

PURPOSE OF HEARING PUBLIC HEARING PART 1

Canadian Nuclear Laboratories: Near Surface Disposal Facility (NSDF) February 22, 2022, CMD 22-H7.A





Purpose of Hearing

Canadian Nuclear Laboratories is requesting that the Commission:

Amend the Chalk River Laboratories (CRL) operating licence to authorize CNL to construct the proposed Near Surface Disposal Facility (NSDF)

Commission will need to make:

- 1. An environmental assessment (EA) decision under *Canadian Environmental Assessment Act*, 2012 (CEAA 2012)
- 2. A licensing decision under the *Nuclear Safety and Control Act* (NSCA)
- 3. A determination on whether the honour of the Crown has been met in fulfilling CNSC's duty to consult obligations as per the *Constitution Act*, 1982 (section 35) and common law





The Regulatory Review Process

EA under CEAA 2012

 Scope: focus is on environmental effects (section 5 of CEAA 2012) for the entire lifecycle of the project

Licensing assessment under the NSCA

- Scope: assesses licence application against CNSC's regulatory framework for all aspects relevant to construction
 - Following Canadian requirements and international best practices, also assessed the application for the operational and post-closure periods

Indigenous consultation carried out throughout the regulatory review process





Decision under CEAA 2012

- The NSDF Project is subject to CEAA 2012 as it qualifies as a Designated Project as per section 37(b) of the Regulations Designating Physical Activities
- CNSC staff conducted an EA of the NSDF Project in accordance with CEAA 2012, as this was the federal EA legislation at the time the submission was received
- CNL's project description was received in May 2016, before the coming into force of the *Impact Assessment Act* (IAA, 2019) in August 2019
 - The IAA contains transitional provisions for EAs of designated projects commenced under CEAA 2012 for which the CNSC is the Responsible Authority, as per subsection 182 transition provision in the IAA

The Commission must determine whether the proposed project results in significant adverse environmental effects, taking into account mitigation measures and render an EA decision



Decision under the NSCA

The Commission must first make the EA under CEAA 2012 decision, before proceeding with the licensing decision

- CNL is proposing to construct the NSDF at the CRL site
- The CRL site operates under a Class I licence -Nuclear Research and Test Establishment Operating Licence
- The proposed NSDF is a Class IB nuclear facility
- CNSC staff determined that:
 - The proposed NSDF is not authorized in the current CRL operating licence
 - A licence amendment to the current operating licence is required to allow the construction to proceed

The Commission must determine whether the proposed project meets the requirements under the NSCA and render a licence amendment decision

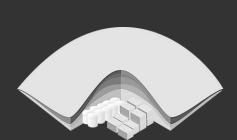




Indigenous Consultation

- As an agent of the Crown, the Commission must ensure that all of its licensing decisions and environmental reviews under the NSCA, CEAA 2012, IAA, or other relevant legislation uphold the honour of the Crown and consider Indigenous peoples' potential or established Indigenous or treaty rights as per section 35 of the Constitution Act and common law
- CNSC staff conducted extensive consultation activities with identified Indigenous
 Nations and communities to ensure their full participation in the regulatory review
 process and to ensure their concerns were addressed, to the extent possible

The Commission must determine whether the Honour of the Crown has been met in fulfilling CNSC's duty to consult obligations



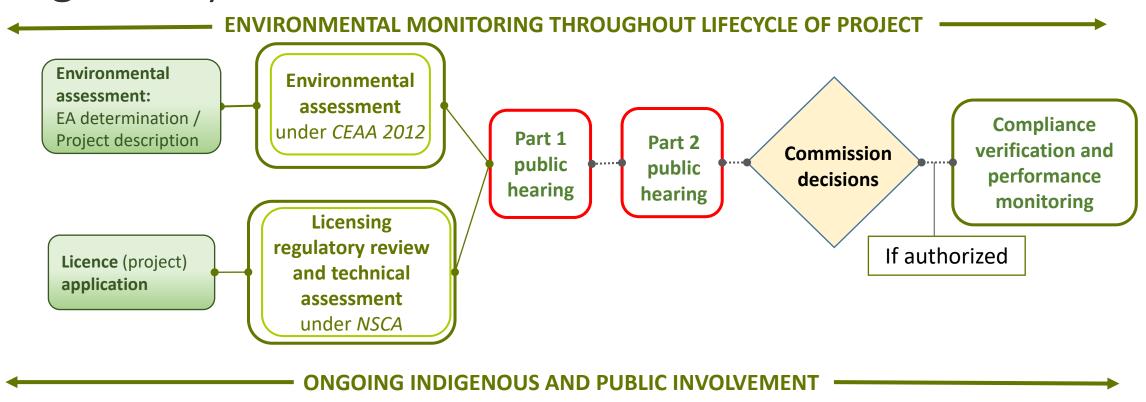
REGULATORY REVIEW **PROCESS**

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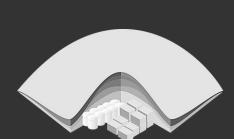




Regulatory Review Process Overview



CNSC staff ensured that all comments submitted were satisfactorily addressed by CNL



ENVIRONMENTAL ASSESSMENT

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Environmental Assessment: Process

- An EA under CEAA 2012 is required for the proposed NSDF Project
- Province of Ontario EA not required for projects on federal lands
- As Responsible Authority for this project, CNSC coordinated a federal-provincial review team, using a whole-of-government approach:
 - Federal: Environment and Climate Change Canada, Natural Resources Canada, Health Canada
 - Provincial: Province of Ontario (MECP) and Province of Quebec (MELCC)
- Input from Indigenous Nations and communities and the public was considered throughout CNSC staff's assessment





Environmental Assessment: Scope of Assessment

Scope of Environmental Assessment

• Potential environmental effects for the entire lifecycle of the project (construction, operation, decommissioning, closure, post- closure) on areas of federal jurisdiction

CNL's Environmental Impact Statement (EIS) was assessed against:

- Requirements outlined in <u>CEAA 2012</u>
- The CNSC's Generic Guidelines for the Preparation of an Environmental Impact Statement and other relevant documentation
- REGDOC-2.9.1: Environmental Protection: Environmental Principles, Assessments and Protection Measures
- REGDOC-3.2.2, Indigenous Engagement





Environmental Assessment: CNSC Staff Assessment (1)

CNSC staff assessed the predicted changes to the environment caused by the NSDF project on the following environmental compartments:

- Atmospheric environment
- Water resources
- Terrestrial environment
- Geological and hydrogeological environment

CNSC staff evaluated predicted effects on the following valued components based on the changes to the environmental components listed above:

- Fish and fish habitat
- Migratory birds
- Indigenous uses: current use of lands and resources for traditional purposes

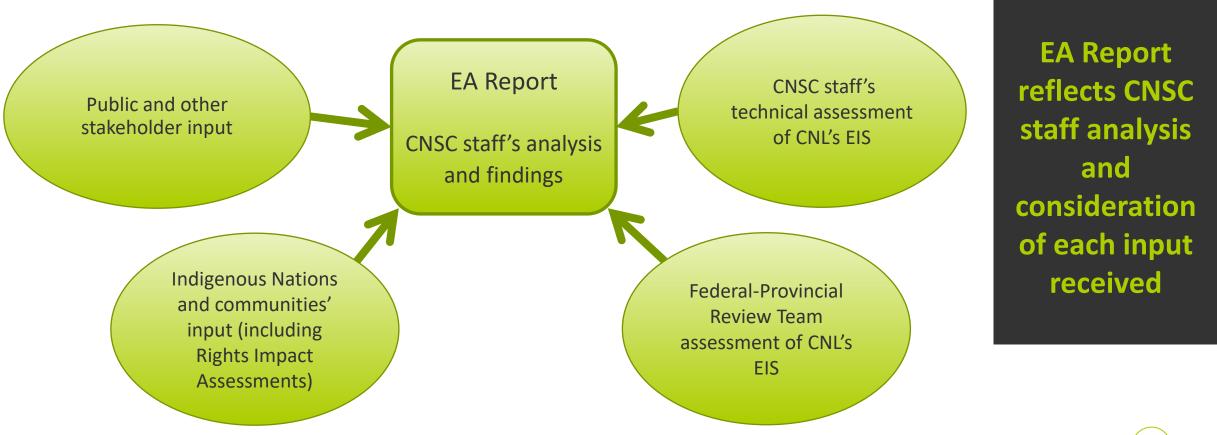
- Human health
- Transboundary environmental effects
- Potential effects of the environment on the project

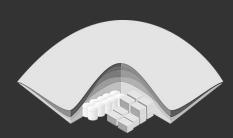
CNSC staff
assessed and
evaluated all
predicted changes
and effects





Environmental Assessment: CNSC Staff Assessment (2)





ASSESSMENT OF LICENCE APPLICATION

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Licensing: CNSC Staff Assessment

CNSC staff's assessment considered:

- CNL's licence application and supporting documentation (e.g., NSDF-specific procedures)
- CNL's existing programs, processes and procedures (as they would apply to the proposed NSDF)
- CNL's performance in all 14 Safety and Control Areas (SCAs) during the current licence period (2018-2020)
- Public information, community outreach, and Indigenous engagement activities

Management	Management System
	Human Performance Management
	Operating Performance
Facility and Equipment	Safety Analysis
	Physical Design
	Fitness for Service
Core Control Processes	Radiation Protection
	Conventional Health and Safety
	Environmental Protection
	Emergency Management and Fire Protection
	Waste Management
	Security
	Safeguards and Non-Proliferation
	Packaging and Transport





Licensing: Technical Assessment Criteria





Submission assessed against **NSCA** and all applicable Regulations, CNSC REGDOCs, guides and standards





Licensing: General Assessment of SCAs - Highlights

- CNL has mature and robust programs in place for all CRL operations
- CNSC staff have determined that CNL's NSDF-specific documents (e.g., NSDF design documents) are adequate to properly carry out the proposed NSDF construction activities in accordance with regulatory requirements
- Based on reviews conducted, with respect to readiness, CNSC staff are satisfied that
 CNL has and will continue to adequately plan for moving to the operation phase

CNSC staff have determined that CNL continues to implement and maintain effective programs in compliance with regulatory requirements



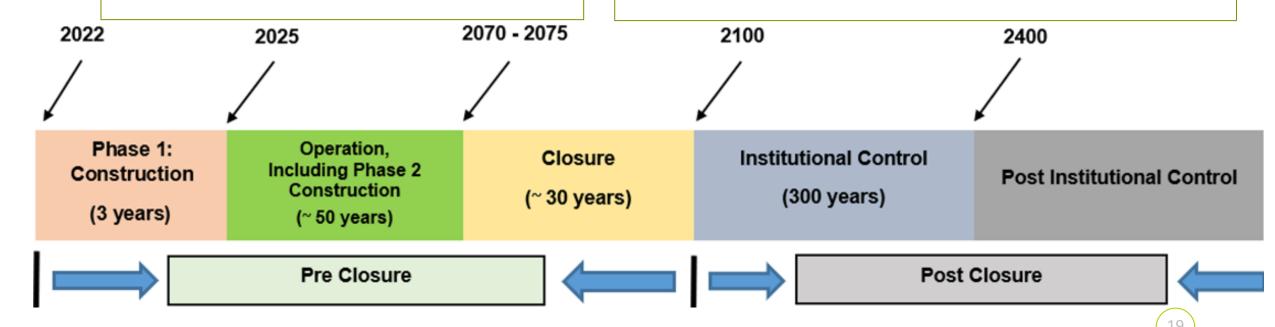
The NSDF Safety Case

Two key components:

- Pre-Closure Safety Analysis for construction, operation and closure phases
- Post-Closure Safety Assessment for the institutional and post institutional control periods

Both assessed by CNSC to:

- Verify that the design of the facility follows international best practice and is compatible with the site characteristics
- Ensure compliance with relevant standards and criteria
- Validate calculations supporting the safety arguments presented







Licensing: Assessment of Safety Analysis - Highlights

- The NSDF Safety Analysis Report analyzes the impact of the NSDF during construction, operations and closure phases on workers, people, the environment under normal and accident conditions
- CNL was required to use a systematic hazard analysis methodology that included:
 - Hazard identification and classification
 - Hazard analysis
 - Failure mode effects and criticality analysis

CNSC staff conclude the NSDF Safety Analysis meets Canadian regulatory requirements and aligns with international guidance



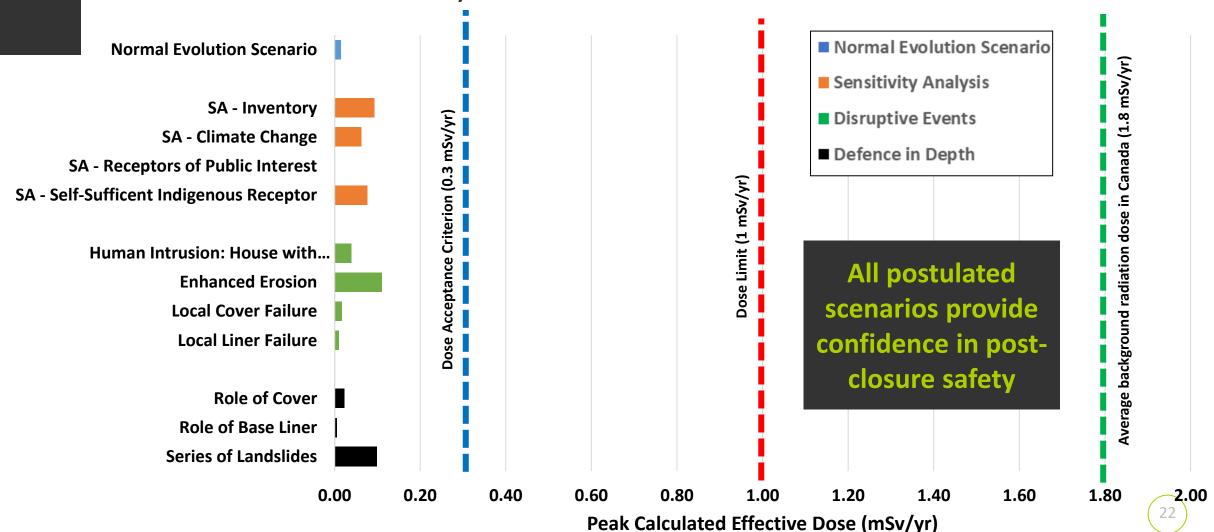
Licensing: Assessment of Long-Term Safety - Highlights

- The Post-Closure Safety Assessment (PCSA) provides a systematic evaluation of the potential impact of the disposal facility on people and the environment during the post-closure period and for the entire period that isolation and containment of the waste is required
- CNL's PCSA was required to analyze the impact of a variety of scenarios:
 - Normal evolution (most-realistic scenario)
 - Disruptive events (e.g., earthquakes, fires, floods)
 - Human intrusion
 - Other worst case "what if" scenarios (e.g., mass excavation, permanent flooding)





Post-Closure Safety Assessment Scenarios

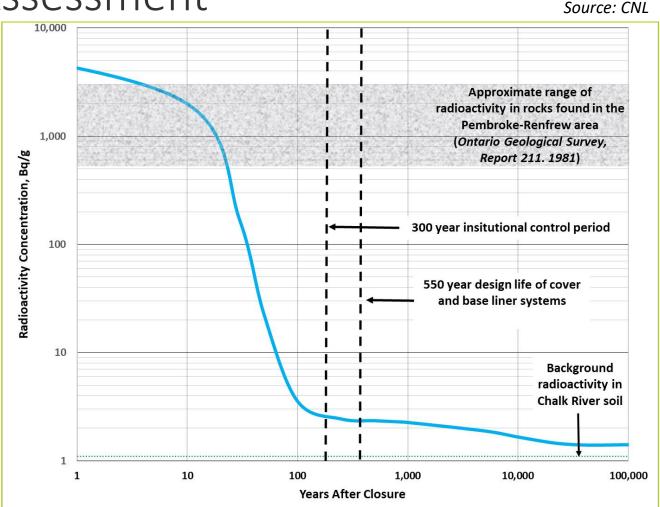


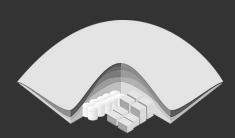




Post-Closure Timeframe Assessment

- At 300 years the majority of the NSDF inventory has decayed
- Total inventory is derived from safety criteria and part of waste acceptance criteria
- Activity concentration comparable to background within a few hundred years after closure
- Evidence supporting timeframes for institutional control (300 years) and barrier design life (550 years) meet regulatory criteria





INDIGENOUS CONSULTATION

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Indigenous Consultation: Indigenous Nations and Communities

CNSC staff identified the following Indigenous Nations, communities and organizations:

- Anishinabek Nation
- Algonquin Anishinabeg Nation Tribal Council
- Algonquins of Ontario
- Algonquins of Pikwakanagan First Nation
- Algonquin Nation Secretariat
- Kitigan Zibi Anishinabeg
- Kebaowek First Nation

- Métis Nation of Ontario
- Williams Treaties First Nations
 - Alderville First Nation
 - Curve Lake First Nation
 - Chippewas of Beausoleil First Nation
 - Chippewas of Georgina Island First Nation
 - Chippewas of Rama First Nation
 - Hiawatha First Nation
 - Mississaugas of Scugog Island First Nation





Indigenous Consultation: CNSC Staff Consultation and Engagement Activities

CNSC staff's consultation and engagement activities included the following:

- Sending written correspondence and meeting in-person and virtually with representatives from identified Indigenous Nations and communities
- Organizing community open houses and engagement sessions
- Incorporating Indigenous Knowledge into the EA and licensing processes
- Signing Terms of References for collaborative approaches to consultation, the EA and Rights Impact Assessment processes
- Collaboratively developing sections of the EA Report and Rights Impact Assessments (RIA) with a number of the identified
 Nations and communities
- Development of specific issues Indigenous and concerns summary tables for each Nation and community
- Ensuring CNL engagement activities meet REGDOC-3.2.2. and related guidance

CNSC staff applied new and innovative consultation approaches





Indigenous Consultation: Rights Impact Assessments

CNSC staff considered and assessed the potential impacts to Indigenous and/or treaty rights related to the Project culminating in Rights Impact Assessments (RIAs) for the following Indigenous Nations and communities:

- Quebec Algonquin First Nations (including Kebaowek First Nation and Kitigan Zibi Anishinabeg)
- The Algonquins of Ontario
- Algonquins of Pikwakanagan First Nation
- Métis Nation of Ontario

Conduct of assessments aligned with national policy and guidance





Indigenous Consultation: Results of Rights Impact Assessments

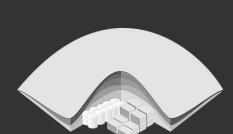
The NSDF project has potential to impact the following broad categories of rights:

- Harvesting rights
- Governance and stewardship rights
- Cultural continuity rights

Concerns raised in the RIAs:

- Lack of access to NSDF site for practice of rights over the long-term
- Fear and avoidance due to perceived risk of contamination
- Impacts on sensory experience

Assessments developed in consultation with potentially impacted Indigenous Nations and communities



OTHER MATTERS OF REGULATORY INTEREST

Canadian Nuclear Laboratories: Near Surface Disposal Facility (NSDF) February 22, 2022, CMD 22-H7.A





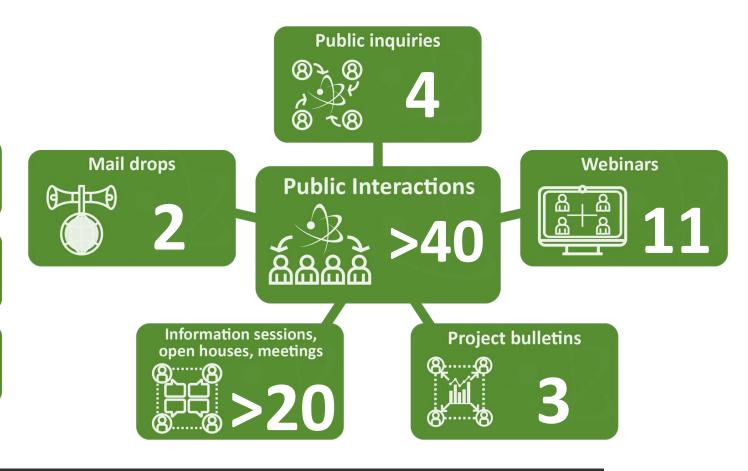
CNSC Public Outreach and Engagement

Social media

43,627*
Impressions

7,606*

Pageviews



^{*}Numbers from 2019 to 2022





Key Public and Indigenous Concerns (1)

Key concerns that have been raised throughout the regulatory review process:



Long-term safety



Waste management and inventory



Proximity to important waterbody (Ottawa River)



Alignment with international standards



Groundwater contamination



Cumulative effects and use of Indigenous knowledge

- The regulatory review process is designed to consider and assess all aspects identified
- To reasonably address concerns raised, CNSC staff used new and adaptive engagement tools

The public and Indigenous Nations and communities are encouraged to intervene at the Part 2 hearing





Key Public and Indigenous Concerns (2) - Example

Public webinars and technical focused sessions were held on specific topics to address key areas of concerns:

- CNSC's licensing regulatory review process and technical assessments, including alignment with international standards
- Waste classification and characterization
- Waste inventory
- Compliance verification
- Transportation of radioactive waste
- Long-term safety of disposal facilities
- Protection of people and the environment

All webinars to be posted on CNSC's YouTube channel





Key Public and Indigenous Concerns (3) - Example

- What we heard:
 - The NSDF is too close and will contaminate the Ottawa River
 - The NSDF will pollute drinking water for people downstream
- CNSC staff assessment:
 - The NSDF has a robust design
 - The location is suitable.
 - Modeling predicts negligible contaminants will reach the river
- Environmental monitoring of the Ottawa River will be carried out
 - CNL's environmental monitoring program and EA FUMP
 - CNSC's Independent Environmental Monitoring Program (IEMP)



CNSC staff will ensure the Ottawa River remains protected

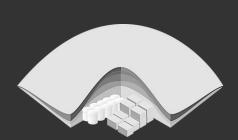




CNSC Staff Commitments

- Engage with members of the public, Indigenous Nations and communities and local authorities - seeking early feedback/input on future IEMP campaigns
- Long-term and lasting relationship with identified Indigenous Nations and communities involvement in the ongoing monitoring/implementation of mitigation measures and EA FUMP
- Conducting engagement activities with Indigenous Nations and communities as mutually agreed
- Conducting regular outreach activities related to the NSDF Project and/or the CRL site with local communities

Separate, and independent, from commitments made by CNL



CNSC STAFF CONCLUSIONS AND RECOMMENDATIONS

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CNSC Staff Conclusions and Recommendations (1) EA Decision

Based on the regulatory review and technical assessments of CNL's EIS and supporting documentation, CNSC staff have determined that:

The proposed NSDF Project is not likely to cause significant adverse environmental effects, taking into account the implementation of all identified EA regulatory commitments.

An EA follow-up monitoring program (FUMP) will be required

- Confirmation of EA predictions
- Evaluation of proposed mitigation measures

CNSC staff recommend the Commission determine that the NSDF Project is not likely to cause significant adverse environmental effects referred to in section 5 of CEAA 2012





CNSC Staff Conclusions and Recommendations (2) Licensing Decision

Based on the licensing regulatory review and technical assessments, CNSC staff have determined that:

- The proposed NSDF project is protective of people and the environment, taking into account the implementation of all identified EA regulatory commitments and licensing regulatory actions
- CNL's licence application to construct the NSDF at the CRL site complies with all applicable regulatory requirements

The NSDF facility design provides for safe operation, decommissioning and closure, providing adequate protection for workers, Indigenous peoples, the public and the environment over the near and long-term





Proposed Licence Changes

- No change to licensed activities in the CRL operating licence
- Addition of two proposed (2) NSDF facility-specific licence conditions
 - These conditions would make enforceable CNL's implementation of EA regulatory commitments (e.g., mitigation measures and follow-up program measures) and licensing regulatory actions (e.g., CNSC staff review and/or acceptance of documentation prior to operations phase)
- The licence conditions handbook will authorize staff to undertake compliance activities

Canadian Nuclear Laboratories Ltd. - Chalk River Laboratories Nuclear Research and Test Establishment Licence

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(c) The Chalk River Laboratories Licence Conditions Handbook provides compliance verification criteria used to verify compliance with the conditions set out in this licence, including information regarding delegation of authority and applicable versions of documents and a process for version control of codes, standards or other documents that are used as compliance verification criteria.

VI) CONDITIONS:

- The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:
 - (i) the regulatory requirements set out in the applicable laws and regulations;
 - (ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence; and
 - (iii) the safety and control measures described in the licence application and the documents needed to support that licence application;
 - unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").
- The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.
- The licensee shall control the use and occupation of any land within the exclusion zone.
- The licensee shall provide, at the nuclear facility and at no expense to the Commission, suitable office space for employees of the Commission who customarily carry out their functions on the premises of that nuclear facility (onsite Commission staff).
- The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission or a person authorized by the Commission.
- G.6 The licensee shall implement and maintain a public information and disclosure program.
- The licensee shall implement the licensing regulatory actions prescribed by the Commission. Review and closure of the licensing actions is administered by the Commission or a person authorized by the Commission.
- G.8 The licensee shall implement the Environmental Assessment (EA) regulatory commitments prescribed by the Commission. Review and closure of the EA regulatory commitments is administered by the Commission or a person authorized by the

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CNSC Staff Conclusions and Recommendations (3) Licensing Decision

CNSC staff recommend the Commission:

- Conclude, pursuant to paragraphs 24(4)(a) and (b) of the NSCA in that CNL:
 - a) Is qualified to carry on the activities authorized by the licence
 - b) Will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed
- Amend the CRL site licence to authorize the construction of the NSDF at the CRL site
- Approve authority to staff, the administration of the two (2) facility-specific licence conditions
- Affirm CNSC staff commitments made to the public and Indigenous nations and communities





CNSC Staff Conclusions and Recommendations (4) Duty to Consult Decision

Taking into consideration the consultation activities conducted to date, the proposed mitigation, follow-up program measures and commitments by CNL, AECL and CNSC staff, CNSC staff conclude that:

The potential impacts to Indigenous and/or treaty rights have been adequately identified, assessed and mitigated.

CNSC staff's consultation and engagement is an ongoing commitment which will continue throughout the lifecycle of the project

CNSC staff recommend the Commission determine that the Duty to Consult and Accommodate has been appropriately and adequately discharged for the proposed NSDF Project



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