



## **Oral presentation**

### **Submission from the Algonquins of Ontario**

In the Matter of the

#### **Canadian Nuclear Laboratories**

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Application for the renewal of the Nuclear  
Research and Test Establishment Operating  
Licence for the Chalk River Laboratories

#### **Commission Public Hearing**

**January 23-25, 2018**

## **Exposé oral**

### **Mémoire des Algonquins de l'Ontario**

À l'égard des

#### **Les Laboratoires Nucléaires Canadiens**

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Demande de renouvellement du permis  
d'exploitation d'établissement de recherche  
et d'essais nucléaires pour les Laboratoires  
de Chalk River

#### **Audience publique de la Commission**

**23-25 janvier 2018**





# Algonquins of Ontario

December 21, 2017

Louise Levert  
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**BY E-MAIL ONLY**

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Dear Ms. Levert,

**Subject: Submission of Written Comments on the Canadian Nuclear Laboratories (Chalk River Laboratories) – Application for the renewal of the Nuclear Research and Test Establishment Operating Licence (Our File CF 48-1-6)**

On behalf of the Algonquins of Ontario (AOO) thank you for the opportunity to provide our views on the Canadian Nuclear Laboratories (Chalk River Laboratories) application for the renewal of the Nuclear Research and Test Establishment Operating Licence.

**Algonquins of Ontario**

Algonquins have lived in present-day Ontario for thousands of years before the Europeans arrived. Today, the AOO are comprised of ten Algonquin communities. These include the Algonquins of Pikwakanagan First Nation, Antoine, Kijicho Manito Madaouskarini (Bancroft), Bonnechere, Greater Golden Lake, Mattawa/North Bay, Ottawa, Shabot Obaadjiwan (Sharbot Lake), Snimikobi (Ardoch) and Whitney and Area.

Based on a Protocol signed in 2004, these communities are working together to provide a unified approach to negotiate a modern-day Treaty.

Most Canadians are likely unaware that Parliament Hill not only sits within Algonquin Traditional Territory but on unceded Algonquin land. The House of Commons, the Senate and the Supreme Court of Canada make laws for all Canadians while situated on land that was never lawfully surrendered to the Crown, contrary to formal legal rules established as far back as 1763.

The AOO assert unextinguished and constitutionally protected Aboriginal rights and title to a traditional territory in Eastern Ontario (referred to as the "Settlement Area") and are currently in negotiations towards a modern-day Treaty with the governments of Ontario and Canada.

The AOO Settlement Area includes an area of more than 9 million acres within the watersheds of the Kitchissippi (Ottawa River) and the Mattawa River in Ontario, unceded territory that covers most of eastern Ontario, including Ottawa, and most of Algonquin Park. More than 1.2 million people live and work within the unceded AOO Settlement Area. There are 84 municipal jurisdictions fully and partially located within the unceded AOO Settlement Area, including 75 lower and single tier municipalities and 9 upper tier counties.

On October 18, 2016, the AOO and the Governments of Ontario and Canada reached a major milestone in their journey toward reconciliation and renewed relationships with the signing of the Agreement-in-Principle (AIP). The signing of the AIP is a key step toward a Final Agreement, and a modern-day Treaty, which will clarify the rights of all concerned and open up new economic development opportunities for the benefit of the AOO and their neighbours in the Settlement Area in eastern Ontario.

By signing the AIP, the AOO and the Crown have expressed in a formal way their mutual intention and desire for a lasting partnership. This event signalled the beginning of a new relationship between the AOO and the Crown, one in which the mistakes of the past must be supplanted by a new type of mutual respect and cooperation.

### **Review of the CNL (CRL) – Application for the renewal of the Nuclear Research and Test Establishment Operating Licence as it relates to the AOO**

The AOO have conducted a review of the Canadian Nuclear Laboratories (CNL) Licence Renewal Application for Chalk River Laboratories (CRL) as part of the Canadian Nuclear Safety Commission (CNSC) hearing process. CNL is applying to the CNSC to renew the “Nuclear Research and Test Establishment Licence” at CRL for a ten-year period from April 1, 2018 to March 31, 2028.

CRL is a nuclear research facility that is located along the southern shores of the Ottawa River (known in the Algonquin language as “Kitchissippi”) in the Town of Deep River. The facility covers an area of approximately 37 square kilometres and is home to several CNSC licensed nuclear facilities, including the National Research Universal reactor. CRL is one of the most advanced nuclear research laboratories in the world and works to develop applications for nuclear technology in medicine, science, engineering, power generation and nuclear waste management.

Our review focused on the interactions between CRL and the rights and interests of AOO members. The primary concern related to CRL was the lack of consultation or consent from Algonquin communities when CRL was originally constructed, as well as past impacts during previous licensing periods. Based on known land use and cultural heritage data, it is well-known that the CRL site is an area where Algonquin people have a longstanding and well-established record of historic and ongoing current use. Drawing on this knowledge, and based on AOO members’ constitutionally protected Aboriginal rights and title, AOO has considered a number of potential issues related to the rights and interests of AOO members in our review of the CRL licence application.

CRL, and the experimental nature of its operation, poses a significant risk to the environment, human health and the Aboriginal rights and title of Algonquin people. Impacts from CRL have affected Algonquin people since 1944 and will continue to do so well into the future. At the current time, no formal accommodation agreement exists between AOO and CNL. The results

of our review provide a series of comments and recommendations that CNSC and CNL must consider prior to the relicensing of CRL.

This enclosed report provides a set of comments and accommodations that will enable the AOO to work with the CNSC and CNL to move forward in a way that ensures Algonquin rights and interests are protected and promoted. We view this as an opportunity to set the stage for a productive relationship between the AOO, CNSC and CNL, rooted in respect and mutual benefit.

Should you wish to discuss this matter further, please do not hesitate to contact Janet Stavinga, Executive Director of the AOO Consultation Office by telephone at 613-735-3759 or by email at [jstavinga@tanakiwin.com](mailto:jstavinga@tanakiwin.com).

Yours truly,

*Original signed by*

Robert J. Potts  
**Principal Negotiator and Senior Legal Counsel**  
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Attach 1      Review of the Canadian Nuclear Laboratories (Chalk River Laboratories) –  
 Application for the renewal of the Nuclear Research and Test Establishment  
 Operating Licence

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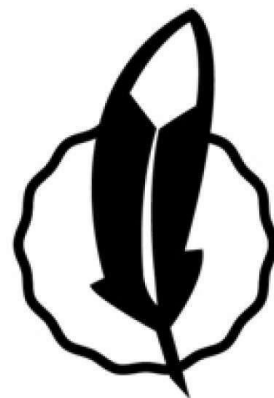


Photo Credit: Canadian Nuclear Laboratories Flickr

# Chalk River Laboratories Licence Application Review

Prepared by:  
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## Executive Summary

The Algonquins of Ontario (AOO) assert unextinguished and constitutionally protected Aboriginal rights and title to a traditional territory in Eastern Ontario (referred to as the “Settlement Area”) and are currently in negotiations towards a modern-day Treaty with the governments of Ontario and Canada. The AOO have conducted a review of the Canadian Nuclear Laboratories (CNL) Licence Renewal Application for Chalk River Laboratories (CRL) as part of the Canadian Nuclear Safety Commission (CNSC) hearing process. CNL is applying to the CNSC to renew the “Nuclear Research and Test Establishment Licence” at CRL for a ten-year period from April 1, 2018 to March 31, 2028.

CRL is a nuclear research facility that is located along the southern shores of the Ottawa River (known in the Algonquin language as “Kitchissippi”) in the Town of Deep River. The facility covers an area of approximately 37 square kilometres and is home to several CNSC licensed nuclear facilities, including the National Research Universal reactor. CRL is one of the most advanced nuclear research laboratories in the world and works to develop applications for nuclear technology in medicine, science, engineering, power generation and nuclear waste management.

Our review focused on the interactions between CRL and the rights and interests of AOO members. The primary concern related to CRL was the lack of consultation or consent from Algonquin communities when CRL was originally constructed, as well as past impacts during previous licensing periods. Based on known land use and cultural heritage data, it is well-known that the CRL site is an area where Algonquin people have a longstanding and well-established record of historic and ongoing current use. Drawing on this knowledge, and based on AOO members’ constitutionally protected Aboriginal rights and title, AOO has considered the following potential issues related to the rights and interests of AOO members in our review of the CRL licence application:

- Potential impacts to the current use of lands and resources for traditional purposes by AOO members
- Potential impacts to the health of AOO members
- Potential impacts to AOO members’ informal and formal socio-cultural and economic systems associated with the trade and sharing of resources or products from traditional land use
- Potential impacts to AOO members’ commercial harvesting associated with traditional land use
- Potential impacts to AOO cultural heritage and archaeological resources

CRL, and the experimental nature of its operation, poses a significant risk to the environment, human health and the Aboriginal rights and title of Algonquin people. Impacts from CRL have affected Algonquin people since 1944 and will continue to do so well into the future. At the current time, no formal accommodation agreement exists between AOO and CNL. The results of our review provide a series of comments and recommendations that CNSC and CNL must consider prior to the relicensing of

CRL. The following list presents a high-level overview of the 40 key accommodation measures identified by AOO:

- Formal accommodation agreements for past, present and future impacts through the development of a Long-Term Relationship Agreement
- Involvement of the AOO in the ongoing environmental, cultural heritage, and human health monitoring in and around CRL and along key transportation routes
- Accessible information for Algonquin citizens, including communications protocols for informing communities about monitoring results, participation opportunities, incidents such as spills, accidents or malfunctions, and involvement in emergency planning and response
- A framework for addressing the cumulative effects of CNSC-regulated projects (e.g. NPD reactor, NSDF, etc.) and other activities in the region that affect AOO rights and interests across the unceded AOO Settlement Area
- Collaborative decision-making with AOO, based on nation-to-nation relationships and the obligation to secure free, prior and informed consent. This decision-making must recognize and strengthen the jurisdiction that the AOO have with respect to the environment and culture.
- Rules and criteria to encourage transparency, accountability and credibility, and good science and Indigenous knowledge-based decisions, including a comprehensive Indigenous knowledge and land use study.
- To promote the effective participation of AOO within the environmental management and monitoring programs of CRL, we strongly suggest the creation of a Nuclear Environmental Review Board (NERB). This board should be composed of representatives from AOO, CNSC and CNL. The NERB would be responsible for providing guidance to the operation of the EMS and IEMP. The NERB would also be responsible for reviewing annual reports, applications, licence renewals and other activities associated with the CRL. Resources must be provided to allow the NERB to dedicate the time required to complete these tasks. Secondly, the NERB should have access to funding for obtaining guidance from technical experts, where appropriate.
- The AOO requests that the CNSC impose a condition upon the licence for CRL that CNL must make reasonable efforts to establish a formal consultation and accommodation arrangement with the AOO in the form of a Long Term Relationship Agreement.

At the time of the Crown decisions to establish and operate CRL in the unceded AOO Settlement Area, the Crown did not consult with the AOO, or provide accommodations for impacts to AOO rights and interests. It is time for CNL and the CNSC to formally acknowledge the use of the unceded Algonquin Settlement Area for nuclear science and processing. CRL has significantly impacted the AOO through

displacement of its people, loss of use, destruction of cultural heritage resources and the release of radioactive and other hazardous materials into the environment.

In the CNSC assessment report of CNL's licence application, CNSC staff have determined that the licence application will not cause adverse impacts to any potential or established Aboriginal and/or treaty rights. This assessment is based on the CRL being an existing site with restricted access and CNL not proposing any changes to the facility's footprint or current licensing basis. As a result, CNSC staff are of the opinion that the decision on the licence renewal for CRL before the Commission does not raise the Duty to Consult (CNSC Staff, 2017).

However, what the above determination fails to acknowledge is the complete absence of consultation or accommodation during development, and limited consultation or accommodation during ongoing operations of CRL. This includes the development of appropriate accommodations and mitigations, and addressing the cumulative effects the site has had on Algonquin people. This determination also fails to acknowledge the extensive construction and reclamation projects proposed at CRL over the ten-year licence period. These projects (e.g. decommissioning of NRU reactor and clean-up of legacy wastes) have the potential to impact the environment and health of Algonquin people. Therefore, AOO believes the Duty to Consult and Accommodate is triggered by the current licence application and the continued operation and modification of CRL.

This report provides a set of comments and accommodations that will enable us to work with the CNSC and CNL to move forward in a way that ensures Algonquin rights and interests are protected and promoted. We view this as an opportunity to set the stage for a productive relationship between the AOO, CNSC and CNL, rooted in respect and mutual benefit.

## 1.0 Introduction

The Canadian Nuclear Laboratories (CNL) Chalk River Laboratories (CRL) is located within the unceded Algonquins of Ontario Settlement Area, adjacent to the Algonquins' most revered waterway, Kitchissippi (Ottawa River). CRL was constructed without any consultation or consent from Algonquin communities that have used and occupied and who continue to use and occupy the lands and waters within and around the facility. CRL, and the experimental nature of its operation, poses significant risks to the environment, human health and the Aboriginal rights and title of Algonquin people.

CNL is applying to the Canadian Nuclear Safety Commission (CNSC) to renew the "Nuclear Research and Test Establishment Licence" at CRL for a ten-year period from April 1, 2018 to March 31, 2028. As such, the Algonquins of Ontario (AOO) have an interest in the relicensing process for CRL and have received participant funding from the CNSC to complete a review of CNL's licence application and the CNSC staff's review of the application. Our review will focus primarily on how CNL activities interact with the rights and interests of Algonquin people living in the unceded AOO Settlement Area. We will also comment on the licence application and provide a series of accommodation measures that should be implemented by CNL and the CNSC during this ten-year licence period and beyond.

### 1.1 The Algonquins of Ontario

The Algonquins have lived in present-day Ontario for thousands of years before Europeans arrived. Today, ten Algonquin communities comprise the Algonquins of Ontario:

- the Algonquins of Pikwakanagan First Nation
- Antoine
- Kijicho Manito Madaouskarini (Bancroft)
- Bonnechere
- Greater Golden Lake
- Mattawa/North Bay
- Ottawa
- Shabot Obaadjiwan (Sharbot Lake)
- Snimikobi (Ardoch)
- Whitney and Area

Based on a Protocol signed in 2004, these communities are working together to provide a unified approach to negotiate a modern-day Treaty.

The Algonquin Negotiation Team consists of the Chief and Council of the Algonquins of Pikwakanagan First Nation, who are elected under the Pikwakanagan Custom Election Code, and one representative from each of the nine other Algonquin communities, each of whom is elected by the enrolled Algonquin Voters of each community for a three-year term.

The AOO Settlement Area includes an area of more than 9 million acres within the watersheds of the Kitchissippi (Ottawa River) and the Mattawa River in Ontario, unceded territory that covers most of eastern Ontario, including Ottawa, and most of Algonquin Park. More than 1.2 million people live and work within the unceded AOO Settlement Area. There are 84 municipal jurisdictions fully and partially located within the unceded AOO Settlement Area, including 75 lower and single tier municipalities and 9 upper tier counties.

On October 18, 2016, the AOO and the Governments of Ontario and Canada reached a major milestone in their journey toward reconciliation and renewed relationships with the signing of the Agreement-in-Principle (AIP). The signing of the AIP is a key step toward a Final Agreement, and a modern-day Treaty, which will clarify the rights of all concerned. By signing the AIP, the AOO and the Crown have expressed in a formal way their mutual intention and desire for a lasting partnership. This event signaled the beginning of a new relationship between the AOO and the Crown, one in which the mistakes of the past must be supplanted by a new type of mutual respect and cooperation.

## 1.2 Algonquin Values and Teachings

Today's Algonquins of Ontario share a history of common interests, traditions and needs arising from our common heritage. In the following section, we outline several Algonquin practices and teachings that are key to understanding the review comments that follow. We want to know that you understand who we are.

In developing these comments, we have been guided by the spirit and intent of the Teachings of the Seven Grandfathers. These teachings have been passed down from generation to generation and continue to be practiced today.

1. Honesty (Gwayakwaadiziwin): Honesty in facing a situation is to be brave
2. Humility (Dabaadendiziwin): Humility is to know yourself as a sacred part of Creation
3. Respect (Minaadendamowin): To honour all Creation is to have Respect
4. Bravery (Aakode'ewin): Bravery is to face the foe with integrity
5. Wisdom (Nibwaakaawin): To cherish knowledge is to know Wisdom
6. Love (Zaagi'idiwin): To know Love is to know peace
7. Truth (Debwewin): Truth is to know all of these things

Our survival on this land for thousands of years has required us to apply our teachings to ensure the protection of the lands and waters that we rely on. These teachings serve as the original instructions or “natural laws” that were built into our way of life. “Sustainability” is a modern term, but sustainability has long been in practice by our people and our ancestors. There were consequences that occurred when we strayed from our natural teachings, instructions and laws. We were constantly monitoring the environment, and if changes occurred, we would adapt. It was (and is) a matter of survival. We had, and continue to have, deep connections to the land.

Industrial developments such as mines, hydroelectric dams and nuclear developments have significantly impacted the lands and waters that we rely upon. Protection and interaction with the lands and waters of our territory has been central to our existence for thousands of years. We maintained this connection to the land in spite of the arrival of Europeans to our territory. Nonetheless, this arrival dramatically affected our way of life. Because we are confined to harvesting in specific locations, resources have and can become depleted. We are in great competition with so many others on this land now for the resources that are here.

Algonquin oral history is also recorded by the Seven Fires wampum belt, which has been held by hereditary belt-keepers for centuries. The story concerns eight prophets who appeared to the Algonquins on seven occasions before a council fire just prior to crucial periods in their history. Each “Fire” can be correlated either with geological time periods, named after postglacial lakes and rivers, or to well-known events in Algonquin Post Contact history (Swayze, 2017). The First and Second Fires occurred during the existence of Glacial Lake Algonquin and the Champlain Sea, while the long Third Fire correlates to the phases of postglacial Lake Mattawa and spanned the entire Archaic period. The two prophets of the Fourth Fire spoke at the advent of the Protohistoric period. The Fifth Fire prophet warned of the changes that would happen during the Fur Trade. The Sixth Fire prophet warned that British and Canadian Colonialism would reduce the Algonquin to the lowest point in their history. The prophet of the Seventh Fire spoke of the opportunity that would arise in our time, when the Algonquin and “Rainbow People” who share the Algonquins’ land, will together face challenges to determine if the environment, and people who depend on it, will survive or perish (Swayze, 2017).

## **1.3 Algonquins of Ontario Rights and Interests and Chalk River Laboratories**

### **1.3.1 Chalk River Laboratories Facility Background**

Chalk River Laboratories (CRL) is a nuclear research facility that is located along the southern shores of Kitchissippi in the Town of Deep River, Renfrew County, in the Province of Ontario, approximately 200 kilometres northwest of Ottawa (CNL, 2017). Its current licence (NRTEOL-01.00/2018[1]) is valid until March 31, 2018. Canadian Nuclear Laboratories (CNL) applied for a licence renewal for a period of ten (10) years, until March 31, 2028 (CNSC Staff, 2017). On November 3, 2014, all licences for the operation of CRL were transferred from Atomic Energy of Canada Limited (AECL) to Canadian Nuclear Laboratories Ltd. (CNL). CNL manages operations and performs all functions previously done by AECL at CRL. CRL is a “GoCo,” or Government-Owned/Contractor-Operated facility, owned by AECL and operated by CNL. The term “Chalk River Laboratories” continues to refer to the land under and around the nuclear facility.

The CRL site is 3,700 hectares (9,100 acres) and contains several licence-listed nuclear facilities, including the National Research Universal (NRU) reactor and many other unique facilities and laboratories (CNL, n.d.). The surrounding terrain consists of gently rolling hills interspaced with many small lakes. The Kitchissippi flows along the eastern boundary of the CRL site. The Petawawa Military Reserve abuts the CRL restricted area to the southwest (CNL, 2017).



In this area, most development has occurred on the Ontario side of the river, while the Quebec side has remained largely undeveloped. Land use in the region consists primarily of forestry, recreation and tourism, with limited agriculture, trapping, and mining occurring as well (CNL, 2017).

CRL was first opened in 1944, during the Second World War as Canada's primary facility for nuclear research. Key factors for choosing Chalk River as the location for this facility included the site's proximity to Ottawa and Montreal, being located close to an important rail center (Chalk River), adjacency to the Kitchissippi and the site's proximity to the Petawawa Military Reserve (AECL Research, 1992). While CRL was originally planned to be used for warfare purposes during the Second World War, the war ended shortly after the site was selected, and the reactor built on-site was used as a test reactor to assist in the design and start-up of a much larger reactor (AECL Research, 1992).

The National Research Universal (NRU) reactor originally came online on November 3, 1957, marking a significant achievement in Canada. As directed by the Government of Canada, the NRU is scheduled to be permanently shut down on March 31, 2018, which coincides with the expiration of the current licence.

Over the proposed ten-year licence, CNL proposes to continue the following initiatives:

- Science & technology program
- Infrastructure improvements
- Management System evolution
- NRU reactor – execution of shutdown plans
- Decommissioning and waste management
- Near Surface Disposal Facility (CNL, 2017)

CNL has planned a significant change in the focus of CRL operations for this licence period. The major change to CRL operations will be the planned permanent shutdown on March 31, 2018 of the NRU reactor. The operation of the NRU reactor has been the most significant source of risk for potential off-site impacts and the single largest contributor to radiological emissions at CRL (CNL, 2017). The NRU reactor will progress to a permanent safe shutdown state in 2018, followed by transition to storage with surveillance in 2021 (CNL, 2017). The full decommissioning process is expected to be completed by 2045 (CNSC Staff, 2017).

Apart from the Near Surface Disposal Facility (NSDF), all the proposed initiatives are permitted within the licence and are already being carried out at CRL. The NSDF is subject to a separate application from CNL that will be considered at a separate hearing later in 2018 and has no bearing on the scope of this licence consideration (CNSC Staff, 2017).

Along with the above initiatives, it is also possible that the CRL site could be a research location for CNL's proposal to engage in advancing technologies for small modular reactors (SMRs).

### 1.3.2 AOO Rights and Interests and the CRL Relicensing Process

CRL falls within lands to which AOO members assert their Aboriginal rights and title, and over which they will exercise Treaty rights once their Treaty negotiations with the Crown are complete. CRL occupies 37 square kilometres of the unceded AOO Settlement Area along a portion of Kitchissippi that is significant to Algonquin people from a land use and cultural heritage perspective. No consultation or engagement occurred with Algonquin people in the original decision to build or operate this facility within AOO Territory. AOO members have exercised, and will continue to exercise, their inherent and Treaty rights around the CRL site without limitation. In addition, the potential risks (such as leaks of radioactive contaminants or groundwater seepage of hazardous materials) associated with CRL would impact the unceded Settlement Area.

Based on known land use and cultural heritage data, it is well-known that the CRL site is an area where Algonquin people have a longstanding and well-established record of historic and ongoing current use. Drawing on this knowledge, and based on AOO members' constitutionally protected rights, AOO has considered the following potential issues and concerns related to the rights and interests of AOO members in our review of the CRL licence application:

- Potential impacts to the current use of lands and resources for traditional purposes by AOO members must be avoided, mitigated, or accommodated
- Potential impacts to the health of AOO members—including, but not limited to those conditions reliant on the current use of lands and resources for traditional purposes—must be avoided, mitigated, or accommodated
- Potential impacts to AOO members' informal and formal socio-cultural and economic systems associated with the trade and sharing of resources or products from traditional land use must be avoided, mitigated, or accommodated
- Potential impacts to AOO members' commercial harvesting associated with traditional land use must be avoided, mitigated, or compensated
- Potential impacts to AOO cultural heritage and archaeological resources must be avoided, mitigated, or compensated

The experimental nature of CRL's operations heightens the risks associated with the facility, as many of the projects occurring at CRL are the first of their kind. With any untested research method, the risks for unplanned incidents increases, in part due to the lack of verifiable and field-tested data from other facilities on the effectiveness of safety and environmental management measures. AOO communities believe the experimental nuclear research projects at CRL pose an on-going risk to the environment and AOO members during the proposed licence period and beyond.

### 1.3.2.1 The Duty to Consult and Accommodate

In the CNSC assessment report of CNL's licence application, CNSC staff have determined that the licence application will not cause adverse impacts to any asserted or established Aboriginal rights and title. This assessment is based on the CRL being an existing site with restricted access and CNL not proposing any changes to the facility's footprint or current licensing basis. As a result, CNSC staff are of the opinion that the decision on the licence renewal for CRL before the Commission does not raise the Duty to Consult (CNSC Staff, 2017).

However, what this determination fails to acknowledge is the complete absence of consultation or accommodation when the site was initially proposed and developed. This includes putting in place appropriate accommodations, mitigations, and addressing the cumulative effects the site has had on Algonquin people. This also fails to acknowledge the extensive construction and reclamation projects proposed at CRL over the ten-year licence period. These projects (e.g. decommissioning of NRU reactor and clean-up of legacy wastes) have the potential to impact the environment and health of Algonquin people. Therefore, AOO believes the Duty to Consult and Accommodate is triggered by this licence application and the continued operation and modification of CRL.

As Section 2.0 of this report outlines, Algonquin people have always had a very close connection and reliance on the lands and waters for subsistence and cultural well-being. This connection to the land, combined with Algonquin peoples' established Aboriginal rights and interests in the area, and the rights of Aboriginal peoples in Canada, as stated in Section 35 of the Constitution Act, 1982, demonstrate how critically important it is to appropriately and adequately consult and accommodate Algonquin people in the matter of the Chalk River licence application.

More specifically, Section 35 of the Constitution Act states:

35. (1) The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.

#### **Definition of "*aboriginal peoples of Canada*"**

(2) In this Act, "*aboriginal peoples of Canada*" includes the Indian, Inuit and Métis peoples of Canada.

#### **Land claims agreements**

(3) For greater certainty, in subsection (1) "*treaty rights*" includes rights that now exist by way of land claims agreements or may be so acquired.

The above sections demonstrate that the rights of Indigenous people must be recognized and affirmed. In addition to Section 35, the AOO is also in the process of negotiating a modern-day Treaty with the

Crown. While this Treaty is being negotiated, a Consultation Process Interim Measures Agreement is in place between the Algonquins of Ontario, Her Majesty the Queen in Right of Ontario, and Her Majesty the Queen in Right of Canada. Some key components of the agreement that highlight the importance of adequate consultation and accommodation for AOO are as follows:

- Where a Federal department, Provincial ministry or other Crown agency proposes a particular decision or activity that is applicable to the territory as depicted on the map attached as Appendix "A," and where such decision or activity gives rise to a duty to consult with the Algonquins, it shall provide to the Algonquin Consultation Office appropriate notice and information of the proposed decision or activity.
- The Algonquin Consultation Office shall acknowledge receipt of the notice and information referred to in Article 6 in a timely manner, and duly advise the Federal department, Provincial ministry or other Crown agency providing notice that:
  - a. no further consultation is sought and that the Algonquins will take no action to oppose the decision or activity, or
  - b. the proposed decision or activity might have an adverse effect on Algonquin Aboriginal rights and the reasons therefore, and indicate that further consultation is sought.
- If the Algonquin Negotiation Office fails to duly respond pursuant to Article 7, nothing in this Agreement prohibits the Federal department, Provincial ministry or other Crown agency from proceeding with the decision or activity.
- Where further consultation is sought pursuant to Article 7 (b), the Federal department, Provincial ministry or other Crown agency shall consider the views and reasons of the Algonquin Consultation Office, and
  - a. if further consultation is required by law, offer to conduct further consultations with the Algonquins and, if appropriate, discuss potential accommodation with the Algonquins.

As an agent of the Crown, CNSC must uphold the requirements outlined within this agreement to ensure the requirements of consultation are being adequately met and ultimately AOO rights and interests are protected or accommodated where necessary.

AOO would, however, like to acknowledge that we have been invited to participate in the Commission hearing to express any concerns that we may have in relation to this licence renewal application and are using this written submission as an opportunity to raise our concerns regarding the licence renewal application.

**Comment:** AOO strongly disagrees with CNSC staff's conclusion that the Duty to Consult is not triggered by this licence application, and the notion that the rights of AOO members will not be impacted by CRL over this ten-year licence period.

**Accommodation:** The Duty to Consult must be formally triggered. CNSC and CNL must develop an appropriate consultation and accommodation plan to address the past, present and future impacts to AOO members and their rights.

### 1.3.2.2 Recognition to CNL

AOO acknowledges the valuable research occurring at CRL in developing innovative applications for nuclear technology in medicine, physics, chemistry, biology, engineering, power generation and nuclear waste management. CRL's work in collaborating with medical/educational institutions to develop cancer and other medical treatments is commendable. AOO also supports CNL's vision to clean up the CRL site and mitigate the environmental liabilities that exist as a result of past activities on the site.

#### 1.3.2.2.1 Cultural Resource Management Program

From an archaeological point of view, CRL has made a significant contribution to our current understanding of Algonquin settlement patterns, land use, and material culture through the ages. Initially, this contribution was through volunteer fieldwork by several AECL employees, namely, Clyde Kennedy, Barry Mitchell, and David Croft, who carried out site survey and excavation (Swayze, 2017). By 2007, AECL established an archaeological master plan and hired professionally trained staff to oversee cultural resource management (CRM) in CRL. Another significant contribution was the studies AECL commissioned by the Geological Survey of Canada (GSC) of CRL's surficial geology, which identified the elevations of seven previous water levels that existed during the history of the Algonquins, as told in the Seven Fires wampum belt (Swayze, 2017).

## 1.4 Towards a Long-Term Relationship Agreement

Part of the reconciliation process in Canada is acknowledging past wrongdoings by governments or corporations to Indigenous peoples or communities. As part of the Truth and Reconciliation Commission's (TRC) 94 Calls to Action, the TRC has outlined a call to action that is applicable to CNL/AECL:

"We call upon the corporate sector in Canada to adopt the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) as a reconciliation framework and to apply its principles, norms, and standards to corporate policy and core operational activities involving Indigenous peoples and their lands and resources. This would include, but not be limited to, the following:

- I. Commit to meaningful consultation, building respectful relationships, and obtaining the free, prior, and informed consent of Indigenous peoples before proceeding with economic development projects.
- II. Ensure that Aboriginal peoples have equitable access to jobs, training, and education opportunities in the corporate sector, and that Aboriginal communities gain long-term sustainable benefits from economic development projects.

- III. Provide education for management and staff on the history of Aboriginal peoples, including the history and legacy of residential schools, the UNDRIP, Treaties and Aboriginal rights, Indigenous law, and Aboriginal–Crown relations. This will require skills-based training in intercultural competency, conflict resolution, human rights, and anti-racism.” (TRC, 2015)

As a way to advance reconciliation, many corporate entities (including Crown corporations) have begun to develop formalized relationships and partnerships with local Indigenous communities. One such arrangement is called a Long-Term Relationship Agreement (LTRA), which lays out the framework for a relationship between the corporate entity and Indigenous communities to specify how Indigenous people will be involved and share in the benefits of a project/facility equitably.

In an effort to establish a formal arrangement for consultation and accommodation related to CRL, AOO proposes the establishment of a LTRA between CNL/AECL and the AOO. The LTRA would create a process for negotiating accommodation measures for impacts (past, present and future) as a result of the CRL site. The LTRA would be a binding legal document that both parties would jointly negotiate and develop a plan for implementation.

The LTRA would outline the impacts of the CRL site as well as the commitment and responsibilities of both parties. The LTRA would set out terms for how CNL/AECL would share the benefits of the operation with AOO. The following potential accommodation measures could be laid out in the LTRA:

- Employment
- Training and apprenticeship programs
- Business opportunities related to CRL (supply chain, spin-off business, etc.)
- Environmental and cultural heritage monitoring programs
- Rehabilitation and remediation programs
- Full-time liaison position
- Lease arrangements for the use of Algonquin land
- Revenue-sharing arrangements

The LTRA would be used as a tool to formally acknowledge the use of Algonquin lands for the CRL site by CNL/AECL. Accommodation measures for impacts from the permanent loss of access as a result of CRL would assist AOO in playing a more active role in the continued operations and future projects occurring at CRL.

As part of a LTRA, there is a great need and opportunity for a long-term program of archaeological research, education, and conservation that will ensure that when CRL campus is decommissioned in 500 years, the AOO will already have documented its potential to be a world class heritage park that focuses on the development of Algonquin culture through time (Swayze, 2017).

CNL's role will be to make the CRL "outer area" into an outdoor cultural heritage laboratory where Algonquins can be educated in regional archaeology and can receive practical CRM field training. The training and education can be provided through partnerships and can be incorporated into an ongoing program of research involving surveys, excavation, conservation, and education, with the aim of training Algonquin people to work in the CRM industry and to produce Indigenous scholars and scientists who can provide internal cultural perspective and archaeological consultant capacity for AOO (Swayze, 2017).

**Comment:** Currently there is no formal accommodation agreement in place between AECL/CNL and the AOO regarding the past, present and future operation of CRL and the associated impacts and risks.

**Accommodation:** AECL/CNL should enter into negotiations with AOO to establish a Long-Term Relationship Agreement with the AOO to determine a formal approach to consultation and accommodation for CRL moving forward. Since CRL lies within the unceded AOO Settlement Area, a formal accommodation arrangement between AECL/CNL and the AOO is necessary.

## 2.0 Algonquin Land Use and Occupancy near Chalk River Laboratories

This section provides a high-level summary of Indigenous knowledge and cultural heritage considerations important to the AOO near CRL. Due to the limited scope, time and budget to complete this report, a fulsome Indigenous knowledge and cultural heritage study was not undertaken. Instead, input from AOO's archaeological specialist, Ken Swayze (Nipissing University and Kinickinick Consulting) was provided on December 4, 2017 to examine the cultural heritage and historic use of areas near CRL. The majority of this information was derived from the oral history accounts from an Algonquin elder who used the area around CRL extensively for traditional land and resource use.

**Disclaimer: This information should not be considered inclusive of all AOO land use, knowledge or cultural heritage values within the areas discussed, rather as a snapshot of land use and cultural heritage based on the professional opinion of AOO's licensed professional archaeologist and consultant.**

## 2.1 Summary of Algonquin Land Use Activities near Chalk River Laboratories

### 2.1.1 Hunting

Hunting small and large game is an important aspect of Algonquin culture and identity, both past and present. Hunting by the AOO members is an activity that is constitutionally protected as an Aboriginal right. Prior to the site restrictions that were imposed upon the CRL facility when it opened in 1944, the CRL site was utilized by Algonquin people as a hunting ground for mammals and birds such as deer, bear, moose, partridge and duck.

According to an Algonquin elder (name redacted), Algonquins who used to live in the vicinity of CRL relied on deer for fresh meat throughout the year, and organized hunts in the autumn to drive the deer down the mountain slopes into the river where they were taken in the water (Swayze, 2017).

Oral history has it that bears were hunted near CRL in the berry patches that grew over abandoned depot farms from the square-timber days, and there is archaeological evidence that suggests a similar method was used on the CRL lands. Modern bear dens have been observed in the forested sand dunes in the highlands of the CRL site, which suggests that, historically, bears may have been taken in these areas in the winter time (Swayze, 2017).

An Algonquin man (name redacted) lived on Maskinonge Lake, on land that became CRL, and derived his sole monetary income from selling moccasins and gauntlet gloves to the local settlers, and to do so he harvested deer as necessary from his surroundings (Swayze, 2017).

### 2.1.2 Fishing

Fishing is an integral component of Algonquin culture and identity, both past and present and is also a constitutionally protected activity. Prior to the site restrictions that were imposed by AECL, the CRL site was utilized by Algonquin people for a variety of fishing practices. Some of the species of interest to Algonquin fishers included muskellunge, sturgeon, northern pike, suckers, whitefish and American eel.

Algonquin people chose to take residence on Maskinonge Lake (located on the CRL site), in part, because muskellunge are abundant there. Archaeological evidence, acquired with the help of the *Earth Walkers of Pikwakanagan*, from a former residence site indicates that Algonquins “jacked” the musky and northern pike with a trident spear, after attracting them with lamps from a canoe at night. Formerly, the Algonquins used a bundle of blazing pine roots extended from the canoe to serve this function. A basket, made of barrel hoops, said to have been used for burning pine roots for this purpose, has been recorded in CRL at McQuestion’s Point, which was a favoured muskellunge fishing site because it is the narrowest part of Deep River reach (Swayze, 2017).

There is oral history about an Algonquin family, who lived on the river in what is now CRL, who used to trade butter with local Algonquins in return for fish. The Deep River Reach is famous for sturgeon, which was favoured for the quality and quantity of food provided. A local Algonquin woman was known for saying, “A muskellunge feeds a family for a few days, while a sturgeon provides food for weeks.” (Swayze, 2017).

The chain of lakes and wetlands through the abandoned river channel would have been connected through a series of portages to the Kitchissippi. Given that it is a lake known historically to be utilized by the Algonquin for harvesting muskellunge, it is likely that this and adjacent lakes were well known to local Algonquin and were an important location for harvesting fish (Swayze, 2017).



### 2.1.3 Trapping

Trapping is an important land use activity for Algonquin people from a traditional use perspective, but also from an income perspective. It is constitutionally protected as an Aboriginal right of the AOO. Prior to the site restrictions imposed by AECL, CRL was utilized as an important trapping area by Algonquin people for small furbearers that could be used for making clothing, blankets or sold to fur traders. The primary species of interest to Algonquin trappers on the CRL site were beaver, muskrat, marten and mink. Algonquin people trapped for sustenance, but also for commercial purposes as a way to generate income for their families (Swayze, 2017). Since Algonquin people are not permitted to enter the CRL site for trapping, this represents a permanent loss of use.

### 2.1.4 Gathering

Gathering is a critically significant component of Algonquin culture and identity and is also a constitutionally protected activity. Prior to the establishment of CRL, the lands were a productive gathering area for Algonquin people for a variety of medicinal and edible plants, as well as other materials, such as firewood or building supplies.

Algonquin people chose to live in areas around the CRL site due to its proximity to the narrows on Maskinonge Lake and the abundant marsh lands, where medicinal plants, and edible plants and animals could be conveniently gathered. Important medicinal plants such as gold thread and sweet grass are plentiful on the CRL site. Edible plants such as blueberries, raspberries and wintergreen are abundant throughout the CRL site and were gathered by Algonquin people during summer months prior to 1944 (Swayze, 2017).

An Algonquin elder recounts that the “Habitants” and other settlers regularly consulted Algonquin people (called doctors, out of respect for their medical knowledge) for all manner of illness and injury. Oral history holds that there was an Algonquin “medicine garden” near CRL, on the Dumoine River. There are medicinal and edible plants growing in every habitat in CRL (Swayze, 2017).

The height of land in CRL on the east side of Plant Road was formerly known as the “Laronde Hills” after an Algonquin person, who lived near the mouth of the Chalk River and made a living from the firewood they harvested in what became CRL (Swayze, 2017).

One Algonquin man who lived on the CRL site kept cattle and a pony at their homestead, and to feed them, they relied on “marsh hay” they gathered from various fens in what is now CRL. In the spring, they mixed this fodder with birch twigs gathered locally (Swayze, 2017).

### 2.1.5 Occupancy

As discussed, the CRL site was extensively utilized by Algonquin people in the exercise of their Aboriginal rights as a settlement site due to the abundance of food and access to key waterways. When CRL was created in 1944, the Government of Canada also expropriated land to build the town of Deep River. In doing so, the local Algonquins of the hamlet known as “Wylie,” were dispossessed and relocated from

the harbour and river front to the town's periphery—without consultation or compensation in any form. In addition to the probable archaeological remnants of Wylie Hamlet, there is also a Middle Woodland site under the town's tennis court, which is near the former hamlet (Swayze, 2017).

An Algonquin elder lived alone on the shore of Maskinonge Lake in a pit-house, or traditional semi-subterranean "lodge." They kept a pony and several head of cattle. They were not consulted about expropriation in 1944, nor were they compensated. They moved to the CRL site from Kitigan Zibi, via Allumette Island, early in the 20th century, and lived there until expropriation in 1944 (Swayze, 2017).

According to the oral history of the Wylie Algonquins, the Voyageurs camped early each spring at Point au Baptême in CRL, waiting for ice to break up, where they were joined by the Algonquins, who continued to camp there all summer. There is an unregistered Algonquin cemetery at Point au Baptême (CaGi-7) that has been acknowledged and is marked and avoided by CNL/AECL. Point au Baptême offers a view of Oiseau Rock—a sacred Thunder Bird Rock where Algonquins have prayed and offered tobacco for centuries (Swayze, 2017).

### 2.1.6 Access

Traditional road access to the CRL lands was by Chalk River Road to the East Mattawa Road (EMR), which ran by Kitchissippi shore at Point au Baptême and Balmer's Bay, just above CRL. Before the Mattawa Road was constructed in about 1850 roads from the river into the CRL interior were located at McQuestion Point and Foran's Point (Swayze, 2017).

Access to the interior of CRL from Kitchissippi was either by the valley of Perch Creek, from its mouth at Point au Baptême, or by the valley of the abandoned river channel from Balmer's Bay through the Rat Lakes, Maskinonge Lake, and Maskinonge Bay (Swayze, 2017).

## 2.2 Archaeological Resources on the Chalk River Laboratories Site

There are significant archaeological sites near CRL and the Town of Deep River that must be mentioned before the cultural resources of CRL are described. These include the Hamlet of Wylie (if any deposit remains) and a Middle Woodland site, said to underlie the tennis courts. Neither site has had any archaeological investigation. CaGi-1, the Indian Point site, reported by Barry Mitchell on the north side of the river across from Deep River, has been used for thousands of years and is one of the few places in Ontario where "Vinette I" pottery has been found. Other sites have been registered on the north side of the river between Deep River and CRL, including the Schyan River site, which has been occupied periodically and seasonally for thousands of years (based on a radiocarbon date of over 6,000 years (BP) and artifacts from the Middle Woodland to Historic period). "Cross Rock" on the south side of the river opposite the Schyan River, may be where the Algonquins held Henry Hudson in 1611 for the initials "HH" and a cross are engraved into a large boulder. According to oral history, the missionaries painted the cross with vermillion and stood above it on the rock to ring a bell to summon Algonquins in Schyan

village to hear their sermons. Cross Rock has never had an archaeological assessment. The “Hudson Rock” with the inscription “HH Prisoniere 1611” was found on higher ground nearby (Swayze, 2017).

Within CRL, two sites were recognized prior to the 2007 CRL archaeological master plan, namely the NRU site and Point au Baptême. Clyde Kennedy came across the highly disturbed remains of a Middle Woodland encampment or village during construction of the NRU reactor in the 1950s. He was only able to salvage a small collection of artifacts, which are now curated by the Canadian Museum of History (CMH) in Gatineau. The site has been destroyed and has never been assigned an official registration number (“Borden” number). The small artifact collection includes pottery and chert tools, notably “microlithic” scrapers. Clyde Kennedy was aware of the historical significance of Point au Baptême, and since his own brief test pit survey in the 1960s did not produce any artifacts, he never assigned it a Borden number. AECL has sponsored brief field school surveys of Point au Baptême in 2010 and 2011 that show this highly disturbed site still contains artifacts of great interest. This work did not include the cemetery, which remains unregistered (Swayze, 2017).

During the field inventory, carried out in 2006 and 2007 as background research for the CRL archaeological master plan, lithic artifacts from the Pre-contact Period were observed on the surface at six places in CRL, including beside the Mattawa Road (CaGi-23 Nadeau Pebble Tools, CaGi-11 Emmy Chequen, CaGi-14 SS#2 Buchanan, and CaGi-19 Howard), as well as CaGi-50, a retouched quartz flake from Maskinonge Lake, and CaGi-51, a chert flake observed on a Middle Archaic aged relic shoreline above Sturgeon Lake (Swayze, 2017).

Many Algonquin archaeological sites, both large and small, have been recorded in CRL due to cultural resource management (CRM) assessments carried out by the Environmental Protection Branch of AECL/CNL. These sites can be listed chronologically according to the development or proposed construction that triggered the archaeological assessment (Swayze, 2017).

### **2.2.1 Proposed Mattawa Road Widening**

CaGi-14 Bresseau was found in 2007 beside the Mattawa Road and is associated with an Early Archaic relic shoreline and fossil island. It was tested in 2011, in part with the help of the *Earth Walkers of Pikwakanagan*, and the deposit in proximity to the road was removed (Swayze, 2017).

### **2.2.2 Parking Lot Construction 2007 and 2009**

CaGi-40 West Parking Lot was discovered, with help from the *Earth Walkers of Pikwakanagan*, in 2007 at 160 m, associated with an Early Archaic relic shoreline. A year later, during a test pit survey of a new parking lot, CaGi-53 East Parking Lot Site was found. The East Parking Lot artifacts were associated with an Early Archaic shoreline at 150 m asl and showed evidence of being submerged by later high water river levels (Swayze, 2017).

### **2.2.3 Communication Tower**

CaGi-52 Communication Tower was found in 2008, associated with a Champlain Sea shoreline at 180 m asl. This site, capped by a sand dune, contained an impressive sample of Early Archaic pebble tools (Swayze, 2017).

## **2.2.4 New Dry Waste Storage (NDWS)**

In 2009, a 15-ha parcel was test-pitted in advance of construction of the New Dry Waste Storage (NDWS). Seventeen of 4000 test pits produced expedient stone artifacts associated with relic shorelines at 170 and 180 m asl (Swayze, 2017).

## **2.2.5 New Storm Sewer**

In 2012, a Stage 2 assessment of a new storm sewer route led to the discovery of a disturbed artifact deposit associated with the Ottawa-Marquette low water phase. Like the East Parking Lot site, the storm sewer artifacts had been submerged by higher river level after deposition (Swayze, 2017).

## **2.2.6 Domestic Waterline (DWL)**

Archaeological work on the Domestic Waterline (DWL) began in 2008 with a Stage 2 test pit survey that revealed expedient stone tools at three locations along the route: CaGi-10 Labine, Cagi-28 Kelly Field, and CaGi-54 South Shore (Swayze, 2017).

The Labine site has been impacted by 20<sup>th</sup> century historical activity, but it has a prominent location on the 180-m relic shoreline and produced many artifacts made of quartz. Stage 3 excavation effectively removed the deposit before construction (Swayze, 2017).

The Stage 2 test pit survey of the Kelly Field site revealed a diffuse lithic scatter of expedient artifacts, many made from local pegmatite granite. Kelly Field is associated with relic shorelines of the recessional Champlain Sea and the Early Mattawa Flood event. Further Stage 2 and 3 assessments in 2009 and 2010 revealed a formation of small boulders beside the DWL, the Kelly Field Rock Feature, which was largely removed by a Stage 3 excavation in 2012 (Swayze, 2017).

The South Shore site is located on a late Champlain Sea gravel bar, just above 180 m asl, on the south side of a fossil island. Stage 3 excavations in 2009 and 2010 produced a representative collection of well-made pebble and cobble tools, some of them associated with faintly visible “ghost features.” Further test pit survey showed that the site continues to the north of the DWL and that the Stage 3 excavations effectively removed the deposit from the DWL route (Swayze, 2017).

In 2012, a test pit survey of an alternate DWL route located three clusters of positive test pits, called the South Shore Loop sites (SSL), on the south side of the fossil island above 180 m, at 195 m asl, and 212 m asl. Stage 3 test excavations were carried out the next year. The deposits above 180 m and around 195 m suggests they are part of narrow diffuse lithic scatters along former postglacial shorelines, while the deposit at 212 m was located at the edge of a prominent look-out. The South Shore Loop artifacts

include good examples of what may be harpoon “endblades.” This alternate DWL route was rejected in 2013, after the archaeological fieldwork was completed (Swayze, 2017).

In 2014, there were Stage 2 and 3 assessments of a new alternate DWL route along the height of land of the fossil island, which produced new discoveries of archaeological sites associated with former shorelines, at and above 195 m, and the look-out at the summit of the fossil island. Stage 3 excavations on a slope associated with the relic shoreline at 195 m asl produced a large collection of expedient stone artifacts. In 2014, a Stage 4 excavation was carried out to complete the removal of the deposit (Swayze, 2017).

### **2.2.7 Labine Dump Removal**

In 2014, CNL removed a modern dump (created by AECL employees in the 1950s and 1960s) from the southern part of the CaGi-10 Labine site. Stage 2 test pit revealed an isolated find of a retouched chert flake on the 159-m relic shoreline (Swayze, 2017).

### **2.2.8 Near Surface Disposal Facility (NSDF)**

In 2016, Stage 2 assessment of the East Mattawa Road (EMR) Near Surface Disposal Facility (NSDF) development footprint revealed three large diffuse lithic scatters associated with three early postglacial relic shorelines. CaGi-65 Upper Shore consists of clusters of positive test pits associated with the 180-m (North Bay Outlet) relic shoreline and with a look-out at the summit of the fossil island. CaGi-66 Middle Shore consists of concentrations of positive test pits in the lee of a large sand dune, associated with the Early Mattawa Flood event at 170 m asl. CaGi-67 Lower Shore test pit clusters are closely associated with the Early Mattawa Base Flow former river shore at 159 m asl. Stage 3 excavations were carried out in 2016 at numerous locations of each site leading to the need for Stage 4 removal at three locations. In 2017 the NSDF footprint was enlarged and further Stage 2 and 3 fieldwork triggered three more Stage 4 excavations (Swayze, 2017).

Although the NSDF artifact collections are still being analyzed, it is clear that the NSDF sites, taken together, constitute an archaeological “type site” that defines the regional expression of the Early Archaic lithic technology (Swayze, 2017).

### **2.2.9 AECL/CNL Archaeological Field Schools**

The AECL/CNL archaeological field schools provided an opportunity to work with local high school students on archaeological research projects, which included introductory training in excavation method and procedures. The *Earth Walkers of Pikwakanagan* assisted at CaGi-43 Louis Oree in 2007 and at CaGi-7 Point au Baptême in 2010 and 2011. The field school at CaGi-32 McQuestions Point, in 2012, provided evidence in the form of chert artifacts, that the point had been occupied by the Algonquin prior to construction of McQuestions Hotel (stopping place) in the early 19<sup>th</sup> century (Swayze, 2017).

## 3.0 Impacts to AOO Rights and Interests

### 3.1 Past Impacts and Grievances Regarding Chalk River Laboratories

At the time of the Crown decisions to establish and operate CRL in the unceded AOO Settlement Area, the Crown did not consult with the AOO, or provide accommodations for impacts to AOO rights and interests. These Crown decisions resulted in an accumulation of additional uranium and nuclear processing facilities within the unceded AOO Settlement Area, with activities that continue today, and with impacts that will continue for many thousands of years.

The primary impact to Algonquin people related to CRL is the permanent loss of access to a large portion (3,700 hectares) of Algonquin Traditional Territory. Since 1944, Algonquin people have been prohibited from exercising their Aboriginal rights on the CRL site for traditional land use activities such as hunting, fishing, trapping, gathering, as well as for cultural/spiritual purposes, such as sweat lodges, fasting camps, harvest gatherings and other ceremonial purposes.

The Town of Deep River, which was created to house AECL employees, also represents a significant loss of land and access to Algonquin people. As discussed in Section 2.1.5, Deep River was formerly a thriving Algonquin settlement called Wylie. When CRL was created in 1944, the Government of Canada also expropriated Wylie to build the town of Deep River. In doing so, local Algonquins were dispossessed and relocated from the harbour and river front to the town's periphery—without consultation or accommodation in any form.

As discussed in Section 2.2, the CRL site holds significant archaeological and cultural heritage value to the AOO. Archaeological resources have been impacted significantly by the original construction of CRL facilities and infrastructure. Construction of the company town, Deep River, also impacted AOO archaeological resources. Archaeological assessments carried out as CRM projects since 2007 indicate that there are significant archaeological sites throughout CRL associated with every relic shoreline elevation. These discoveries show that there are archaeological cultural landscapes in CRL that relate to every time period recorded in the Seven Fires wampum belt. This indicates that the construction of CRL facilities and the company town of Deep River has undoubtedly destroyed an untold number of archaeological sites.

In addition to the loss of land/access and the inability for AOO members to exercise their Aboriginal rights as a result of CRL, the facility has also created significant environmental and human health risks to Algonquin and non-Algonquin people who live in the vicinity of CRL. The unceded AOO Settlement Area has been impacted by at least four reported nuclear incidents at CRL:

- **1952 NRX Incident** – A power excursion and partial loss of coolant in the NRX reactor resulted in significant damage to the NRX reactor core. The control rods could not be lowered into the core because of mechanical problems and human errors. Three rods did not reach their destination

and were taken out again by accident. The fuel rods were overheated, resulting in a meltdown. The reactor and the reactor building were seriously damaged by hydrogen explosions. The seal of the reactor vessel was blown up four feet. In the cellar of the building, some 4,500 tons of radioactive water was found. To avoid having the water reach the Ottawa River, a pipeline was built to a sandy area about 1,600 m away. The contaminated water, containing about 10,000 curies of long-lived fission products, was pumped to this area and allowed to seep away. No radioactivity was detected in the creek which drained this area to a small lake. During this accident, some 10,000 curies or 370 TBq of radioactive material was released (Jedicke, 1989).

- **1958 NRU incident** – In 1958, there was a fuel rupture and fire in the National Research Universal reactor (NRU) reactor building. Some fuel rods were overheated. During a facility shutdown, a robotic crane pulled one of the rods with metallic uranium out of the reactor vessel. When the arm of the crane moved away from the vessel, the uranium caught fire and the rod broke. The largest part of the rod fell down into the containment vessel, still burning. The whole building was contaminated. The valves of the ventilation system were opened, and a large area outside the building was contaminated. The fire was extinguished by scientists and maintenance personnel in protective clothing running along the hole in the containment vessel with buckets of wet sand, throwing the sand down at the moment they passed the smoking entrance. The clean-up involved a large number of personnel, including AECL staff, soldiers from CFB Petawawa, and workers from the Civil Defense Unit based in Arnprior, Ontario, and a commercial cleaning company in Ottawa, Ontario (Whitlock, n.d.).
- **2008 Radioactive Leakage at the NRU Reactor** – On December 5, 2008, heavy water containing tritium leaked from the NRU. The leaked water was contained within the facility, and the CNSC was notified. In its report to the CNSC, AECL noted that 47 litres of heavy water were released from the reactor, about 10% of which evaporated, and the rest was contained. AECL further noted that the spill was not serious and did not present a threat to public health. The public was informed of the shutdown at the reactor, but not the details of the leakage, since it was not deemed to pose a risk to the public or the environment. The leak stopped before the source could be identified, and the reactor was restarted on December 11, 2008 with the approval of the CNSC, after a strategy for dealing with the leak (should it reappear) was put in place (Spears, 2009).
- **Heavy Water Leaks from the NRU Reactor** – In late 2008, the NRU reactor experienced a leak from a 2.4 inch crack in a weld in its reflector system. The leaking light water was allowed to flow into the Kitchissippi after collection and processing at an on-site water treatment facility in accordance with CNSC, Health Canada, and Ministry of the Environment regulations. The CNSC determined that the leakage is not a concern from a health, safety or environmental perspective (Spears, 2009). The NRU experienced another heavy-water leak in 2009 that led to a 15-month, \$70-million shutdown and a global shortage of medical isotopes. That followed emergency safety shutdowns in 2007 and 2008. (MacLeod, 2016).



Furthermore, the CRL site contains a variety of “legacy wastes” from past activities at the site. As a result, the ground water resources at CRL have experienced elevated levels of radioactive substances (NSDF EIS, 2017). In turn, fish on (or in the vicinity of) the CRL site have experienced elevated levels of radioactive substances. Fish from Chalk Lake, which is partially within the CRL site boundaries, have shown elevated levels of tritium, in some cases as much as 19 times higher than fish sampled from the Ottawa River (NSDF EIS, 2017). Only recently has CNL committed to remediating the site as part of the long-term plan for cleaning up CRL. Past releases of radioactive (and hazardous) substances from CRL as a result of accidents or normal operations have degraded the quality of the local ecosystem. Environmental degradation of the CRL site and surrounding area, combined with the exclusion and expropriation of AOO members from the CRL site (and Deep River) demonstrate substantial past impacts to AOO rights and interests.

**Comment:** CRL represents a substantial loss of land for AOO members. This is further exacerbated by environmental degradation caused by the operations of the facility, including accidents or malfunctions.

**Accommodation:** CNL/AECL and CNSC must develop a plan to accommodate AOO for past grievances related to CRL, including the lack of consultation in siting the facility and environmental and human health impacts caused by CRL. This could be addressed within the Long-Term Relationship Agreement.

## 3.2 Current Impacts and Grievances Regarding Chalk River Laboratories

The presence and operation of the CRL poses significant ongoing risks to AOO and results in many lost opportunities on land that is within the uncaded AOO Settlement Area. The primary ongoing impact to the members of AOO is the loss of access to the lands and waters of the CRL site itself. For safety and security reasons, access to the CRL is strictly controlled, and all members of the public and Aboriginal peoples, including the people of the AOO, are prohibited from the site (except as employees, contractors or visitors). Thus, AOO members are not able to practice traditional activities such as camping, hunting, fishing, and gathering plants and medicines. Engaging in these activities is a critical component of the identity for many members of AOO. Being able to participate in these activities represents a connection with traditional ways of living and the ancestors of AOO’s members. Moreover, the transmission of traditional ecological knowledge from person to person occurs while on the land. While there are other places where these activities can occur, the loss (and ongoing exclusion) of 3,700 ha of uncaded AOO Settlement Area is nonetheless significant.

In the event of any major accidents or malfunctions, the impacts to the health of AOO members from the CRL could be dire. These could range from mild exposure to nuclear radiation, contributing to health effects, including certain cancers, to acute poisoning and death. While the risk of such an accident or malfunction is likely low, it is nearly impossible to predict. With the proposal for research on small modular reactors, which may include activities at the site, additional unknown risks will emerge. As a result, for any members of AOO living in proximity to the CRL site, there is an ever-present fear of the



consequences of a disaster, an effect that is increasingly being recognized in academic research, particularly on minority groups (Downey and van Willigen, 2005).

Due to the ongoing operation of the CRL site, AOO members will experience the following impacts:

- Loss of access
- Loss of hunting opportunities
- Loss of fishing opportunities
- Loss of opportunity for staying on the land
- Loss of opportunity to transfer knowledge through generations
- Risk of exposure to contaminants, including radiological materials
- Psychological impacts – Concern of land users consuming potentially contaminated country foods (“chemophobia”). Concern of individuals who live in the area of potential consequences related to nuclear fallout.
- Potential reduction in property values for AOO individuals living within the CRL primary and secondary zones

There are ongoing releases of radioactive substances through airborne and liquid effluents from various facilities on the CRL site (NSDF EIS, 2017). CNL’s current airborne radiological effluent monitoring program includes continuous monitoring of Argon-41 (Ar-41), mixed fission product noble gases, Carbon-14 (C-14), tritium oxide, elemental tritium, Iodine-125 (I-125), Iodine-131 (I-131), gross alpha particulates, and gross beta particulates (NSDF EIS, 2017).

In 2015, the major sources of airborne radiological effluent from CRL operations were (NSDF EIS, 2017)

- the B109 stack that exhausts ventilation and cooling air from the NRU reactor
- the B206 Stack that exhausts the Molybdenum Production Facility and Cell 1 of the Universal Cells
- emissions from the cemented molybdenum waste storage, and
- secondary roof vents and fugitive emissions exhausting various rooms within the NRU.

(NSDF EIS, 2017)

The major sources of liquid radiological effluent at CRL property and the associated monitoring locations are (NSDF EIS, 2017):

- the NRU reactor, Waste Treatment Centre, and active laundry facility (monitored at the Process Outfall)

- contaminated groundwater discharge from the waste management areas (WMAs) (monitored at on-site surface waters), and
- groundwater discharges to the Ottawa River from sources inside the Controlled Area (monitored with on-site groundwater wells). (NSDF EIS, 2017)

These emissions have a direct impact on AOO members who work at CRL or utilize the area for traditional purposes (or in some cases both). Ongoing environmental degradation of the CRL site and surrounding area, combined with the exclusion and expropriation of AOO members from the CRL site, represent ongoing current impacts to AOO rights and interests.

**Comment:** Due to ongoing land use restrictions and environmental risks imposed on AOO members by the operation of CRL, AOO believes a formal accommodation process should be developed between CNL/AECL and the AOO.

**Accommodation:** AECL/CNL should enter into negotiations with AOO to establish a Long-Term Relationship Agreement with the AOO to determine a formal approach to consultation and accommodation for CRL moving forward. Since CRL lies within the unceded AOO Settlement Area, a formal accommodation arrangement between AECL/CNL and the AOO is necessary.

## 3.3 Potential Future Projects

### 3.3.1 NSDF

Canadian Nuclear Laboratories has proposed building a five-storey high mound roughly a kilometre from the river to store mostly low-level waste from the Chalk River nuclear facility. The Near Surface Disposal Facility (NSDF) would be operational by 2020, and would take up to 1 million cubic metres of waste by the year 2070, when it would be closed.

The NSDF proposal consists of the following project components:

- The planned construction (on the grounds of the CRL) of a permanent landfill for disposal of mainly low-level radioactive wastes (LLW), with a capacity of 1,000,000 m<sup>3</sup> of such wastes
- Hazardous waste disposal in the cases where hazardous wastes are commingled with radioactive wastes
- The disposal of these wastes in the NSDF over an operational period, which will last for about 50 years
- Containment and collection of leachate generated within the NSDF, with treatment of the leachate at a dedicated wastewater treatment plant (WWTP)
- Closure of the NSDF and capping with an impermeable cover, which is intended to effectively

prevent the further production of leachate for hundreds of years

- The proponent's proposed monitoring of the DGR facility is for about 300 years after closure, after which there is no intention to further monitor the facility
- The containment of the low-level radioactive wastes for a minimum of 500 years

A significant portion of the wastes proposed to be disposed of in the NSDF is to come from the remediation of "legacy wastes" which are found scattered around the Chalk River facility and its surroundings, including waste disposal pits, contaminated soils and vegetation, contaminated and/or redundant buildings and structures, and wastes which are currently being stored at various locations.

**Comment:** AOO must be adequately and appropriately informed, consulted, and accommodated in the matter of the Near Surface Disposal Facility (NSDF) to ensure adequate mitigations and accommodations are put in place to protect AOO rights and interests.

**Accommodation:** AOO is to be informed and consulted according to the Consultation Process Interim Measures Agreement or other applicable consultation protocol(s) throughout the lifecycle of the NSDF project, from the environmental assessment and planning all the way up to post-closure monitoring.

### 3.3.2 Small Modular Reactor Development

In recent years, the CNSC has been exploring the possibility of small modular reactors (SMRs) serving as a potential alternative to large-scale nuclear reactors, especially in remote communities and on industrial sites. SMRs have the potential to offer advantages over traditional technologies, including the ability to procure and construct the facility in a modular way which reduces the up-front capital costs. Another notable advantage is increased safety and efficiency and potential for integration in overall energy plans, with applications as varied as district heating, co-generation, energy storage, desalination, or hydrogen production.

CNL's goal is to demonstrate the commercial viability of the SMR concept, with a goal of Canada taking a leadership role in this emerging nuclear technology, and CNL becoming recognized globally as a leader in SMR prototype testing. In June 2017, Canadian Nuclear Laboratories began a discussion around SMR technology in Canada, and the role that CNL can play in bringing this technology to market, by launching a Request for Expressions of Interest on SMRs.

**Comment:** AOO must be adequately and appropriately informed, consulted, and accommodated in the matter of the SMR development on the CRL site, or elsewhere within the AOO Settlement Area to ensure adequate mitigations and accommodations are put in place to protect AOO rights and interests.

**Accommodation:** Request for Expressions of Interest on SMRs and any follow-up project planning processes, including, but not limited to, request for qualifications, request for proposals, licensing applications, and permitting must include evaluation criteria regarding Indigenous engagement, consultation, procurement, and accommodation measures. This includes specific evaluation criteria

around consulting and engaging AOO in instances of projects that fall within the unceded Algonquin Settlement Area.

In addition to the above, there are other future nuclear activities in the unceded AOO Settlement Area that may also yield impacts on AOO rights and interests. These include, but are not limited to, the following:

- Proposed NRU Shutdown in 2018 – The NRU reactor licence expired in 2016, however, the licence has been extended to March 2018 and the reactor will go into decommissioning after that. NRU Decommissioning operations will continue for many years into the future, within the scope of future operating and/or decommissioning licences issued by the CNSC.
- Shipment of Highly Radioactive Liquid Waste from the Chalk River Nuclear Lab to the U.S. Savannah River Site – In April 2010, the Crown and the United States government committed to working cooperatively to repatriate spent highly-enriched uranium (HEU) fuel currently stored at Chalk River Laboratories to the United States, through the unceded AOO Settlement Area, as part of the Global Threat Reduction Initiative, a broad international effort to consolidate HEU inventories in fewer locations around the world. In May 2017, Chalk River Laboratories began transporting liquid HEU to the U.S. Department of Energy's (DOE) H-Canyon in Savannah River Site in South Carolina for storage. Between 100 and 150 shipments over four years will be required to transport the material through the unceded AOO Settlement Area.

## 4.0 Assessment of Selected CNSC Safety and Control Areas

### 4.1 Management System

The management system Safety and Control Area (SCA) covers the framework that establishes the processes and programs required to assure an organization achieves its safety objectives, continuously monitors its performance against these objectives, and fosters a healthy safety culture.

The following specific areas comprise this SCA at CRL:

- Management System
- Organization
- Performance Assessment, Improvement and Management Review
- Operating Experience (OPEX)
- Change Management
- Safety Culture
- Configuration Management
- Records Management
- Management of Contractors

- Business Continuity

According to the CNSC, the CNL Chalk River facility has been in full compliance for its management system and received a compliance rating of “satisfactory” from 2013 to present. In 2012, the facility received a rating of “below expectations” from the CNSC, and as a result has been shifting its management system to maintain regulatory compliance and develop a safety culture at the site.

CRL regularly monitors safety culture through execution of employee surveys. The data were collected during the surveys conducted in 2011 and 2012, analyzed for trends, and the high-level results were communicated to the staff, the Safety Review Committee, and the Executive Committee. The survey results were also discussed with CNSC staff at a meeting in 2012 August.

Additionally, a detailed safety culture assessment was executed in the fall of 2012, which included: A comprehensive questionnaire delivered electronically to all staff; follow-up interviews with staff at CRL, Whiteshell Laboratories, and the Port Hope Area Initiative; and discussions with focus groups at all three sites. Results of this detailed assessment were compared with those from 2008 and were discussed with all managers in November 2012. The survey results were communicated to all staff in December 2012.

The surveys and the assessment indicated that additional effort was required to ensure that expectations were established and clearly communicated to employees. Furthermore, oversight was needed to monitor work execution in the field in order to reinforce the desired behaviours. These activities targeted reinforcement of the fundamentals and strengthened overall safety culture.

In 2013, safety culture improvements continued to be addressed through execution of the action plan documented in the Voyageur II program. In addition, in 2013 Practical Training Facility was established at the CRL site. Dynamic learning activities were developed and implemented in this facility. A “Stop, Think, Act, and Review” (STAR) simulator was included, enabling participants to test and practise human performance event-free tools, including: Three-way communication, self-check, verification, procedure adherence, and peer checking.

A larger simulator that includes various pieces of equipment (pumps, valves, pressurized equipment) was commissioned and opened for Operations staff to practice event-free tools, procedure use and adherence, “Lock Out Tag Out,” and work execution, using a planning scenario developed by Human Performance (HU) program and facility staff.

The above measures, along with ongoing efforts to maintain and improve safety and performance at the facility, have led CNSC to determine that CNL satisfactorily addressed shortcomings identified in a gap analysis of its management system and satisfied the requirements of CSA N286-05, *Management system requirements for nuclear power plants*.

This assessment was followed by a further gap analysis against CSA N286-12 *Management system requirements for nuclear facilities*. The analysis revealed that the CNL management system is compliant to N286-12 and identified some areas for improvement which are currently being addressed. CNSC staff

verified that changes to CNL's management system were made according to the CNL change management procedures. As a result, the CNSC is satisfied that licensed activities at CRL are conducted safely in accordance with the CNL management system, and that the management system meets the appropriate CNSC regulatory requirements.

The commission has outlined one management system condition they would like to see met for CNL to move forward with their licence renewal. That requirement is for CNL to implement and maintain a management system. Compliance verification criteria for this licence condition are included in the draft Licence Conditions Handbook (LCH) for the facility.

**Comment:** The current configuration of the management system does not mention or include a process for how impacted Indigenous communities, including the communities represented by AOO, are notified or engaged in the implementation of the management system.

**Accommodation:** Establish a communications protocol for informing Indigenous communities of any safety and control framework activities, including management system corrective actions happening within the AOO Settlement Area.

**Comment:** In order for AOO to meaningfully participate and contribute to management system activities at the site, adequate resources and capacity funding must be allocated to these activities.

**Accommodation:** Provide adequate capacity support to meaningfully participate in safety and control framework activities, including the integration of Indigenous knowledge, land, and resource use into the CNSC's safety and control framework activities.

## 4.2 Operating Performance

The operating performance SCA includes an overall review of the conduct of the licensed activities and the activities that enable effective performance.

The following specific areas comprise this SCA at CRL:

- Conduct of Licensed Activities
- Procedures
- Reporting and Trending
- Outage Management Performance
- Accident Management and Recovery
- Severe Accident Management and Recovery

The CNL Chalk River facility has been in full compliance for its operating performance and received a compliance rating of "satisfactory" from 2012 to present.

According to CNSC, CNL has implemented and maintains effective operational programs in order to ensure licensed activities are performed safely and in compliance with regulatory requirements. CNSC

staff conclude that CNL's Operating Performance at Chalk River met all applicable regulatory requirements and CNSC staff's expectations. As a result, CNSC staff are satisfied that licensed activities at CRL are conducted in a safe manner.

Nuclear facilities at CRL are governed by CNL's Facility Authorization and facility-specific Conduct of Operations documents, which indicate the operational limits and conditions for the various facilities. Facilities in permanent safe shutdown state or undergoing active decommissioning are governed by storage-with-surveillance plans or decommissioning plans, respectively. These governing documents prescribe how each facility is operated and maintained to ensure nuclear safety and that the risk to the public remains low.

CNSC staff carried out many verification activities since 2012 on CNL's operations across the CRL site and found that, overall, all Class I nuclear facilities at CRL have been operating safely since 2012. As CNL transitions to its new management system structure, operating procedures and instructions are currently being revised to align to the new format.

CNL continues to provide information regarding the operational performance of nuclear facilities at CRL in annual reports submitted to CNSC. The following subsections provide further information on the operational status of facilities at CRL, grouped by facility type.

### **Class I Nuclear Facilities**

The NRU reactor is currently operating and is scheduled to be permanently shut down at the end of March 2018. The NRU reactor lifecycle and the associated Molybdenum-99 Production Facility (MPF) is on stand-by for Molybdenum production until March 31, 2018. After March 31, 2018, the MPF will be shut down aligning with the shutdown of the NRU reactor (the source of Molybdenum production at the CRL site). CNL plans to prepare a storage with surveillance plan and detailed decommissioning plan in 2018 as CNL progresses through the phases of the NRU shutdown.

The Tritium Facility is scheduled to be transferred into a renovated building during the proposed licence period. Preparation of storage with surveillance and detailed decommissioning plans for the area previously occupied by the Tritium Facility is scheduled for the proposed licence period.

### **Class II Nuclear Facilities**

The Texas Neutron Generator was shut down in 2013. The instrument is currently awaiting removal from the Health Physics Neutron Generator facility. This low risk activity may be carried out at any time as it is permitted by the current licensing basis. A new neutron generator was installed in the facility and is currently undergoing commissioning activities.

A new irradiator was installed in the Gamma Beam Irradiator Facility and is now operational.

### **Radioisotope Laboratories**

CNL has made several changes to the radioisotope laboratories since 2012, including:

- Three radioisotope laboratories have ceased operation

- Seven radioisotope laboratories have been or are in the process of being renovated as part of the fume hood upgrade project
- Three radioisotope laboratories, associated with the NRU reactor, will cease operation following reactor shutdown in March 2018

CNL has planned to relocate several radioisotope laboratories to the newly constructed laboratory building. The buildings where the laboratories were previously located are scheduled for demolition. Where appropriate, CNL plans to prepare storage with surveillance and detailed decommissioning plans for the obsolete buildings in 2018.

CNL maintains a comprehensive suite of procedures across all programs and facilities at the CRL site. Since 2012, CNL continually updated the facility-specific procedures relating to operations, maintenance, and emergency response as needed and to support ongoing process improvements at CRL.

CNSC staff review procedure level documents as part of ongoing compliance verification activities. Based on these reviews, the CNSC conclude that the changes made to CNL procedures were carried out in accordance with CNL's change control process and there were no significant changes to operating documentation that could have affected the safe operation of the facilities at CRL.

For unplanned incidents, detailed requirements for reporting to the CNSC are included in the CRL LCH. CNL has complied with the requirements for submission of these reports since 2012. The following table highlights the number of events reported to the CNSC by CNL since 2012.

<b>Reportable Events for CRL (2012–2017)</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>Total</b>	<b>153</b>	<b>166</b>	<b>111</b>	<b>93</b>	<b>90</b>

CNL also submits annual reports on compliance monitoring and operational performance of facilities at CRL, as required by condition 4.16 of the current CRL licence. CNSC staff reviewed these reports as they were submitted and there were no significant regulatory issues identified during the review.

CNSC staff continue to monitor CNL's performance in this SCA through regulatory oversight activities, including onsite inspections and desktop reviews of relevant program documentation.

Two licence conditions are included in the proposed licence for this SCA. Those licence conditions require the following:

- CNL to implement and maintain an operating program
- CNL to implement and maintain a program for reporting to the CNSC.



Compliance verification criteria for both licence conditions are included in the draft LCH.

**Comment:** There is presently no notification system or communication protocol in place for informing AOO of any unplanned events occurring at the facility or for informing AOO of any changes to the facility's operating performance.

**Accommodation:** CNL and AOO are to establish a notification system and communication protocol, as part of a Long-Term Relationship Agreement, that ensures AOO are informed of any unplanned incidents at the facility, as well as the status of the corrective action being carried out to address incidents when necessary.

**Comment:** In order to be appropriately engaged and accommodated, AOO requires access to adequate capacity funding to support involvement in key activities connected to the site's operating performance.

**Accommodation:** As part of a Long-Term Relationship Agreement, provide the AOO with adequate capacity support to meaningfully participate in CNSC regulatory oversight and compliance monitoring programs at the CNL Chalk River facility and activities of interest across the AOO Settlement Area connected to CNL, including transportation routes for materials connected to the facility.

**Comment:** Presently there are strong reporting requirements for CNL to provide data to the CNSC, however, there are no reporting requirements in place for informing AOO of the performance of the facility.

**Accommodation:** As part of the communication and notification protocol within a Long-Term Relationship Agreement, establish a process between CNL and AOO on how information regarding the CRL facility's performance will be communicated to AOO on a regular, consistent basis and with data that is plain-language and accessible for AOO.

## 4.3 Safety Analysis

The safety analysis SCA covers the maintenance of the safety analyses that supports the overall safety case. Safety analysis is a systematic evaluation of the potential hazards associated with the conduct of a proposed activity or facility and considers the effectiveness of preventative measures and strategies in reducing the effects of such hazards.

The following specific areas comprise this SCA at CRL:

- Deterministic Safety Analysis
- Hazard Analysis
- Probabilistic Safety Analysis
- Criticality Safety
- Severe Accident Analysis

According to the CNSC, the CNL Chalk River facility has been in full compliance for its operating performance and received a compliance rating of “satisfactory” from 2012 to present.

CNL is required by the *Class I Nuclear Facilities Regulations* to prepare formal Safety Analysis Reports (SAR) for Class I nuclear facilities. CNL has implemented a safety analysis program that ensures systematic evaluation of the potential hazards associated with the conduct of a proposed activity or facility and to consider the effectiveness of preventative measures and strategies in reducing the effects of such hazards.

CNSC conducted desktop reviews of CNL’s safety analysis documentation and conclude that CNL’s Safety Analysis SCA at CRL met applicable regulatory requirements and CNSC expectations.

Since 2012, CNSC staff’s verification activities in this area were focused on the NRU reactor. CNL has recently revised the NRU SAR. The revised SAR incorporated and integrated results of previously submitted analyses which CNSC staff had reviewed and provided feedback to CNL during the course of the NRU SAR update process. CNL submitted a final NRU SAR in March 2016. CNSC staff reviewed the SAR and concluded that it meets regulatory requirements.

CNL is required to implement and maintain a nuclear criticality safety program compliant with RD-327, *Nuclear Criticality Safety*. CNL has developed a suite of nuclear criticality safety program documents acceptable to CNSC staff. CNL maintains its criticality safety documents (CSD), some temporary amendments, and is in the process of finalizing one additional CSD for use. CNL continuously develops other CSDs to address future potential operations with fissionable materials at CRL.

CNSC staff reviewed CNL’s criticality safety program and changes to the CSDs as they were updated by CNL. Based on the reviews, CNSC staff confirm that CNL continues to make changes and updates to CSDs that are in accordance with the requirements of RD-327. Therefore, CNSC staff conclude that CNL’s criticality safety measures meet the regulatory requirements.

As the NRU reactor transitions from operation to shutdown, then storage with surveillance, the focus of CNSC staff related to the Safety Analysis SCA will change significantly. As CNL progresses through the stages of the shutdown of the NRU reactor, CNL will provide revisions to the safety analyses and operational documents as appropriate. After the NRU reactor is shut down, defueled and dewatered, the scope of credible reactor accidents will decrease significantly, and the PSA will eventually be phased out.

CNL will be required to continually update its safety analyses to reflect the current operational state of all facilities on site. CNSC staff will continue to monitor CNL’s performance in this SCA through regulatory oversight activities, including onsite inspections and desktop reviews of relevant program documentation, new and/or revised safety analyses and criticality safety documents.

CNSC staff are implementing the standardized licence conditions for this licence.

Two licence conditions are included in the proposed licence for this SCA. The conditions require CNL to undertake the following:

- Implement and maintain a safety analysis program
- Implement and maintain a nuclear criticality safety program

Compliance verification criteria for both licence conditions are included in the draft LCH.

**Comment:** There is presently no notification system or communication protocol in place for informing AOO of the status of the safety performance of the facility, or of informing AOO of any changes to the facility's safety performance.

**Accommodation:** CNL and AOO are to establish a notification system and communication protocol that ensures AOO are informed of any unplanned incidents at the facility, as well as the status of the corrective action being carried out to address the incident, when necessary.

**Comment:** In order to be appropriately engaged and accommodated, AOO requires access to adequate capacity funding to support involvement in key activities connected to the site's operating performance.

**Accommodation:** Provide the AOO with adequate capacity support to meaningfully participate in CNSC regulatory oversight and compliance monitoring programs at the CNL Chalk River facility and activities of interest across the AOO Settlement Area connected to CNL, including safety planning for transportation routes.

**Comment:** Presently there are strong reporting requirements for CNL to provide data to the CNSC, however, there are no reporting requirements in place for informing AOO of the safety performance of the facility.

**Accommodation:** As part of the communication and notification protocol, establish a process between CNL and AOO on how information regarding the CRL facility's safety performance will be communicated to AOO on a regular, consistent basis and with data that is plain-language and accessible for AOO.

## 4.4 Radiation Protection

The radiation protection SCA covers the implementation of a radiation protection (RP) program in accordance with the *Radiation Protection Regulations*. The program must ensure that contamination levels and radiation doses received by individuals are monitored, controlled and maintained as low as reasonably achievable (ALARA).

The following specific areas comprise this SCA at CRL:

- Application of ALARA
- Worker Dose Control

- Radiation Protection Program Performance
- Radiological Hazard Control
- Estimated Dose to the Public

According to the CNSC, the CNL Chalk River facility has been in full compliance for its operating performance and received a compliance rating of “satisfactory” from 2012 to present.

The *Radiation Protection Regulations* require licensees to establish a radiation protection program to keep exposures ALARA, taking social and economic factors into account, through the implementation of a number of control programs, including the following:

- Management control over work practices
- Personnel qualification and training
- Control of occupational and public exposures to radiation
- Planning for unusual situations

During the current licensing period, CNL has implemented an RP program at CRL that protected the health and safety of persons and ensured occupational exposures were below regulatory dose limits and maintained ALARA.

Based on CNSC assessment, the Commission concluded that CNL’s Radiation Protection SCA at CRL met all applicable regulatory requirements and CNSC expectations. CNSC staff are satisfied that licensed activities at CRL are conducted in a safe manner. The RP program at the CRL has been effectively implemented to ensure doses received by workers are controlled, monitored and maintained well below regulatory limits. CNL operates a CNSC licensed dosimetry service to monitor, assess, record and report doses received by employees and contractors as a result of licensed activities at the CRL. The available types of dosimetry, as well as the criteria and procedures for use, are implemented through the RP program. The implementation of the RP program relating to personnel dosimetry meets CNSC regulatory requirements and is found to be satisfactory.

At CRL, workers, including CNL employees and contractors conducting work activities which present a reasonable probability of receiving an occupational dose greater than 1 millisievert (mSv)/year are considered Nuclear Energy Workers (NEWs). Workers whose job functions do not present a reasonable probability of receiving an occupational dose greater than 1 mSv/year are considered non-NEWs.

During the period from January 1, 2012 to June 30, 2017, no radiation exposures reported at the CRL site exceeded a regulatory dose limit for a NEW:

- The maximum annual effective dose received by a NEW over this period was 12.24 mSv (approximately 24% of the annual 50 mSv dose limit). This dose was received in 2016 by a nuclear operator of the NRU reactor.

- The maximum equivalent (skin) dose received by a NEW over this period was 21.73 mSv (approximately 4% of the annual 500 mSv dose limit). This dose was received in 2014 by a nuclear operator of the NRU reactor.
- The maximum equivalent (extremity) dose received by a NEW over this period was 72.10 mSv (approximately 14% of the annual 500 mSv dose limit). This dose was received in 2013 by a radiation surveyor trainee working in the Molybdenum-99 Production Facility.
- The maximum individual effective dose received by a NEW during the 5-year dosimetry period of 2011–2015 was 37.78 mSv (38% of the 100 mSv per 5-year dose limit) by a nuclear operator of the NRU reactor.

During the period from January 1, 2012 to June 30, 2017, no radiation exposures reported at the CRL site exceeded a regulatory dose limit for a non-NEW. From January 1, 2012 to June 30, 2017, effective dose was assessed for approximately 10,500 non-NEWs. The maximum effective dose received by a non-NEW was 0.49 mSv per year or approximately 49 percent of the regulatory limit for effective dose of 1 mSv in a one-year dosimetry period.

The average and maximum effective and equivalent doses, along with the effective dose distribution data, demonstrate that CNL-CRL is maintaining control over worker exposures; on average, approximately 92% of the monitored workers received less than 1 mSv of effective dose per year for January 1, 2012 to June 30, 2017.

Amendments to the *Radiation Protection Regulations* were proposed in 2013 in order to harmonize the Regulations with updated international standards, clarify requirements and address gaps based on lessons learned since the regulations came into force. As the regulations are amended, CNL will review the RP program to ensure continued compliance with the revised regulations.

CNL will continue to update radiation protection documentation in response to changes in future work planned at CRL. As many facilities and buildings are planned to be decommissioned and/or repurposed, CNL will continue to re-evaluate the radiological hazards in these areas to ensure the workers' protection is optimized.

Based on CNSC staff assessments of CNL's application, supporting documents and past performance, CNSC staff conclude that CNL continues to implement and maintain an effective radiation protection program at CRL in accordance with regulatory requirements.

One licence condition is included in the proposed licence for this SCA. This condition requires CNL to implement and maintain a radiation protection program which includes a set of action levels. Compliance verification criteria for this licence condition are included in the draft LCH.

**Comment:** The application outlines safe exposure doses for CRL employees and members of the public, but does not appropriately account for the heightened exposure Algonquin people may experience as a result of harvesting and being active on the land around the facility.

**Accommodation:** AOO wishes to be engaged in regulatory oversight and response to the following at the CRL facility:

- Radiation exposure, especially exposure experienced by Algonquin people either working or harvesting in or around the licensed facilities
- Radiation exposure for Algonquin people who may work at licensed facilities and who also work or harvest around licensed facilities and may therefore have heightened exposure

**Accommodation:** Provide the AOO with adequate capacity funding to meaningfully engage in reviewing and commenting on effective dose limits set out by the CNSC to protect the health of Indigenous harvesters, land users, cultural heritage workers, emergency responders, and CRL staff.

## 4.5 Environmental Protection

The CRL site is situated along the southern shore of the Kitchissippi (Ottawa River). There are numerous tributaries, lakes and wetlands on the site. The Kitchissippi is a high order river that drains an area of 146,300 km<sup>2</sup>. There are at least 85 known species of fish found in the Kitchissippi. These are primarily resident freshwater species such as lake sturgeon, muskellunge, walleye, northern pike, but American eel are also present. Due to the diversity and abundance of fisheries resources on the Kitchissippi, it has been an important fishing resource for the members of AOO. These fish are caught for recreational, commercial, ceremonial and spiritual purposes. While the river itself is used extensively, fishing and hunting on the CRL properties is prohibited, infringing the AOO's Aboriginal rights.

The CRL site is mostly forested with deciduous, conifer and mixed stands. Tree species typical of the region are found on the property, including black spruce, white pine, red pine, jack pine, white birch, yellow birch, eastern hemlock, poplar, red maple, sugar maple, beach, and red oak. A variety of wildlife is also found onsite including moose, deer, black bear, raccoon, fox, beaver, mink, fisher, marten and otter. A variety of migratory birds also nest in the region, with waterfowl using habitat in the wetlands on the property.

Environmental protection at the CRL facilities is accomplished through an Environmental Management System (EMS) that is registered to ISO 14002:2004 (most recently re-registered in 2016). The EMS is used to identify all connections to the environment of facilities and activities at CRL. The system tracks all controls in place to mitigate impacts, and is used to establish environmental objectives and targets. The EMS is harmonized with the Integrated Environmental Monitoring Program (IEMP), which is used to evaluate the environmental performance of CRL. The IEMP monitors three primary contaminant pathways: Effluent, groundwater, and environmental. Monitoring these pathways allows CRL to track releases to environmental receptors. Data collection through the IEMP is used to confirm predictions

from the Environmental Risk Assessment (ERA – the CRL is in compliance with CSA N288.6, *Environmental Risk Assessment at Class I Nuclear Facilities and Uranium Mines and Mills*) and to inform further evaluations of Human Health and Ecological Risk Assessment. According to the CNL, all the environmental protection programs and activities (e.g. EMS, IEMP, and ERA) are designed to confirm that the releases of contaminants remain as low as reasonably achievable (ALARA).

Radiological contamination of the atmospheric environment is primarily from releases of Ar-41, I-131 and tritium. Liquid releases, typically occur in the form of cesium-137 and tritium. In general, environmental contamination observed in groundwater and surface water have remained relatively stable at the CRL, with some minor improvements over the past six years. With the planned shutdown of Mo-99 production (in 2016) and the NRU (in 2018), CRL has estimated that total radioactive emissions from all activities may decrease by 85–95%. Limits for radiological emissions in atmospheric and effluent releases for the CNL are based on licence limits (Appendix I: License Conditions Handbook, CNL, 2017). Based on these limits, the CRL site detected the following exceedances:

- 2011 – 2 action level exceedances
- 2012 – no action level exceedances
- 2013 – 30 action level exceedances
- 2014 – 2 action level exceedances
- 2015 – no action level exceedances
- 2016 – 2 action level exceedances

Groundwater monitoring at the CRL includes a network of 180 monitoring wells at 26 sites. These wells are focused around the Waste Management Areas, nuclear facilities, and other facilities which produce liquid wastes but have no purpose-built monitoring systems. Results of groundwater monitoring throughout the CRL indicates that concentrations of contaminants are stable. At monitoring sites with the highest concentrations of contaminants, the contaminants were either stable or declining over the 5-year period from 2011–2016. According to CNL, monitoring for non-radiological contaminants have found that water quality is not adversely affected on-site.

**Comment:** There is very little information provided in the CRL application on results of monitoring. Only a general description of trends and exceedances is provided with some summary results. There is no sufficient data provided on groundwater, surface water, effluent quality, or biological monitoring to adequately assess the impacts to environmental receptors.

**Accommodation:** Additional details on results from all monitoring must be included in the application so that AOO can review the information to make a determination regarding impacts to rights and interests. Due to the breadth, depth, and technical nature of data, funding must be provided so that AOO can obtain independent technical experts to review the data and provide advice to AOO.

**Accommodation:** Maps showing the location of groundwater, surface water and sediment monitoring stations must be provided in the CRL application.

**Accommodation:** Information on methodology, effort, and results for biological monitoring (e.g. fish tissue monitoring, benthic invertebrate monitoring, mammal tissue monitoring) must be summarized and provided in the CRL application.

**Comment:** The Fisheries Act prohibits any “serious harm” to fish, defined as “the death of fish or any permanent alteration to, or destruction of, fish habitat.” Due to the cooling needs of the NRU reactor, there is fish impingement due to the water intake. Thus, the impingement and death of fish on the water intake is a clear example of serious harm.

**Accommodation:** Only general information on average annual biomass of fish impinged is provided. The CNL must provide info on sturgeon or other species impinged on the intake. Include data on total number of fishes and biometric data for large bodied species. Data on seasonality of fish impingement should also be included.

**Accommodation:** To date, the CRL has been operating without a *Fisheries Act* Authorization, and, since the NRU will be shut down in 2018, it appears likely that they will never need an approval. As a result, the CNL will never need to engage in any offsetting to compensate for the impact to fisheries. Moreover, the CNL will never need to consult with AOO on the offsetting strategy. AOO strongly disagrees with the current state of affairs, whereby no *Fisheries Act* Authorization has been granted. The AOO recommends that an assessment be completed before the NRU is shut down and that offsetting activities be completed by the CNL.

**Comment:** CNL established an Environmental Stewardship Council in 2006. The objective of the council is to build working relationships and create opportunities for open dialogue between various stakeholder groups, local communities, and CNL. The council meets three times per year to discuss environmental practices, monitoring and concerns at CRL. Currently, the Algonquins of Ontario are not part of CNL’s Environmental Stewardship Council.

**Accommodation:** AOO would like to be a member of CNL’s Environmental Stewardship Council in order to provide input into CNL’s environmental management programs and receive regular updates from CNL. AOO believes the role of the Environmental Stewardship Council should be expanded to provide the council with increased oversight and decision-making powers over CNL’s environmental management program where appropriate. For example, the Environmental Stewardship Council could lead initiatives on the CRL site related to conservation and stewardship, such as a Species at Risk (SAR) program for SAR turtles onsite.



## 4.6 Emergency Management and Fire Protection

CNL identifies that they have implemented emergency plans and emergency preparedness programs for emergencies and non-routine conditions. Section 11 of the CNL application summarizes the emergency management and fire protection past performances and identifies future plans.

- Since the effective date of the current CRL licence, the Emergency Operation Center (EOC) activated on 17 occasions. In each situation, there was no significant radiological or chemical releases.
- Implementation and validation of a Severe Accident Management Guidelines (SAMG) program, was required by the CNSC following the Fukushima accident.
- CRL EOC underwent a number of upgrades, including Severe Accident Management Upgrades.
- CRL adopted the Ontario Provincial Incident Management System, which provides a standard framework for responding to an emergency.
- CRL has focused on the integrated response to the exercises, through interoperability, at the incident area, EOC, and off-site centers. External first responders (fire, emergency medical services, and police) were invited to participate.
- In 2015, potassium iodide (KI) pills and information on medical use was distributed to all permanent residents within the CRL Primary Zone (9 km) both in Ontario and Quebec. The CRL secondary zone (50 km) was pre-stocked with KI pills. Measures were put in place to ensure new residents were provided KI pills. CRL notes that during the next licensing period, there will be no requirement for distribution or stockpiling of KI pills because of the reactor decommissioning.
- Several improvements to fire response have been made, including: Mapping and signage of 130 roads in the outer area; increased fire response shift complement; emergency response apparatus, equipment, and qualification improvements; construction of a firefighter training building, confined space training simulator; and the five-year drill plan was amended to include a requirement for annual fire response drills (CNL, 2017).

**Comment:** The EOC has been activated 17 times during the current licence period, with the first occurrence on November 30, 2011, and this does not include occurrences that did not trigger the EOC. AOO members have an interest from an information and safety perspective in knowing whenever any non-routine activities occur on the site, including, but not limited to, spills, alarms, fires and threats.

**Accommodation:** It is recommended that CNL work with AOO to implement processes that ensure any non-routine activities, especially those that activate the EOC, are effectively communicated to AOO members, to their satisfaction. The level of notification may vary depending on the non-routine activity. Any activity that activates the EOC will require a more rapid notification system.

**Accommodation:** CNL Emergency Preparedness (Program) and fire protection program should include at least one AOO representative to provide input and act as a liaison between the activities occurring at CNL and the AOO members. The AOO representative would obtain a full understanding of the CRL

emergency preparedness and fire protection operations and be able to accurately and effectively communicate ongoing activities with AOO members.

#### 4.6.1 Extreme Weather and Natural Hazards

Extreme weather events and natural disasters have the potential to impact CRL and cause accidents or malfunctions. As demonstrated by the Fukushima Daiichi nuclear disaster, natural hazards can pose devastating consequences for nuclear facilities. While AOO recognizes the differences between CRL and Fukushima, it is still important to consider that extreme weather events have the potential to impact CRL. Furthermore, climate change is predicted to increase the frequency and intensity of extreme weather events, including floods, ice storms, tornadoes, hurricanes, wild fires, etc. (IPCC, 2004). This represents increased risks for CRL and requires proper contingency planning for all potential extreme weather and natural hazard scenarios.

CRL falls within the Western Quebec Seismic Zone (WQSZ). The pattern of historical seismic activity recorded by the Canadian seismograph network has shown the area to be relatively active for low to mid-level earthquakes (NRCAN, 2016). On May 17, 2013 a magnitude 5.2 earthquake occurred near Shawville, Quebec (followed by a magnitude 4.1 aftershock) (NRCAN, 2016). CRL is approximately 100 km from the epicentre of that quake, and would have experienced seismic activity. The largest recorded earthquake in the WQSZ was a magnitude 6.2 earthquake which occurred in 1935 near Temiscaming, Ontario (200 km from CRL) (NRCAN, 2017). These historic events demonstrate the potential for seismic activity to impact CRL and highlight the need for effective contingency planning for earthquakes at CRL.

**Comment:** CRL must ensure that effective contingency plans are in place for extreme weather and natural hazard scenarios that may impact or damage CRL infrastructure. These incidents are expected to increase in frequency and intensity as a result of climate change, so proper contingency planning is crucial. In particular, CNL should provide information regarding the amount of time in which facilities can operate on back-up power. In the event of a natural hazard (e.g. ice storm, hurricane, tornado, earthquake), CRL could lose power for a prolonged period of time. AOO would also like to know if any seismic monitoring occurs at CRL.

**Accommodation:** CNL should provide AOO with more detailed information regarding extreme weather and natural hazard contingency planning. Since the potential for extreme weather and natural hazards is high in the area, it is essential that plans are in place to prevent accidents or malfunctions at CRL. AOO would like more information on how the Project would operate under a loss of power scenario and any potential environmental effects, as well as information regarding how seismic activity is monitored by CNL.

### 4.7 Waste Management

CNL identifies that they operate a Waste Management program applicable to all phases of the waste management lifecycle and associated business needs. CNL outlines their commitment to waste characterization and waste minimization over the current licence period.

Section 12 of the application also outlines CNL’s strategy for decommissioning the site, which they claim will proceed “based on sound waste management and environmental principles” (CNL, 2017, p. 105). A comprehensive preliminary decommissioning plan for the CRL site exists and is required to be updated as required and at a minimum frequency of at least every 10 years.

Waste from the decommissioning work is stored onsite in existing waste management facilities until a permanent disposal facility is available. The strategy proposes that the contaminants will be managed in-situ when they have decayed or attenuated to a level which meets the end-state criteria within a 300-year period. Contaminants that do not meet end-state criteria will be retrieved and placed in appropriate disposal facilities. Contaminated groundwater that will not meet the end-state criteria will be remediated using either pump-and-treat or permeable reactive barrier technologies (CNSC, 2017).

**Comment:** The connection to and reliance upon the land is of the utmost importance to AOO members. There is a possibility that waste stored at the CNL site could negatively impact the quality of surface and groundwater and/or contaminate the soil. While we recognize that waste is currently being stored at the CNL site, CNL is responsible to demonstrate that the activity has not and will not have any impact on groundwater, surface water and soils. Where impacts are found, the CNL is responsible for remediation.

**Accommodation:** AOO must be involved and consulted in any decisions related to nuclear waste management in the unceded AOO Settlement Area. AOO should also be directly involved in the monitoring and oversight of nuclear waste management through employment, training and other capacity building initiatives. This will allow AOO to make informed decisions on nuclear waste management issues in the AOO Settlement Area, including the NSDF proposal.

## 4.8 Security

The Physical Security program applies to the operation and activities that affect the security in and around CNL sites. Since 2012, CNL had a number of reportable events related to security and “in all cases, the events were either minor in significance and closed upon corrective actions being implemented or administrative in nature which resulted in negligible risk.” (CNSC Staff, 2017, p. 71). CRL has a full-time Nuclear Response Force in place in accordance with regulatory requirements. CNL Security conducts training over the course of each fiscal year. Security improvements will continue in the following areas during the next licence period:

- Physical and Integrated Security: Primary focus on communication, integration, and culture
- System upgrades
- Continued participation in force-on-force exercise (CNL, 2017)

CNL also has a Cyber Security program that covers all cyber assets. Cyber Security program improvements will continue during the next licence period (CNL, 2017).

**Comment:** The Physical Security program is of the utmost importance in ensuring the safety of CRL and the surrounding residents. AOO commends CNL for the security work they have implemented and supports the CNSC licence condition requiring CNL to implement and maintain a security program.

**Accommodation:** CNL's Physical Security program should include at least one AOO representative to provide input and act as a liaison between the security initiatives occurring at CRL and AOO members. This will improve communication and education between the parties and ensure accurate information is disseminated to AOO members.

## 4.9 Safety and Non-Proliferation

The Nuclear Materials and Safeguards Management program applies to all nuclear material and safeguards management activities performed at CNL facilities, as required by the Government of Canada and other relevant agreements (CNL, 2017; CNSC Staff, 2017). This program covers procurement, receipt, disposition, transfer, accounting, safeguards management, storage, and inventory management of nuclear materials (CNL, 2017).

CNL proposes to update the Nuclear Materials and Safeguards Management procedures over the next licence period and will work with both the CNSC and IAEA to ensure that CNL remains in compliance with all regulatory requirements.

**Comment:** AOO supports the CNSC recommended condition requiring CNL to implement and maintain a safeguards program as an integral component of the facility's operation.

## 4.10 Packaging and Transport

CNL operates a Transportation of Dangerous Goods program that "provides an operational framework for the safe transport of dangerous goods by conforming to all applicable laws, regulations, company policies, and procedures." (CNL, 2017, p. 116). This program applies to "any activities involving the transportation of dangerous goods to or from any of the CNL sites, by all personnel, and all modes of transport." (CNL, 2017, p. 116).

CNL will continue to update the Transportation of Dangerous Goods program as changes are made to the International Atomic Energy Agency safety standards and changes to Transport Canada's Transportation of Dangerous Goods Regulations.

**Comment:** CNL's Transportation of Dangerous Goods involves the transportation of nuclear substances to and from the facility across the unceded AOO Settlement Area. We had, and continue to have, deep connections to the land. The transportation of nuclear substances across the unceded AOO Settlement Area is a significant risk to the land, the environment, and traditional land uses (e.g. hunting, fishing, trapping, and harvesting).

**Accommodation:** CNL's Transportation of Dangerous Goods program should include at least one AOO member representative to act as a liaison between the transportation processes undertaken by CNL and the AOO members. The AOO representative will provide input on the processes and act as a communications liaison with AOO members.

**Accommodation:** CNL must work with AOO to ensure that any abnormal activities occurring while carrying out the transportation of nuclear substances, in accordance with the Transportation of Dangerous Goods program, is effectively communicated.

**Accommodation:** CNL should enter into an agreement with AOO to provide financial compensation for the risk to the land, the environment and traditional land uses associated with the transportation of nuclear substances (including HEU) across the unceded AOO settlement Area.

#### 4.10.1 Nuclear Material Repatriation

The United States of America (USA) has been supplying CRL with highly enriched uranium (HEU) to fuel research reactors and manufacture targets for over 50 years. The HEU is permanently repatriated to the USA in the form of used reactor fuel, target residue material, and scrap HEU material. CNL has been a participant in the Material Management and Minimization program since 2010, which is overseen by the United States Department of Energy, National Nuclear Security Administration, to safely repatriate HEU fuel to the USA (CNL, 2017).

Over the course of the proposed licence period the licence renewal application states, "CNL plans to continue safe and secure repatriation activities to assist Canada's commitment in support of the Global Threat Reduction initiative with appropriate approval and oversight by CNSC staff." (CNL, 2017, p. 121).

**Comment:** Repatriation efforts involve the transportation of HEU from the facility across the unceded AOO Settlement Area to the USA. We had, and continue to have, deep connections to the land. The transportation of HEU across the unceded AOO Settlement Area is a significant risk to the land, the environment, and traditional land uses (e.g. hunting, fishing, trapping, and harvesting).

**Accommodation:** CNL should meet with AOO members to discuss the Materials Management and Minimization program and the logistics for transporting HEU from CRL to the USA. AOO should have an opportunity to comment on the process and provide recommendations, as required, for improvements to lessen the impact in the unceded AOO Settlement Area.

## 5.0 Comments and Accommodations

The AOO has conducted a review of the CRL licence application and CNSC staff report with a focus on the rights and interests of AOO members. We have included in our assessment a series of comments and accommodations that the CNSC and CNL must consider. In some instances we have made information requests to CNL rather than requesting accommodation, this is noted ahead of the comment. The following section provides a summary of our comments and accommodations.

## 5.1 Environmental

As land users, the members of AOO often bear inequitably the potential dangers to health and well-being of large industrial projects. Accordingly, AOO requires a high standard of assessment, mitigation, and monitoring for any project. The CRL facilities pose a serious environmental risk to land and waters within the unceded AOO Settlement Area. For this reason, AOO provides the following comments and accommodations to ensure the environment, and the associated rights and interests of AOO members, are protected.

#	COMMENT	ACCOMMODATION
1	Monitoring of environmental receptors is crucial to ensure that potential effects from the CRL facilities are being managed effectively. This includes, but is not limited to, monitoring of groundwater, surface water, sediment, fish communities, fish tissues, and wildlife. Monitoring must be conducted in a manner that is transparent and inclusive of AOO. This will help AOO members to have confidence that components of the environment that they value are being monitored appropriately.	To ensure transparency and confidence in monitoring activities, there must be direct AOO involvement in the CRL Integrated Environmental Monitoring Program (IEMP). This could be achieved by providing funding for a full-time AOO monitor. This must include reasonable capacity funding for training. The monitor would be responsible for participating in design, implementation and reporting on the IEMP. The monitor would also be able to liaise with AOO members and leadership to share information.
2	CNL is maintaining an Environmental Management System (EMS) to manage risk and implement environmental protection measures. Environmental monitoring (e.g. water quality testing, sediment testing) for detecting any changes to environmental receptors is orchestrated through the Integrated Environmental Monitoring Program (IEMP). Currently, there is no mechanism for AOO to participate in the management of the EMS or IEMP. This includes opportunities for reviewing reports, providing input, being involved in decision making or sharing information. Likewise, whenever there are material changes to the CRL facility that would have important environmental implications (e.g. new applications, licence renewals,	To promote the effective participation of AOO within the environmental management and monitoring programs of CRL we strongly suggest the creation of a Nuclear Environmental Review Board (NERB). This board should be composed of representatives from AOO, CNSC and CNL. The NERB would be responsible for providing guidance to the operation of the EMS and IEMP. The NERB would also be responsible for reviewing annual reports, applications, licence renewals and other activities associated with the CRL. Resources must be provided to allow the NERB to dedicate the time required to complete these tasks. Secondly, the NERB should have access to funding for obtaining guidance from technical experts where appropriate.

#	COMMENT	ACCOMMODATION
	decommissioning activities etc.), AOO representatives are not able to participate effectively.	The NERB would allow for effective coordination between AOO, CNL and the CNSC. Moreover, having representatives from AOO would help ensure that the rights and interests of AOO members are upheld.
3	CNL established an Environmental Stewardship Council in 2006. The objective of the council is to build working relationships and create opportunities for open dialogue between various stakeholder groups, local communities, and CNL. The council meets three times per year to discuss environmental practices, monitoring and concerns at CRL. Currently, the Algonquins of Ontario are not part of CNL's Environmental Stewardship Council.	AOO would like to be a member of CNL's Environmental Stewardship Council in order to provide input into CNL's environmental management programs and receive regular updates from CNL. AOO believes the role of the Environmental Stewardship Council should be expanded to provide the council with increased oversight and decision-making powers over CNL's environmental management program where appropriate. The NERB model proposed in Accommodation 2 could potentially replace the Environmental Stewardship Council.
4	CRL must ensure that effective contingency plans are in place for extreme weather and natural hazard scenarios that may impact or damage CRL infrastructure. These incidents are expected to increase in frequency and intensity as a result of climate change, so proper contingency planning is crucial. In particular, CNL should provide information regarding the amount of time facilities can operate on back-up power. In the event of a natural hazard (e.g. ice storm, hurricane, tornado, earthquake), the Project site could lose power for a prolonged period of time. AOO would also like to know if any seismic monitoring occurs at CRL.	<b>Information Request:</b> CNL should provide AOO with more detailed information regarding extreme weather and natural hazard contingency planning. Since the potential for extreme weather and natural hazards is high in the area, it is essential that plans are in place to prevent accidents or malfunctions at CRL. AOO would like more information on how the facility would operate under a loss of power scenario and any potential environmental effects, as well as information regarding how seismic activity is monitored by CNL.



#	COMMENT	ACCOMMODATION
5	There is very little information provided in the CRL application on results of monitoring. Only a general description of trends and exceedances is provided with some summary results. There is no sufficient data provided on groundwater, surface water, effluent quality, or biological monitoring to adequately assess the impacts to environmental receptors.	<p><b>Information Request 5a:</b> Additional details on results from all monitoring must be included in the application so that AOO can review the information to make a determination regarding impacts to rights and interests. Due to the breadth, depth, and technical nature of data, funding must be provided so that AOO can obtain independent technical experts to review the data and provide advice to AOO.</p> <p><b>Information Request 5b:</b> Maps showing the location of groundwater, surface water and sediment monitoring stations must be provided in the CRL application.</p> <p><b>Information Request 5c:</b> Information on methodology, effort, and results for biological monitoring (e.g. fish tissue monitoring, benthic invertebrate monitoring, mammal tissue monitoring) must be summarized and provided in the CRL application.</p>
6	The Fisheries Act prohibits any “serious harm” to fish, defined as “the death of fish or any permanent alteration to, or destruction of, fish habitat.” Due to the cooling needs of the NRU reactor, there has resulted in fish impingement on the water intake. Thus, the impingement and death of fish on the water intake is a clear example of serious harm.	<p><b>Accommodation 6a:</b> Only general information on average annual biomass of fish impinged is provided. The CNL must provide info on sturgeon or other species impinged on the intake. Include data on total number of fishes and biometric data for large bodied species. Data on seasonality of fish impingement should also be included.</p> <p><b>Accommodation 6b:</b> To date, the CRL has been operating without a <i>Fisheries Act</i> Authorization, and since the NRU will be shut down in 2018, it appears likely that they will never need an approval. As a result, the CNL will never need to engage in any offsetting to compensate for the impact to fisheries. Moreover, the CNL will never need to consult with AOO on the offsetting strategy. AOO strongly disagrees with the current state of affairs, whereby no <i>Fisheries Act</i></p>



#	COMMENT	ACCOMMODATION
		Authorization has been granted. The AOO recommends that an assessment be completed before the NRU is shut down and that offsetting activities be completed by the CNL.
7	CRL represents a substantial loss of land for AOO members, this is further exacerbated by environmental degradation caused by the operations of the facility, including accidents or malfunctions.	CNL/AECL and CNSC must develop a plan to accommodate AOO for past grievances related to CRL, including the lack of consultation in siting the facility and environmental and human health impacts caused by CRL. This could be addressed within the Long-Term Relationship Agreement.
8	Due to ongoing land use restrictions and environmental risks imposed on AOO members by the operation of CRL, AOO believes a formal accommodation process should be developed between CNL/AECL and the AOO.	AECL/CNL should enter into negotiations with AOO to establish a Long-Term Relationship Agreement with the AOO to determine a formal approach to consultation and accommodation for CRL moving forward. Since CRL lies within the unceded AOO Settlement Area, a formal accommodation arrangement between AECL/CNL and the AOO is necessary.

## 5.2 Archaeological and Heritage

The following table lists comments and accommodations related to archeological sites and cultural heritage of the AOO. The accommodations will be carried out in the framework of a Long-Term Relationship Agreement between the AOO, CNL and the CNSC. The AOO would carry out fundamental archaeological research into the material culture and lifeways of their ancestors, using CRL as an outdoor laboratory for scientific experimentation into expedient stone tool technology. Through long-term research essentially “reverse-engineering” the elegant lithic technology of their ancestors, by learning to make everything their ancestors needed using local stone materials, the Algonquins will have self-taught stone tool experts among its members with the capacity to analyze and interpret archaeological collections with true scientific insight.

#	COMMENT	ACCOMMODATION
9	The Algonquins have lost a substantial part of their history through development of CRL and Deep River.	CNL/AECL should negotiate a long-term archaeological agreement with the AOO, which will provide educational, training, and research.

#	COMMENT	ACCOMMODATION
		This could be included within the Long-Term Relationship Agreement.
10	Construction of the NRU destroyed a rare Middle Woodland archaeological site. Only a small surface collection of artifacts from this site exists in the CMH in Gatineau.	The NRU collection should be studied, and the information published. CNL should install a permanent display of the NRU collection in a prominent location where employees and visitors can appreciate an Algonquin story from the past.
11	The Algonquins occupied Point au Baptême seasonally for thousands of years, in part because of its view of, and proximity to, Oiseau Rock, a sacred Algonquin Site of National significance. Over the decades, constant attrition by cottagers, campers, and employees, pedestrian and vehicular traffic, as well as systematic unauthorized artifact collection, has resulted in a severe impact to the archaeological resource. Although the cemetery has not been impacted, its status remains unresolved.	The AOO should enter a long-term protection plan agreement with CNL that would see vehicle traffic restricted from the point. Ground Penetrating Radar (GPR) should be employed at the cemetery to determine the extent and number of burials. Access to the cemetery by Algonquins is essential and, upon request, CNL should make transportation by watercraft available to Algonquins who wish to honour the sacred site.
12	The forced relocation of Algonquin people for the construction of CRL is a historic injustice that has caused long-lasting harm to AOO members. Family histories and archeological resources were lost. For example, an Algonquin man (name redacted), lost his home and livelihood when he was expropriated without compensation in 1944. A pauper, he froze to death one winter soon after (pers. Comm. K. Swayze, 2017).	CNL should enter into a long-term protection plan with the AOO to protect the small archaeological deposit that remains at the boat launch on Maskinonge Lake. CNL should work with the AOO to create an appropriate plaque or signage, to be erected at the spot this Algonquin man chose to call home. An interpretive display should be placed in a prominent place to commemorate a humble quiet man who lived Omamawinini Pimadjowin—the Algonquin Way.
13	Oral history has it that lumbering activities on the Dumoine River destroyed a medicine garden that benefited everyone.	The Environmental Protection branch of CNL should sponsor traditional environmental knowledge (TEK) by funding the establishment

#	COMMENT	ACCOMMODATION
		of medicine gardens in CRL for the benefit of local people.
14	Cross Rock, a potential site of National significance, has received no archaeological assessment to-date. It is now owned by the Four Seasons Advocacy.	AOO and CNL should arrange an archaeological assessment of Cross Rock as part of the Long-Term Relationship Agreement.
15	Due to the high archaeological potential in areas around CRL, a Stage 2 archaeological assessment should be completed on the site. AOO is interested in whether archaeological assessments were completed during the original construction of the facility.	A stage 2 archaeological assessment of the CRL site should be completed. In addition, any cultural heritage discoveries made during past construction activities at the facility should be disclosed to the AOO and documentation should be provided.
16	An adequate understanding of the current and historical Algonquin land use, occupancy and Indigenous knowledge of the area near CRL is required for CNSC and CRL to better understand the cultural value of this area for Algonquin peoples.	A fulsome Indigenous knowledge, land use, and occupancy study should be conducted near the CRL to develop a broader understanding of Algonquin values, land use and significant sites in areas affected by CRL. While this could be accomplished on a project-by-project basis, it would be more appropriate for CNSC to coordinate a larger study evaluating all Indigenous knowledge, land use, and occupancy throughout the entire unceded Algonquin Settlement Area.
17	Early postglacial archaeological sites in CRL can be given a geochronological date according to the relic shoreline they are associated with; however, conventional radiocarbon dates are rarely possible because organic artifacts cannot long survive in CRL's acidic soil or in the bioturbated upper metres of the deltaic/riverine sand deposits that characterize CRL.	In partnership with the AOO, CNL should create a commercial laboratory to offer a dating service for archaeologists, using Optical Stimulation (OSL) and Thermal Luminescence (TL). CNL should offer technical advice and laboratory training. AOO members will be trained for work in this facility.
18	To date, the number of known archaeological sites in CRL is surely a "drop in the bucket," given the size of CRL (40 km <sup>2</sup> ) and given the	CNL/AECL, in partnership with the AOO, and other corporations and individuals, should foster a long-term agreement—for seven

#	COMMENT	ACCOMMODATION
	<p>thousands of kilometres of river shore along seven successive river levels. The remaining two-thirds of CRL, which has not been disturbed by previous development or “legacy” contamination, will be left largely untouched by development for the next 500 years. The settlement-subsistence archaeological data generated by CRM archaeology to-date is insufficient for the purposes of documenting Algonquin Pre-contact history with precision.</p>	<p>generations and more—to offer archaeological field school research projects for Indigenous students that will, over time, provide a complete survey of the parts of CRL that have not been previously developed.</p>
19	<p>It has been known for some time that the heat of a campfire will alter the magnetic sensitivity of the soil under it, and further, that these “ghost features” can be easily detected by a hand-held magnetic resistivity scanner, which works best at ground level. To date, the method has not been widely applied in Ontario, but it offers a realistic way of detecting and mapping Pre-contact sites where campfires burned for generations. If this technique could be perfected with experiments at CRL, perhaps it could be made to work from a drone platform from above the forest crown. The ability to scan large areas of forested terrain for culturally produced magnetic anomalies would transform archaeological site discovery potential throughout the Algonquin Settlement lands.</p>	<p>CNL/AECL should provide technical services to the AOO to support the development of hand-held magnetic sensitivity scanners and conduct research into their effective use in archaeological prediction in CRL. The goal should be to develop a cheap, effective way of scanning large areas through drone aircraft. There is potential here for a commercial partnership, because this service is not widely offered, but it would be a popular planning service if made available.</p>

## 5.3 Human Health

The AOO presents the following comments and accommodations related to human health.

#	COMMENT	ACCOMMODATION
20	The application outlines safe exposure doses for CRL employees and members of the public, but does not appropriately account for the heightened exposure Algonquin people may experience as a result of harvesting and being active on the land around the facility.	<p>AOO wishes to be engaged in regulatory oversight and response to the following at the CRL facility:</p> <ul style="list-style-type: none"> <li>• Radiation exposure, especially exposure experienced by Algonquin people either working or harvesting in or around the licensed facilities</li> <li>• Radiation exposure for Algonquin people who may work at licensed facilities and who also work or harvest around licensed facilities and may therefore have heightened exposure</li> </ul>
21	CRL was below the dose exposure limit for both workers and members of the public. However, these numbers did not account for or speak to exposure of Algonquin citizens who may be at a higher rate of exposure as a result of traditional land and resource use in the vicinity of this and other nuclear facilities, and who may also be workers at these facilities. In addition, there is no identified reporting mechanism to affected AOO communities regarding dose exposure exceedances.	<p><b>Accommodation 21a:</b> Assess and report on safe dose exposure limits specific to Algonquin citizens, given our unique experience as harvesters and land users in an area with several nuclear facilities, and the potential for AOO citizens to be workers at these facilities.</p> <p><b>Accommodation 21b:</b> Develop a communication and notification protocol with the AOO for reporting any exceedances or abnormalities around dose exposure limits.</p>

## 5.4 Safety and Facility Issues

The AOO presents the following comments and accommodations related to safety and facility issues.

CNL is undertaking several large-scale construction and reclamation projects over the course of the proposed licence period. CNL has received major capital funding from AECL to enable the successful revitalization and transformation of the CRL site. CNL is focused on site revitalization through reducing CRL's nuclear legacy waste liabilities and constructing new research facilities to transform the CRL site as a sustainable world class nuclear laboratory focused on innovation (CNL, 2017).

#	COMMENT	ACCOMMODATION
22	CNL is undertaking large scale construction and reclamation projects on site during this licence period. CNL does not mention partnering with local Indigenous groups in their efforts to revitalize, rehabilitate and transform the CRL site. AOO would like to be involved and informed regarding remediation activities on the site.	Since CRL itself occupies unceded Algonquin land, CNL must engage with AOO moving forward as a way to accommodate for the lack of consultation and accommodation in the original siting of the facility. CNL should provide opportunities for local Indigenous groups like the AOO to become involved in the numerous construction and reclamation projects planned for this licence period as a way to share the benefits of CRL equitably.
23	The decommissioning and dismantlement process for the NRU reactor presents potential risks to the environment, depending on the method used for decommissioning. Also, CNL does not specify where the waste from the NRU reactor will be stored after dismantlement.	<b>Information Request:</b> CNL should provide a detailed plain language summary of how the NRU will be decommissioned and where and how they plan to dispose of the radioactive and hazardous waste from the NRU reactor. AOO should have an opportunity to provide input into the decommissioning, dismantlement and disposal processes for the NRU reactor.
24	Notification systems for the performance of safety and control areas including any incidents and exceedances between the facility and CNSC appears to be clear and performing well. However, there is no mention of any type of communication or notification systems in place between either the CRL or the Commission and the AOO.	Establish a communication protocol between the AOO, the CNSC and CRL to ensure appropriate notification, consultation, and accommodation is occurring to address matters that include, but may not be limited to, facility operations, performance, exceedances, and accidental releases.
25	AOO must be adequately and appropriately informed, consulted, and accommodated in the matter of the Near Surface Disposal Facility (NSDF) to ensure adequate mitigations and accommodations are put in place to protect AOO rights and interests.	AOO is to be informed and consulted according to the Consultation Process Interim Measures Agreement or other applicable consultation protocol(s) throughout the lifecycle of the NSDF project from the environmental assessment and planning all the way up to post-closure monitoring.
26	AOO must be adequately and appropriately informed, consulted, and accommodated in the matter of the SMR development on the	Request for Expressions of Interest on SMRs and any follow-up project planning processes, including, but not limited to, request for

#	COMMENT	ACCOMMODATION
	CRL site to ensure adequate mitigations and accommodations are put in place to protect AOO rights and interests.	qualifications, request for proposals, licensing applications, and permitting, must include evaluation criteria regarding Indigenous engagement, consultation, procurement, and accommodation measures. This includes specific evaluation criteria around consulting and engaging AOO in instances of projects.
27	In order to be appropriately engaged and accommodated, AOO requires access to adequate capacity funding to support involvement in key activities connected to the site's operating performance.	Provide the AOO with adequate capacity support to meaningfully participate in CNSC regulatory oversight and compliance monitoring programs at the CNL Chalk River facility and activities of interest across the AOO Settlement Area connected to CNL, including safety planning for transportation routes.
28	Presently there are strong reporting requirements for CNL to provide data to the CNSC, however, there are no reporting requirements in place for informing AOO of the safety performance of the facility.	As part of the communication and notification protocol, establish a process between CNL and AOO on how information regarding the CRL facility's safety performance will be communicated to AOO on a regular, consistent basis and with data that is plain-language and accessible for AOO.
29	The connection to and reliance upon the land is of the utmost importance to AOO members. There is a possibility that waste stored at the CNL site could negatively impact the quality of surface and groundwater and/or contaminate the soil. While we recognize that waste is currently being stored at the CNL site, CNL is responsible to demonstrate the activity has not and will not have any impact on groundwater, surface water and soils. Where impacts are found, CNL is responsible for remediation.	AOO must be involved and consulted in any decisions related to nuclear waste management in the unceded AOO Settlement Area. AOO should also be directly involved in the monitoring and oversight of nuclear waste management through employment, training and other capacity building initiatives. This will allow AOO to make informed decisions on nuclear waste management issues in the AOO Settlement Area, including the NSDF proposal.
30	The Physical Security program is of the utmost importance in ensuring the safety of CRL and surrounding residents. AOO commends CNL	CNL's Physical Security program should include at least one AOO representative to provide input and act as a liaison between the security

#	COMMENT	ACCOMMODATION
	for the security work they have implemented and supports the CNSC licence condition requiring CNL to implement and maintain a security program.	initiatives occurring at CRL and AOO members. This will improve communication and education between the parties and ensure accurate information is disseminated to AOO members.
31	CNL's Transportation of Dangerous Goods involves the transportation of nuclear substances to and from the facility across the uncaded AOO Settlement Area. We had, and continue to have, deep connections to the land. The transportation of nuclear substances across the uncaded AOO Settlement Area is a significant risk to the land, the environment, and traditional land uses (e.g. hunting, fishing, trapping, and harvesting).	<p><b>Accommodation 31a:</b> CNL's Transportation of Dangerous Goods program should include at least one AOO member representative to act as a liaison between the transportation processes undertaken by CNL and AOO members. The AOO representative would provide input on the processes and act as a communications liaison with AOO members.</p> <p><b>Accommodation 31b:</b> CNL must work with AOO to ensure that any abnormal activities occurring while carrying out the transportation of nuclear substances, in accordance with the Transportation of Dangerous Goods program, is effectively communicated.</p> <p><b>Accommodation 31c:</b> CNL should enter into an agreement with AOO to provide financial compensation for the risk to the land, the environment and traditional land uses associated with the transportation of nuclear substances (including HEU) across the uncaded AOO settlement Area.</p>
32	Nuclear Repatriation efforts involve the transportation of HEU from the facility across the uncaded AOO Settlement Area to the USA. We had, and continue to have, deep connections to the land. The transportation of HEU across the uncaded AOO Settlement Area is a significant risk to the land, the environment, and traditional land uses (e.g. hunting, fishing, trapping, and harvesting).	CNL should to meet with AOO members to discuss the Materials Management and Minimization program and the logistics for transporting HEU from CRL to the USA. AOO should have an opportunity to comment on the process and to provide recommendations, as required, for improvements to lessen the impact in the uncaded AOO Settlement Area.



## 5.5 Consultation and Accommodation

The AOO presents the following comments and accommodations related to consultation and accommodation.

#	COMMENT	ACCOMMODATION
33	AOO strongly disagrees with CNSC staff's conclusion that the Duty to Consult is not triggered by this licence application, and the notion that the Aboriginal rights of AOO members will not be impacted by CRL over this ten-year licence period.	The Duty to Consult must be formally triggered. CNSC and CNL must develop an appropriate consultation and accommodation plan to address the past, present and future impacts to AOO members and their Aboriginal rights as a result of CRL.
34	Currently there is no formal accommodation agreement in place between AECL/CNL and the AOO regarding the past, present and future operation of CRL and the associated impacts and risks.	AECL/CNL should enter into negotiations with AOO to establish a Long-Term Relationship Agreement with the AOO to determine a formal approach to consultation and accommodation for CRL moving forward. Since CRL lies within the unceded AOO Settlement Area, a formal accommodation arrangement between AECL/CNL and the AOO is necessary.
35	The CRL site is located on Traditional Territory within the unceded AOO Settlement Area. This is an area that is currently undergoing a Treaty negotiation process. Due to the nature of the work, equipment and materials at the site, it will remain under the control of the jurisdiction. While this is likely the most appropriate choice moving forward, it represents a gap in the AOO Settlement Area.	The Government of Canada and AOO should develop a lease arrangement between AOO, CNSC and AECL for the use of the lands for the CRL site. This would be a form of off-setting for the loss of use and access because of the CRL facilities.
36	There is presently no notification system or communication protocol in place for informing AOO of any unplanned events occurring at the facility, or of informing AOO of any changes to the facility's operating performance.	CNL and AOO are to establish a notification system and communication protocol that ensures AOO are informed of any unplanned incidents at the facility, as well as the status of the corrective action being carried out to address any incidents when necessary.
37	In order for AOO to meaningfully participate and contribute to management system and other safety and control framework activities	Provide adequate capacity support to meaningfully participate in management system and other safety and control framework

#	COMMENT	ACCOMMODATION
	at the site, adequate resources and capacity funding must be allocated to these activities.	activities, including the integration of Indigenous knowledge, land, and resource use into the CNSC's safety and control framework activities.

## 5.6 General

AOO presents the following general comments in relation to the CRL licence application.

#	COMMENT	ACCOMMODATION
38	The current configuration of the management system does not mention or include a process for how impacted Indigenous communities, including the communities represented by AOO, are notified or engaged in the implementation of the management system.	Establish a communications protocol for informing Indigenous communities of any safety and control framework activities, including management system corrective actions happening within the AOO Settlement Area.
39	The timeline for completing the review of the Chalk River Licence Application was not conducive to a fulsome review and does not account for the time needed to advance the report through AOO's internal review process with our technical staff and elected officials.	CNSC should lengthen regulatory timelines to accommodate AOO's internal review process and allow AOO's technical team to undertake a more fulsome review of the materials. One month is simply not sufficient time to review materials effectively.
40	As part of CNSC's licensing approval process, the Commission regularly attaches binding conditions of approval to a license. To our knowledge, the CNSC has never imposed conditions around Indigenous engagement and accommodation for a licensee. The AOO believes that in the case of CRL such a condition is required. The AOO does not wish to impede the relicensing of CRL, we just desire a more formal approach to consultation and engagement with our organization and members.	The AOO requests that the CNSC impose a condition upon the licence for CRL that CNL must make reasonable efforts to establish a formal consultation and accommodation arrangement with the AOO in the form of a Long Term Relationship Agreement.

## 6.0 Conclusion

We appreciate the opportunity provided to us by the CNSC to provide perspectives regarding CRL and other nuclear licensing that affects the health, environment, well-being, and livelihoods of Algonquin citizens. We believe that moving forward, the CNSC and CNL should consider integrating the accommodations presented in the body of this report into their management and oversight regimes. The following list provides a high-level overview of our suggested accommodations:

- Formal accommodation agreements for past, present and future impacts on AOO Aboriginal rights and interests through the development of a Long-Term Relationship Agreement
- Involvement of the AOO in the ongoing environmental, cultural heritage, and human health monitoring in and around CRL and along transportation routes
- Accessible information for Indigenous peoples, including Algonquin citizens, including communications protocols for informing communities about monitoring results, participation opportunities, incidents such as spills, accidents or malfunctions, and involvement in emergency planning and response
- A framework for addressing the cumulative effects of CNSC-regulated projects (e.g. NPD reactor, NSDF, etc.) and other activities in the region that affect AOO rights and interests across the unceded AOO Settlement Area
- Collaborative decision-making with AOO, based on nation-to-nation relationships and the obligation to secure free, prior and informed consent. This decision making must recognize and strengthen the jurisdiction that the AOO have with respect to the environment and culture
- Rules and criteria to encourage transparency, accountability and credibility and to encourage good science and Indigenous knowledge-based decisions
- To promote the effective participation of AOO within the environmental management and monitoring programs of CRL, we strongly suggest the creation of a Nuclear Environmental Review Board (NERB). This board should be composed of representatives from AOO, CNSC and CNL. The NERB would be responsible for providing guidance to the operation of the EMS and IEMP. The NERB would also be responsible for reviewing annual reports, applications, licence renewals and other activities associated with the CRL. Resources must be provided to allow the NERB to dedicate the time required to complete these tasks. Secondly, the NERB should have access to funding for obtaining guidance from technical experts where appropriate.
- The AOO requests that the CNSC impose a condition upon the licence for CRL that CNL must make reasonable efforts to establish a formal consultation and accommodation arrangement with the AOO in the form of a Long Term Relationship Agreement.

We provide this set of appropriate accommodations that will enable us to work with the CNSC and CNL to move forward in a way that ensures Algonquin rights and interests are protected and promoted. We view this as an opportunity to set the stage for a productive relationship between the AOO, CNSC and CNL, rooted in respect and mutual benefit.

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