not raise the duty to consult.
168.	The Commission enquired about a formal process to keep the surrounding community better informed about events, spills, and other effects of the PHCF operation, as requested in the intervention submitted by the MBQ. The representatives from Cameco reiterated elements of its public information activities and responded that Cameco posts on its website unusual events or events that are reported the Provincial Spills Action Centre. To address some expressed concerns, CNSC staff submitted that there is no regulatory requirement on notification by entities transporting material, both for security and for practical reasons. CNSC staff added that the MBQ had identified a number of different items of interest to them, and that CNSC staff will continue to

¹⁶ *Constitution Act, 1982*, Schedule B to the *Canada Act 1982*, 1982, c. 11 (U.K.).

	work with them and Cameco to make sure that the MBQ is getting the information in a timely manner so that they can be part of the process.
169.	The Commission acknowledges the efforts made by CNSC staff 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 increased adverse impacts to any potential or established Aboriginal or treaty rights, and that the engagement activities undertaken for this licence renewal were adequate, given that no changes to the licensed activities have been requested ¹⁷ .
	<i>3.18.2 Public Information</i>
170.	A public information program is a regulatory requirement for licence applicants and licensed operators of Class I nuclear facilities. Paragraph 3(j) of the <i>Class I Nuclear Facilities Regulations</i> ¹⁸ requires that licence applications include “the proposed program to inform persons living in the vicinity of the site of the general nature and characteristics of the anticipated effects on the environment and the health and safety of persons that may result from the activity to be licensed”.
171.	Cameco informed the Commission of its public information program (PIP) that outlines the anticipated effects of the continued operation of the PHCF on the environment and the health, safety and security of the community. Cameco provided a detailed description of different kinds of information and documents presented to the community through the PIP. Cameco added that social media had been added to the internet sites and classic media used to present information on local operations to the community. Cameco further informed the Commission about its continued activity to measure public opinion in Port Hope and determine the effectiveness of its PIP. The data collected for the period 2012-2016 by a third party indicate that 84% to 89% of the public supports Cameco’s operations at Port Hope.
172.	CNSC staff reported that Cameco has a robust public information program and disclosure protocols for its PHCF that is in accordance with CNSC regulatory document RD/GD 99.3, <i>Public Information and Disclosure</i> . CNSC staff added that Cameco had disclosed information on unplanned events at the PHCF in accordance with its public disclosure protocol, and that Cameco also posts its quarterly and annual compliance reports on its public website. CNSC staff noted that Cameco had committed to make improvements to its PIP as suggested by CNSC staff in 2016. CNSC staff acknowledged the results of the annual public support survey presented by Cameco.
173.	As mentioned in the Environmental Protection section of this Record of Decision, several intervenors, including LOW and the MBQ, stated that there were several major information gaps that needed to be filled before the Commission render its decision,

¹⁷ *Rio Tinto Alcan v. Carrier Sekani Tribal Council*, 2010 SCC 43, [2010] 2 S.C.R. 650 at paras 45 and 49.

¹⁸ SOR/2000-204

	<p>and submitted four specific recommendations concerning the PHCF’s public information and disclosure programs. LOW recommended that Cameco’s webpage include, as a shortcut tab, precise incident reports with actual data of measured releases, with shown effluent release limits and action levels. The Commission invited Cameco and CNSC staff to comment on the implied lack of information. The Cameco representatives reiterated that the PHCF’s public information programs and disclosure protocols were in accordance with RD/GD 99.3 and were published on the company’s website for public review. CNSC staff noted that, under RD/GD-99.3, licensees are required to make public their public disclosure protocol; however, there is no requirement for them to publish the PIP details, because it contains information considered to be proprietary or of commercial value. With respect to LOW concerns, the Cameco representatives submitted that Cameco was working on redesigning the company’s website, and that they will look at improving the content so to include more complete information in the requested areas. With respect to real-time data, the Cameco representatives stated that they share that detailed information with CNSC staff and would look at the possibility to include the information, such as spill amounts, action levels or administrative levels, in their communications to the public. CNSC staff submitted that Cameco has a good reporting record. CNSC staff added that they report on spills through their regulatory oversight reports in public meetings. With respect to controls and action levels, these levels are visible in the PHCF LCH, and any action level exceedance is also reported to the Commission as a part of the annual regulatory oversight report.</p>
174.	<p>The Commission asked about the number of tours organized at the PHCF. The Cameco representative responded that a large number of general tours are organized for professional and community groups and members, in addition to the IAEA visits and inspections.</p>
175.	<p>Based on this information, the Commission is satisfied that Cameco’s public information program meets regulatory requirements and is effective in keeping Aboriginal communities and the public informed of facility plans and operations. The Commission encourages Cameco to continue to create, maintain and improve its dialogue with the neighbouring communities and to increase the comprehensiveness of the information provided to interested persons.</p>
176.	<p>Taking into account the complexity of the PHAI and VIM projects, their potential impact to the community and the environment, location and size of affected areas, as well as the impact of the continuous operation of the PHCF, the Commission recommends that Cameco and CNSC organize their activities related to public information so that there are continuous updates about the remediation, clean-up and decommissioning activities. The Commission requests that updates on the projects be provided in the annual regulatory oversight reports.</p>
	<p>3.19 Decommissioning Plans and Financial Guarantee</p>

177.	The Commission requires that licensees have operational plans for the decommissioning of facilities and long-term management of waste produced during the lifespan of the facility. In order to ensure that adequate resources are available for safe and secure future decommissioning of the PHCF site, the Commission requires that an adequate financial guarantee for the realization of the planned activities is put in place and maintained in a form acceptable to the Commission throughout the licence period.
178.	The Commission considered information about Cameco's Preliminary Decommissioning Plan (PDP), which had been prepared in accordance with CNSC regulatory guide G-219: <i>Decommissioning Planning for Licensed Activities</i> . The current financial guarantee, maintained in the form of two irrevocable letters of credit totalling \$101.7 million, reflects the PDP accepted by the Commission during the previous licensing proceedings. The PDP was updated in 2016 and accepted by CNSC staff, and as part of this process, the financial guarantee was re-evaluated in accordance with the criteria set out in CSA standard N294-09: <i>Decommissioning of Nuclear Facilities</i> , and CNSC regulatory guides G-219 and G-206: <i>Financial Guarantees</i> , to the new amount of \$128.6 million. If approved by the Commission, Cameco will increase one of its existing irrevocable letters of credit by \$26.9 million to cover the full amount of the financial guarantee, as determined through the updated PDP.
179.	CNSC staff noted that Cameco is required to maintain a decommissioning plan throughout the lifecycle of the PHCF and update it every five years. CNSC staff reported that the current PDP meets the requirements of CSA standard N294-09, <i>Decommissioning of Facilities Containing Nuclear Substances</i> , and CNSC regulatory guide G-219. CNSC staff added that it accepted the revised PDP submitted by Cameco in May 2016 and considers the proposed increased amount for the financial guarantee, totalling \$128.6 million in the form of a letter of credit, to be adequate for the decommissioning of the PHCF.
180.	The Commission sought more information regarding the decommissioning of the facility and enquired why the cost estimate has significantly increased, referring to the intervention submitted by the Canadian Coalition for Nuclear Responsibility, which expressed concerns about the management of the wastes that already exist and those that would be created during the area recovery activities, as well as associated technical and financial aspects. CNSC staff explained its regulatory oversight with regards to the PDP and the associated regulatory requirements. Licensees are required to update their PDPs at least every five years and to adjust the required financial guarantee amounts accordingly. CNSC staff added that, upon updating the PDP, the proposed increase amounts of the financial guarantee were a consequence of the activities planned for the next licence period that would result in an increase of waste that will be shipped to Blind River instead of being transported to the Port Hope Area LTWMF. The foreseen inflation has also been taken into account, as well as the increase in soil excavation required due to stricter clean-up standards for arsenic and uranium. Asked whether Cameco plans the end of life for this facility and whether such plans were included in the PDP, the Cameco representative responded that the PDP does not assume the end life of the facility and that Cameco was committed to long-term continued operations

	in Port Hope. The Cameco representative added that the detailed decommissioning plans were not yet established, and that the envisaged transport of waste to Blind River was covered in the Blind River PDP. If such facility needs to be built at the Blind River site, it would have to go through regulatory approvals. CNSC staff confirmed this statement by Cameco regarding the Blind River PDP and financial guarantee.
181.	Based on this information, the Commission considers that the preliminary decommissioning plans and related financial guarantee amounts and instruments are acceptable for the purpose of the current application for licence renewal. The Commission accepts the revised financial guarantee proposed by Cameco Corporation, provided that the financial instruments remain unchanged except for the increase in amount to \$128.6 M.
	3.20 Cost Recovery
182.	CNSC staff reported that Cameco is in good standing with respect to the <i>Cost Recovery Fees Regulations</i> ¹⁹ requirements with respect to the PHCF.
	3.21 Nuclear Liability Insurance
183.	CNSC staff submitted that Cameco has maintained nuclear liability insurance under the <i>Nuclear Liability Act</i> ²⁰ for the duration of the PHCF's current licence period and must continue to maintain nuclear liability insurance under the <i>Nuclear Liability and Compensation Act</i> ²¹ which came into force on January 1, 2017.
	3.22 Licence Length and Conditions
184.	Cameco requested the renewal of the current operating licence for a period of 10 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. CNSC staff also recommended that annual reports on the facility be provided for consideration by the Commission at public meetings. In making this recommendation, CNSC staff considered Cameco's operating experience and demonstrated compliance in carrying out the activities under the PHCF licence. CNSC staff reported that the PHCF performance in all SCAs remained stable or improved over the last 10-year period and noted that Cameco's Blind River Refinery facility located in Blind River, ON and the Cameco Fuel Manufacturing facility located in the Municipality of Port Hope, ON, operate safely under 10-year licences. CNSC staff added that annual regulatory oversight reports presented to the Commission at public proceedings allow for frequent public updates regarding licensee performance and CNSC regulatory

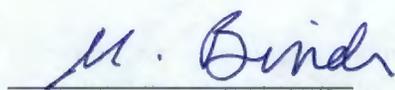
¹⁹ SOR/2003-212

²⁰ R.S.C., 1985, c. N-28

²¹ S.C. 2015, c. 4, s. 120

	oversight activities, including public participation.
185.	Within the requested 10-year licence period, Cameco expects to continue with current licensed operations and to carry out the VIM project. This project would make significant improvements to the PHCF site under the waste management and environmental protection programs at the facility.
186.	Several intervenors, including the Canadian Coalition for Nuclear Responsibility, objected to the proposed 10-year licence period and suggested shorter licence periods. LOW, in its intervention, suggested that the Commission either deny the requested licence or else grant an interim licence of no longer than one year, over which time more information could be gathered and submitted for public review. The suggestion was based on the argument that, in Cameco's application and CNSC staff submission, as well as in the available information related to the Port Hope licence renewal, there were several major information gaps that need to be filled up before the Commission render its decision, as was previously discussed in the Environmental Protection section of this Record of Decision.
187.	The Commission enquired about the regulatory focus areas for the next licence period. CNSC staff responded that, if approved, the important regulatory effort would be around the VIM project. Also, the CNSC has introduced a new human performance management licence condition, and as licensees start implementing those programs, monitoring compliance with those programs would be another area of focus for CNSC staff in the future.
188.	Based on the above information received during the course of this hearing, the Commission is satisfied that a 10-year licence is appropriate. The Commission accepts the licence conditions as recommended by CNSC staff. The Commission notes that CNSC staff can bring any matter to the Commission as applicable.
	4.0 CONCLUSION
189.	The Commission has considered the information and submissions of Cameco, CNSC staff 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.
190.	The Commission is satisfied that, given the mitigation measures and safety programs that are in place to control hazards, Cameco provides adequate protection to the environment.
191.	The Commission is satisfied that the applicant meets the requirements of subsection 24(4) of the <i>Nuclear Safety and Control Act</i> . 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.
192.	Therefore, the Commission, pursuant to section 24 of the <i>Nuclear Safety and Control Act</i> , renews the Nuclear Fuel Facility Operating Licence issued to Cameco Corporation for its Port Hope Conversion Facility located in Port Hope, Ontario. The renewed licence, FFOL-3631.00/2027, is valid from March 1, 2017, until February 28, 2027, unless suspended, amended, revoked or replaced.
193.	The Commission includes in the licence the conditions as recommended by CNSC staff in CMD 16-H8.
194.	The Commission considers the environmental review that was conducted by CNSC staff to be acceptable and thorough.
195.	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.
196.	With this decision, the Commission directs CNSC staff to report annually on the performance of the PHCF, as part of an annual <i>Regulatory Oversight Report</i> . CNSC staff shall present this report at a public proceeding of the Commission, where members of the public will be able to participate.
197.	The Commission encourages Cameco to make available to the public data on contaminants of primary concern and requests that CNSC staff report on the status of public disclosure by Cameco as part of the annual <i>Regulatory Oversight Reports</i> .
198.	The Commission requests that Cameco Corporation present a report regarding the progress of the VIM project activities approximately two years after the first shipment of Cameco's waste materials to the CNL waste storage site. This report will be presented to the Commission at a public proceeding with public participation.
199.	The Commission accepts the revised financial guarantee proposed by Cameco Corporation, provided that the financial instruments remain unchanged except for the increase in amount to \$128.6 M.
200.	The Commission removes the production limits and references associated with the north UO ₂ plant, as Cameco no longer produces uranium metals at this facility.



FEB 27 2017

Michael Binder
President,
Canadian Nuclear Safety Commission

Date

Appendix A – Intervenors

Intervenors	Document Number
Robert Neville	16-H8.2
Northumberland Hills Hospital Foundation, represented by R. Cunningham	16-H8.3
Hannibal Farola	16-H8.4
Jason Wakely	16-H8.5
Jean-Pierre Pascoli	16-H8.6
Vattenfall Nuclear Fuel AB	16-H8.7
Canadian Association of Nuclear Host Communities and the Municipality of Port Hope, represented by A. Foster, B. Sanderson and D. Hardy	16-H8.8 16-H8.8A
Dan Rudka	16-H8.10
Michael Azugy	16-H8.11
Anna Tullio	16-H8.12
Lou Rinaldi, MPP Northumberland-Quinte West	16-H8.13
Diane Flesch	16-H8.14
Douglas Blundell	16-H8.15
Town of Cobourg, represented by Mayor G. Brocanier	16-H8.16
Colin Deans	16-H8.17
Edward McNamara	16-H8.18
Lynda Kay	16-H8.19
Terry Verrydt	16-H8.20
Capital Theatre Heritage Foundation, represented by J. Joynt	16-H8.21
Northern Ontario School of Medicine, represented by D. Boreham and Dr. Thome	16-H8.22
Jeff Gilmer	16-H8.23
United Steelworkers, represented by C. Clarke	16-H8.24
Tyler Patfield	16-H8.25
United Steelworkers, Local 13173, represented by D. Parkin	16-H8.26
Bruce power, represented by J. Scongack	16-H8.27
Kevin Wharmby	16-H8.28
Mohawks of the Bay of Quinte, represented by N. Storms and K. Shipley from XCG Consulting	16-H8.29
Eugene Todd	16-H8.30
Restore the Port Hope West Beach Committee, represented by D. Berger, D. Smith and R. Ciano	16-H8.31 16-H8.31A
Laurie Bradley	16-H8.32
Habitat for Humanity Northumberland	16-H8.33
Canadian Nuclear Association, represented by J. Barrett	16-H8.34
Canadian Nuclear Workers Council, represented by D. Shier and C. Leavitt	16-H8.35
United Steelworkers - Local 8562	16-H8.36
Canadian Nuclear Laboratories, represented by C. Hebert	16-H8.37
Lake Ontario Waterkeeper, represented by P. Feinstein and W. Ruland	16-H8.38

Intervenors	Document Number
YMCA Northumberland	16-H8.39
Women in Nuclear Canada	16-H8.40
Port Hope Community Health Concerns Committee, represented by F. More and D. Rudka	16-H8.41
Canadian Coalition for Nuclear Responsibility, represented by G. Edwards	16-H8.42
North American Young Generation in Nuclear – Durham Chapter, represented by R. Mutiger, M. Mairinger, A. Baytekin, R. Rowat and M. Saliba,	16-H8.43
John Morand	16-H8.44
Anna Tilman	16-H8.45 16-H8.45A