Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire

Record of Decision

DEC 24-H7

In the Matter of

Applicant	Canadian Nuclear Laboratories Ltd.
Subject	Application to Renew the Nuclear Research and Test Establishment Decommissioning Licence for Whiteshell Laboratories
Date of Decision	December 11, 2024

e-Doc 7339023 (Word)
e-Doc 7424205 (PDF)

RECORD OF DECISION – DEC 24-H7

Applicant:	Canadian Nuclear Laboratories Ltd.
Address/Location:	286 Plant Road, Chalk River, Ontario, K0J 1J0
Purpose:	Application to Renew the Nuclear Research and Test Establishment Decommissioning Licence for Whiteshell Laboratories
Application received:	November 21, 2023, and amended on February 15, 2024
Date of decision:	December 11, 2024
Panel of the Commission:	T. Berube V. Remenda J. Hopwood

Licence: Renewed

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1.0 INTRODUCTION

1. Canadian Nuclear Laboratories Ltd. (CNL) has applied to the Canadian Nuclear Safety Commission[1] (CNSC or the Commission), under subsection 24(2) of the *Nuclear Safety and Control Act*[2] (NSCA), for a 3-year renewal of the Nuclear Research and Test Establishment Decommissioning Licence for its Whiteshell Laboratories. CNL's current licence, NRTEDL-W5-8.00/2024, is valid until December 31, 2024, and authorizes CNL to operate and decommission the Whiteshell Laboratories. The Whiteshell Laboratories site is located in Pinawa, Manitoba, and in the homeland of the Red River Métis, Treaty 1 and Treaty 3 territories and the traditional territory of the Anishinaabe and Ojibway Peoples. The Whiteshell Laboratories site is also located in vicinity of Treaty 5 territory.

2. The Whiteshell Laboratories site encompasses an area of 4,375 hectares and includes facilities such as the Whiteshell Reactor #1 (WR-1), shielded facilities, radioactive waste management area, and various research laboratories and support buildings. The Whiteshell Laboratories site was operated by Atomic Energy Canada Limited (AECL) as a nuclear research facility for approximately 40 years before a decommissioning licence was first issued by the Commission in November 2002. AECL began decommissioning the site in 2003. In October 2014,[3] the Commission authorized the transfer of the Whiteshell Laboratories licence from AECL to CNL under a Government-Owned Contractor-Operated[4] (GoCo) contract model. The licence transfer was completed in 2015.

3. CNL is authorized to operate and decommission the Whiteshell Laboratories, comprising both nuclear and non-nuclear facilities, under its current licence, which was issued following a public hearing in 2019.[5] In its application, CNL proposes to continue to conduct the licensed activities as outlined in the current licence throughout the proposed 3-year period of the renewed licence. CNL has not requested to change the terms, conditions, or licensed activities as set out in the current Whiteshell Laboratories decommissioning licence.

Issues

4. The Commission is required to determine whether and what requirements the *Impact Assessment Act*[6] (IAA) imposes in relation to the activities sought to be authorized in CNL's application to renew the licence for its Whiteshell Laboratories. Satisfying any such requirements can be a prerequisite to licensing.

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[1] The *Canadian Nuclear Safety Commission* is referred to as the "CNSC" when referring to the organization and its staff in general, and as the "Commission" when referring to the tribunal.
[2] S.C. 1997, c. 9.
[3] Record of Decision, *Request for Five Licence Transfers to, and Request for Two Specific Exemptions for, Canadian Nuclear Laboratories Limited*, CNSC, 2014.
[4] Under the GoCo contract model, CNL is responsible for managing and operating AECL owned sites.
[5] Record of Decision, *Application for the Renewal of the Nuclear Research and Test Establishment Decommissioning Licence for Whiteshell Laboratories*, CNSC, 2019.
[6] S.C. 2019, c. 28, s. 1.

5. Pursuant to paragraphs 24(4)(a) and (b) of the NSCA, in considering whether to renew the licence, the Commission must be satisfied that:

   a) CNL is qualified to carry on the activity that the licence would authorize; and
   b) in carrying on that activity, CNL 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.

6. As an agent of the Crown, the Commission recognizes its role in fulfilling the Crown's constitutional obligations, along with advancing reconciliation with Canada's Indigenous peoples. The Commission's responsibilities include the duty to consult and, where appropriate, accommodate Indigenous interests where the Crown contemplates conduct which may adversely impact potential or established Aboriginal[7] or treaty rights[8]. As such, the Commission must determine what engagement and consultation steps and accommodation measures are called for respecting Indigenous interests.

Panel

7. On March 4, 2024, the Commission published Notice of Hearing in Writing and Participant Funding[9] for this matter. On April 12, 2024, the Commission published a Revised Notice of Hearing in Writing and Participant Funding[10] to announce that the hearing would be held virtually only.

8. Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission, comprised of Commission Members Dr. T. Berube (presiding member), Dr. V. Remenda and J. Hopwood, to decide on the application. The Commission, in making its decision, considered information presented for a public hearing held virtually on October 23, 2024. The public hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*[11] (the Rules). During the public hearing, the Commission considered written submissions and heard oral presentations from CNL (CMD 24-H7.1, CMD 24-H7.1A and CMD 24-H7.1B) and CNSC staff (CMD 24-H7, CMD 24-H7.A). The Commission also considered oral and written submissions from 11 intervenors (see Appendix A for a list of interventions). The hearing was webcast live via the CNSC website, and video archives are available on the CNSC's website.

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[7] "Aboriginal" is the term used in this document when referring to the Crown's duty to consult as that is the term used in s. 35 of the *Constitution Act, 1982*. In all other cases, "Indigenous" is the preferred terminology and used accordingly.

[8] *Haida Nation v. British Columbia (Minister of Forests),* 2004 SCC 73; *Taku River Tlingit First Nation v. British Columbia (Project Assessment Director)*, 2004 SCC 74.

[9] *Notice of Hearing in Writing and Participant Funding*, CNSC, March 4, 2024.

[10] *Revised Notice of Hearing in Writing and Participant Funding*, CNSC, April 12, 2024.

[11] Statutory Orders and Regulations (SOR)/2000-211.

Participant Funding Program

9. Pursuant to paragraph 21(1)(b.1) of the NSCA, the Commission has established a Participant Funding Program (PFP) to facilitate the participation of Indigenous Nations and communities, members of the public and stakeholders in Commission proceedings. In March 2024, up to $75,000 in funding was made available through the CNSC's PFP to review CNL's licence renewal application and associated documents, and to provide the Commission with value-added information through topic-specific interventions. A Funding Review Committee, independent of the CNSC, reviewed the funding application received and made recommendations on the allocation of funds. Based on the recommendations from the Committee, the CNSC awarded up to $121,568 to 7 applicants:

- Algonquins of Pikwakanagan First Nation (AOPFN)
- Black River First Nation (BRFN)
- Canadian Environmental Law Association (CELA)
- Manitoba Métis Federation (MMF)
- Northwatch
- Radiation Safety Institute of Canada
- Sagkeeng Anicinabe First Nation (Sagkeeng)

Hearing Scope

10. In September 2017, CNL submitted a proposal for the *in situ* decommissioning of the WR-1 reactor. This proposed activity is subject to an environmental assessment under the *Canadian Environmental Assessment Act, 2012*. The licence renewal application does not include a request to authorize the *in situ* decommissioning of the WR-1 reactor, and this proposed project is outside the scope of this hearing. CNL would have to submit a separate licence amendment application related to the *in situ* decommissioning of the WR-1 reactor for that proposal to be treated by the Commission.

11. Several intervenors raised the issue of the transport of waste from the Whiteshell Laboratories site to CNL's Chalk River Laboratories. CNL's current licence authorizes activities associated with CNL's fuel consolidation project,[12] and these activities would continue to be permitted under the proposed renewed 3-year licence. It is anticipated that CNL will submit an application to the CNSC for a licence to transport spent fuel to Chalk River Laboratories in July 2025, with the aim of being authorized to transport spent fuel in late 2025 and 2026. The certification of transport packages for used fuel and the activities that would be authorized under a licence to transport are outside of the scope of this hearing.

[12] CNL's fuel consolidation project is to have spent nuclear fuel baskets from the Whiteshell Laboratories site retrieved and packaged at the Whiteshell Laboratories, and then transported to Chalk River Laboratories for consolidated storage.

2.0 DECISION

12. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Decision*, the Commission concludes the following:

- the *Impact Assessment Act* (IAA) does not impose any obligation upon the Commission in respect of this matter
- the contemplated licence renewal does not present any novel adverse impact on any potential or established Aboriginal claim or right
- the Commission's responsibility to uphold the honour of the Crown and its constitutional obligations with regard to engagement and consultation respecting Indigenous interests has been satisfied
- CNL remains qualified to carry on the activities that the licence will authorize
- CNL, in carrying on these activities, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed

Therefore,

> the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, renews the Nuclear Research and Test Establishment Decommissioning Licence issued to Canadian Nuclear Laboratories Ltd. for its Whiteshell Laboratories located in Manitoba. The renewed licence, NRTEDL-W5-8.00/2027, is valid from January 1, 2025, to December 31, 2027, unless suspended, amended, revoked or replaced.

13. The Commission includes in the licence the conditions as recommended by CNSC staff in CMD 24-H7, including the new licence condition 1.2:

> Licence Condition 1.2: Integrated Assessment Plan Reporting Requirements
>
> The licensee shall submit to the Commission or any person authorized by the Commission, reports covering the progress of the licensee's integrated assessment plan at Whiteshell Laboratories.

The Commission also appreciates CNSC staff's planned modification to the compliance verification criteria under licence condition 3.2:

> Licence Condition 3.2: Reporting Requirements
>
> The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

With this modification, CNL is required to submit the Whiteshell Laboratories Integrated Assessment Plan report annually by April 30th. The Commission emphasizes that CNL is required to submit annual reports under licence condition 1.2. The Commission delegates authority for the purposes of the administration of licence conditions 1.2 and 3.2, as recommended by CNSC staff. Licence conditions and the delegation of authority are further discussed in section 4.6 of this *Record of Decision*.

14. The Commission accepts CNL's financial guarantee for its Whiteshell Laboratories, where AECL retains ownership of the lands, assets and liabilities associated with CNL's licences, including the Whiteshell Laboratories licence. The liabilities of AECL are the liabilities of His Majesty in Right of Canada.

15. With this decision, the Commission directs CNSC staff to report on the performance of CNL, as part of its periodic regulatory oversight report (ROR) addressing CNL sites. The Commission directs CNSC staff to notify it of any changes made to the Licence Conditions Handbook (LCH) through the ROR. CNSC staff may bring any matter to the Commission's attention, as required.

16. It remains the Commission's expectation that CNL continues to engage with Indigenous Nations and communities on the end state of the Whiteshell Laboratories site. The Commission also expects that CNSC staff will continue to engage, develop and enhance relationships with Indigenous Nations and communities with respect to Whiteshell Laboratories, and report to the Commission on progress in the context of the ROR or through other means.

3.0 APPLICABILITY OF THE *IMPACT ASSESSMENT ACT*

17. In coming to its decision, the Commission is first required to determine whether any requirement under the IAA applies to the licence renewal application and whether an impact assessment is required.

18. Pursuant to the IAA and the *Physical Activities Regulations*[13] made under it, impact assessments are to be conducted in respect of projects identified as having the greatest potential for adverse environmental effects in areas of federal jurisdiction. A licence renewal is not an activity listed in the *Physical Activities Regulations* that requires an impact assessment, or that meet the definition of a project on federal lands.

19. The Commission is satisfied that there is no requirement under the IAA for an impact assessment to be completed for this application for licence renewal. The Commission is also satisfied that there are no other applicable requirements of the IAA to be addressed in this matter.[14]

4.0 ISSUES AND COMMISSION FINDINGS

20. In making its licensing decision, the Commission considered specific relevant issues and submissions relating to CNL's qualification to carry on the activities sought to be licensed. The Commission also considered the adequacy of the proposed measures for protecting the environment, the health and safety of persons, national security and international obligations to which Canada has agreed.

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[13] SOR/2019-285.

[14] The IAA can impose other requirements on federal authorities in respect of authorizing projects that are not designated as requiring an impact assessment, including projects that are to be carried out on federal lands, or projects outside of Canada. This licence renewal does not engage any such applicable IAA requirements.

21. The Commission's decision focuses on the issues relevant for this application, specifically:

- Assessment of the licence application
- Views of Hearing Participants
- CNL's performance and safety and control measures in relevant safety and control areas (SCAs)
- Indigenous engagement and consultation
- Other matters of regulatory importance
- Licence length and conditions, including the delegation of authority

4.1 Assessment of Licence Application

22. CNL submitted a licence renewal application for its Whiteshell Laboratories on November 21, 2023, and amended the application on February 15, 2024. In its consideration of this matter, the Commission assessed the application submitted by CNL, as required by the NSCA, the *General Nuclear Safety and Control Regulations*[15] (GNSCR), and the *Class I Nuclear Facilities Regulations*[16], and other applicable regulations made under the NSCA, including the *Radiation Protection Regulations*[17], the *Nuclear Security Regulations*[18], and the *Packaging and Transport of Nuclear Substances Regulations, 2015*[19].

23. Section 5 of the GNSCR provides:

> An application for the renewal of a licence shall contain
>
> (a) the information required to be contained in an application for that licence by the applicable regulations made under the Act; and
> (b) a statement identifying the changes in the information that was previously submitted

Section 7 of the GNSCR also provides that:

> An application for a licence or for the renewal, suspension in whole or in part, amendment, revocation or replacement of a licence may incorporate by reference any information that is included in a valid, expired or revoked licence.

24. In attachment A of its application, CNL provided information to satisfy the requirements set out in each applicable clause of the NSCA and applicable regulations.

[15] SOR/2000-202.
[16] SOR/2000-204.
[17] SOR/2000-203.
[18] SOR/2000-209.
[19] SOR/2015-145.

25. In section 1.3 of CMD 24-H7, CNSC staff submitted that it assessed CNL's application and determined that it complied with all requirements for this application. In Appendix B.2 of CMD 24-H7, CNSC staff reported that its assessment of CNL's licence application included a completeness check, a sufficiency check, and a technical assessment against regulatory requirements.

26. Northwatch (CMD 24-H7.12) expressed concerns regarding the completeness of CNL's application, particularly with respect to the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, pursuant to paragraph 3(1)(j) of the GNSCR. As noted by Northwatch, CNL's application provides that the "specific information on radioactive and hazardous wastes is presented in the annual reports prepared to meet the requirement of SCA "Operating Performance" Licence Condition 3.2 of the current Whiteshell Laboratories LCH. Relevant requirements for managing and disposing of radioactive and hazardous waste at the Whiteshell Laboratories site are addressed in the Waste Management Program (through the documents referenced in SCA "Waste Management" Licence Condition 11.1 of the current Whiteshell Laboratories LCH."[20] In Northwatch's view, the application ought to have instead contained the specific information. The Commission is satisfied that the reference to information that is included in CNL's current licence satisfies the requirements of the GNSCR for the purpose of the Commission's assessment of this application.

27. The Commission concludes that CNL's licence renewal application is complete and meets the regulatory requirements respecting an application for licence renewal. The Commission notes that CNL's application is comprehensive and agrees with CNSC staff's assessment that CNL's application complies with the regulatory requirements respecting an application for licence renewal.

4.2 Views of Hearing Participants

28. The Commission received 11 interventions in this hearing. The Commission gave careful consideration to all submissions and perspectives received, in accordance with its mandate and the scope of this hearing. The Commission appreciates the efforts and contributions of all hearing participants. Relevant issues are further addressed in applicable sections of this *Record of Decision.* The interventions from Indigenous Nations are further discussed in section 4.4 of this *Record of Decision*.

29. Four Indigenous Nations made interventions on this matter, Sagkeeng, MMF, AOPFN and BRFN with input from Hollow Water First Nation (HWFN). In its submission, CMD 24-H7.4, Sagkeeng provided information on its review of CNL's licence renewal application, and reported that CNL had earned Sagkeeng's consent for its application. Sagkeeng also expressed concerns about the CNSC's consultation efforts and processes.

[20] Amended Application for Renewal of the Nuclear Research and Test Establishment Decommissioning Licence for the Whiteshell Laboratories, Page 9.

30. In its submissions, CMD 24-H7.6 and 24-H7.6A, MMF noted its concerns related to CNL's safety culture at Whiteshell Laboratories and CNL's performance with respect to fire protection, worker safety, and security over the past licence period. MMF advocated for a more proactive approach to identifying and mitigating safety issues to prevent future non-compliances. MMF also advocated for the need for Indigenous-led environmental monitoring and greater collaboration with CNL.

31. In its submission, CMD 24-H7.7, AOPFN provided information on its review of CNL's licence renewal application, and expressed its opposition to the transport of radioactive waste to Chalk River Laboratories, in its traditional territory. AOPFN noted that the transfer of radioactive waste from the Whiteshell Laboratories to Chalk River Laboratories is part of its ongoing discussions with CNL and AECL.

32. In its submissions, CMD 24-H7.11 and CMD 24-H7.11A, BRFN, with input from the HWFN, provided information on its review of CNL's licence renewal application, and made recommendations based on community input. BRFN recommended that CNL be required to provide more plain language summaries of environmental monitoring results and other scientific information of relevance. BRFN also reported that it would like to partner with CNL to undertake independent environmental monitoring like CNL has done with other Nations and Indigenous organizations.

33. The interventions from Canadian Nuclear Association (CMD 24-H7.2), CANDU Owners Group Inc. (CMD 24-H7.3) and the North American Young Generation in Nuclear (CMD 24-H7.8) were in support of the renewal of CNL's licence for a period of 3 years. These intervenors expressed support for different reasons, including CNL's respect of public and worker radiation doses and CNL's environmental performance.

34. Canadian Environmental Law Association (CELA) (CMD 24-H7.5, CMD 24-H7.5A, CMD 24-H7.5B) expressed concerns with CNL's performance, noting the non-compliances identified by CNSC staff in its assessment of the SCAs. CELA made 19 recommendations, which included that CNSC staff should perform on-site inspections on a more frequent basis, and that CNL should introduce a site safety committee chaired by a Board Director. CELA also recommended that the licence for the Whiteshell Laboratories site be renewed for a period no longer than 1 year.

35. Concerned Citizens of Renfrew County and Area (CMD 24-H7.9, CMD 24-H7.9A) expressed concerns about the transfer of radioactive waste from Whiteshell Laboratories to CNL's Chalk River Laboratories. The Concerned Citizens of Renfrew County and Area was of the opinion that no high-level radioactive waste fuel shipments should take place without prior approval from the Commission.

36. The Radiation Safety Institute of Canada (CMD 24-H7.10) expressed concerns about CNL's performance and the increase in reported events. The Radiation Safety Institute of Canada encouraged increased regulatory scrutiny for the proposed licence period.

37. Northwatch (CMD 24-H7.12, CMD 24-H7.12A) expressed concerns regarding waste management and the transport of waste. Northwatch recommended the introduction of regulatory hold points with respect to several transportation related matters, including package certification, the transportation security plan, and CNL's licence to transport application.

4.3 CNL's Performance and Safety and Control Measures at the Whiteshell Laboratories

38. The Commission examined CNSC staff's assessment of CNL's performance with respect to the CNSC's SCA framework for the purpose of evaluating CNL's licence renewal application. CNSC staff submitted information on CNL's performance in all 14 Safety and Control Areas (SCAs). CNSC staff based its conclusions on oversight activities which included compliance inspections, document reviews, and technical assessments. CNSC staff reported that CNL's performance during the licence period was satisfactory for most SCAs, with the following exceptions:

- Human Performance Management was below expectations in 2023
- Emergency Management and Fire Protection was below expectations in 2022 and 2023
- Security was below expectations from 2019 to 2021

39. During the licence period, CNL implemented three safety stand-downs, which are further discussed in applicable sections of this *Record of Decision*. From November 16, 2020, to February 8, 2021, CNL implemented a safety stand-down due to an increase in COVID-19 risk and an unrelated adverse trend in human performance field work activities.

40. In May 2022, CNL experienced an event where a worker received an electrical shock while performing maintenance activities on a pump. It was determined the pump motor was not isolated via lock-out tag-out procedures[21] to remove the hazard to workers. As a result of this incident, CNL initiated a safety stand-down of all hazardous energy control work. Fieldwork resumed in December 2022 following the completion of the corrective actions.

41. On April 28, 2023, Whiteshell Laboratories was placed into a safety stand-down state with only essential compliance and maintenance work being undertaken. The safety stand-down state was instituted following the discovery of deficiencies in training records for on-site fire brigade members and incomplete equipment procedures. Subsequent non-compliances with the fire protection program, such as inadequate training of firefighters, maintenance issues with equipment and problems with firewater supply and fixed suppression systems were also discovered. CNL submitted to CNSC staff a multi-phase site restart plan which sets out a safe, graduated return to normal site operations and defines the process to be used to restart safe operational activities. CNL returned to normal operations on September 16, 2024, after CNSC staff determined that the necessary criteria were met.

4.3.1 Management System

42. The management system SCA covers the framework that establishes the processes and programs required to ensure that CNL achieves its safety objectives, continuously monitors its performance against these objectives, and fosters a healthy safety culture.

[21] Lock-out tag-out is a safety procedure used to isolate and control hazardous energy sources to ensure that a system cannot be started up without the authorized individual's knowledge.

43. Paragraph 3(d) of the *Class I Nuclear Facilities Regulations* requires that an application for a licence to operate a Class I nuclear facility contain "the proposed management system for the activity to be licensed, including measures to promote and support safety culture." Section 3 of the GNSCR contains requirements that form the basis of a management system.

44. CNSC regulatory document[22] REGDOC-2.1.1, *Management System*[23] addresses the development and implementation of sound management practices and controls, while REGDOC-2.1.2, *Safety Culture*[24] sets out requirements and guidance for fostering a healthy safety culture and conducting safety culture assessments. CSA N286-12, *Management System Requirements for Nuclear Facilities*[25] provides an overall management framework and direction to develop and implement sound management practices and controls for the licensing basis.

45. In section 5.1 of CMD 24-H7.1, CNL provided information regarding its management system for its Whiteshell Laboratories, which includes the following:

- problem identification and resolution program
- quality assurance program
- information management

CNL reported that it has implemented a management system in accordance with CSA N286-12 and REGDOC-2.1.2. CNL submitted that it continually assesses the performance of its management system through mechanisms including safety and security culture assessments, annual monitoring against maturity model indicators, and quarterly reviews of performance.

46. In section 4.1 of CMD 24-H7, CNSC staff confirmed that CNL has implemented a management system which satisfies all regulatory requirements, including those set out in CSA N286-12. CNSC staff submitted that it conducted 2 focussed inspections related to the management system SCA over the current licence period. These inspections resulted in 6 notices of non-compliance,[26] all related to the control of information, including document control and records control. CNSC staff reported that the identified non-compliances did not pose a safety risk to the environment or people. CNSC staff also reported that CNL initiated corrective action plans to address all the findings, and that the actions taken were accepted by CNSC staff.

47. CNSC staff noted that CNL had submitted revised program documents defining its organization. CNSC staff confirmed that CNL has appropriately documented the changes to the CNL organization and reported that CNL's organization is suitable to ensure continued safe operation and compliance with regulatory requirements.

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[22] CNSC regulatory documents are typically referred to as REGDOCs
[23] REGDOC-2.1.1, *Management System*, CNSC, May 2019.
[24] REGDOC-2.1.2, *Safety Culture*, CNSC, April 2018.
[25] N286-12, *Management System Requirements for Nuclear Facilities,* CSA Group, 2012 (R2022).
[26] A non-compliance is a regulatory requirement that has not been met. When a non-compliance is identified, CNSC staff assess the significance of the non-compliance, and determine the appropriate enforcement action, based on the CNSC's graduated approach to enforcement.

48. The Commission concludes that CNL has acceptable programs in place to ensure that CNL achieves its safety objectives and fosters a healthy safety culture at its Whiteshell Laboratories. The Commission comes to this conclusion on the following basis:

- CNL has implemented and maintained a management system that meets regulatory requirements, including CSA N286-12
- CNL has appropriate organization and management structures in place to carry on the licensed activities
- CNL has an acceptable safety culture and a process in place to monitor safety culture in accordance with REGDOC-2.1.2
- CNL has adequate corrective action plans in response to inspection findings made over the current licence period

4.3.2 Human Performance Management

49. The human performance management SCA encompasses activities that ensure that CNL staff are sufficient in number in all relevant job areas and have the necessary knowledge, skills, procedures, and tools in place to safely carry out their duties.

50. Paragraph 12(1)(a) of the GNSCR requires the licensee to ensure that there are sufficient qualified workers to carry on the licensed activity safely and in accordance with the NSCA, its regulations and the licence. Paragraph 12(1)(b) of the GNSCR indicates that the licensee must train workers to carry on the licensed activity in accordance with the Act, its regulations and the licence.

51. Paragraph 3(d.1) of the *Class I Nuclear Facilities Regulations* provides that the licence application must include information about the proposed human performance program for the activity to be licensed, including the measures to ensure workers' fitness for duty. Paragraphs 6(m) and 6(n) of the same regulations indicate that an application for a licence to operate a Class I nuclear facility must include information on the proposed responsibilities, qualification requirements, training program, and measures for the requalification of workers, as well as on the results obtained through the application of the program for the recruitment, training and qualification of workers related to the operation and maintenance of the nuclear facility. Paragraph 7(j) of the *Class I Nuclear Facilities Regulations* requires that an application for a licence to decommission a Class I nuclear facility include the proposed qualification requirements and training program for workers.

52. REGDOC-2.2.2, *Personnel Training*, Version 2[27] sets out requirements and guidance for the analysis, design, development, implementation, evaluation, documentation and management of training at nuclear facilities within Canada, including the essential principles and elements of an effective training system. REGDOC-2.2.4, *Fitness for Duty*[28] sets out requirements and guidance of the CNSC with respect to managing worker fatigue at high-security sites.

[27] REGDOC-2.2.2, *Performance Training*, Version 2, CNSC, December 2016.
[28] REGDOC-2.2.4, *Fitness for Duty*: *Managing Worker Fatigue*, CNSC, March 2017.

53. In section 5.2 of CMD 24-H7.1, CNL submitted information on its human performance program including details on its training and development program. CNL reported that its human performance program meets the requirements outlined in REGDOC-2.2.4. CNL also reported that its human performance program is also in compliance with REGDOC-2.2.2. CNL added that it had performed a gap analysis for REGDOC-2.2.1, Human Performance, Version 2, which was published in January 2024, and would be implementing the actions identified.

54. CNL provided information regarding two safety stand-downs related to human performance during the current licence period:

- In November 2020, CNL initiated a 10-week fieldwork pause in response to an adverse trend in human performance during fieldwork activities and heightened COVID-19 risk.
- In May 2022, Whiteshell Laboratories experienced an event where a worker, performing maintenance activities on a pump received an electrical shock. As a result of this incident, Whiteshell Laboratories senior leadership immediately initiated a safety stand-down of all hazardous energy control work.

55. CNL reported that the 2020 fieldwork pause resulted in the execution of an extensive corrective action plan, including comprehensive reviews and updates to procedures and a significant investment in employee training. CNL added that improvements included increased supervisor presence in the field, in-depth review of proper use of tools and equipment, procedure awareness and compliance, sharing of lessons learned, and better pre- and post-job briefs.

56. On the 2022 safety stand-down, CNL reported that immediate corrective and compensatory actions included re-evaluation and re-training of work permit authorization, job safety analysis, pre-job brief, stop/pause work, and integrated work controls, as well as other key training procedures, such as lock-out tag-out.

57. Regarding training, CNL reported that it has implemented a systematic approach to training (SAT) based training program to ensure that workers are qualified to safely carry out their job duties. CNL also reported that Whiteshell Laboratories currently maintains a sufficient number of qualified workers to carry out the licensed activities safely. CNL added that Whiteshell Laboratories workers are trained to ensure the safe operation of the facility.

58. In section 4.2 of CMD 24-H7, CNSC staff reported that CNL's performance in the Human Performance Management SCA was satisfactory from 2014 to 2022, but below expectation for 2023. CNSC staff explained that this was due to missing pre-employment medical assessment records demonstrating fitness for duty of safety related positions for the Whiteshell Laboratories fire brigade, and for personnel training issues related to workers' training records.

59. CNSC staff reported that, in August 2019, CNSC staff conducted an inspection of the security personnel training program at Whiteshell Laboratories. CNSC staff reported that it issued 1 notice of non-compliance in connection with the inspection, which was of low risk to safety. CNSC staff added that CNL's corrective action plans were satisfactory in addressing the notice of non-compliance.

60. CNSC staff confirmed that CNL has established documented processes for ensuring fitness for duty that meet regulatory requirements, in accordance with REGDOC-2.2.4. In March 2021, CNSC staff conducted a remote human performance management SCA focused compliance inspection which resulted in 2 notices of non-compliance to CNL to address procedures that did not align with the criteria used to assess employee work schedules and limits on hours of work and recovery periods for safety-sensitive positions. CNSC staff noted that the risk arising from these non-compliances was low and that CNL implemented acceptable corrective actions for the 2 notices of non-compliance.

61. CNSC staff reported that, following the identification of fire protection program deficiencies in 2023, CNSC staff made a request under subsection 12(2) of the GNSCR that CNL conduct self-assessments of the implementation of the CNL Functions and Programs at Whiteshell Laboratories, including training and development. CNSC staff noted that the self-assessment revealed that the SAT-listed positions at Whiteshell Laboratories did not meet the expectations and directions in training management system documents or external regulations and requirements. CNSC staff added that CNL had initiated an action plan to resolve the gaps identified and ensure a fully compliant SAT-based training program. CNSC staff reported that it reviewed and accepted CNL's corrective actions to address the identified issues.

62. CNSC staff further reported that in August 2023, CNL self-identified that it did not have records or pre-employment medical assessments for 10 newly hired firefighter members. CNSC staff also reported that CNL had also discovered that 8 medical assessments for current employees had lapsed by over 2 months. CNSC staff noted that CNL took immediate corrective action to investigate the cause, prevent re-occurrence, and revise CNL procedures.

63. In section 2 of CMD 24-H7, CNSC staff provided further information about the safety stand-downs that happened in 2020 and 2022. CNSC staff reported that, on the 2020 safety stand-down, CNL took corrective actions to provide specialized training to employees related to human performance fundamentals, safety culture, safe work practices, and work processes and procedures. CNSC staff added that CNL also addressed gaps in its human performance program to ensure a safer work environment. CNSC staff reported that CNL's corrective actions were satisfactory.

64. On the 2022 safety stand-down, CNSC staff reported that it verified the implementation of CNL's corrective actions during a reactive human performance management SCA focused inspection in December 2023. CNSC staff noted that the inspection revealed 4 notices of non-compliance related to outdated training documentation and requirements, inaccurate training records, limited access to training records by supervisors, and inconsistent training program evaluation. CNSC staff added that it would review CNL's corrective actions and perform focused compliance verification activities to confirm full implementation of all corrective actions.

65. The Commission asked for more information on the 2022 safety stand-down. A CNL representative explained that CNL immediately took corrective and compensatory actions such as re-evaluation and retraining of workers. A CNL representative also reported that CNL had developed a plan and safety initiatives to improve the safety culture at the Whiteshell Laboratories. CNSC staff reported that it was satisfied with the progress and the changes made by CNL since the stand-down, and that CNSC staff would continue to monitor the situation.[29]

66. CNSC staff submitted that, despite CNL's performance rating under this SCA being below expectations in 2023, CNL remained qualified to carry out the authorized activities at Whiteshell Laboratories. CNSC staff explained that the risk to the health or safety of persons or impact on the environment was low, based on the reduced site operations resulting from the site-wide stand-down.

67. CNSC staff noted that CNL is working to progress to normal operations in a risk-defined manner through a multi-phase recovery plan by implementing root cause analysis corrective actions. CNSC staff added that it was monitoring CNL's progress and perform regulatory oversight of CNL's multi-phase recovery plan activities including holding bi-weekly meetings with CNL and reviewing CNL's readiness submission packages. CNSC staff reported that it was satisfied with CNL's submissions and progress made to date related to the Whiteshell Laboratories site's recovery plan. In its presentation (CMD 24-H7.A), CNSC staff confirmed that CNL had returned to normal operations in September 2024.

68. The Commission concludes that, despite CNL's performance in 2023, CNL has an appropriate human performance management program in place for the conduct of licensed activities. The Commission comes to this conclusion on the following basis:

- CNL has a SAT-based training program in place that meets regulatory requirements, including REGDOC-2.2.2
- CNL has a fitness for duty program in place to ensure that workers are fit to safely conduct their job duties that meets regulatory requirements, including REGDOC-2.2.4
- CNL has completed a multi-phase recovery plan to implement corrective measures and the Commission is satisfied with the progress made to date related to the Whiteshell Laboratories site's recovery plan

Noting that Whiteshell Laboratories had recently returned to normal operations, the Commission expects to receive updates from CNSC staff on CNL's performance in its regular reporting to the Commission.

4.3.3 Operating Performance

69. The operating performance SCA includes an overall review of the conduct of the licensed activities and the activities that enable effective performance, as well as improvement plans and significant future activities, at Whiteshell Laboratories.

[29] Hearing transcript, page 254

70. Paragraph 6(d) of the *Class I Nuclear Facilities Regulations* provides that an application for a licence to operate a Class I nuclear facility must include information on the proposed measures, policies, methods and procedures for operating and maintaining the nuclear facility. Paragraph 7(c) of the *Class I Nuclear Facilities Regulations* requires that an application for a licence to decommission a Class I nuclear facility include the proposed measures, methods and procedures for carrying on the decommissioning. REGDOC-3.1.2, *Reporting Requirements, Volume I: Non-Power Reactor Class I Facilities and Uranium Mines and Mills*, Version 1.1[30] sets out requirements and guidance for reports and notifications that licensees of Class I nuclear facilities must submit to the CNSC.

71. In section 5.3 of CMD 24-H7.1, CNL provided information on the processes it has implemented to ensure that Whiteshell Laboratories is operated safely and in compliance with its licence conditions and its conduct of operations. Regarding reporting requirements, CNL noted that it submits all reports, including its annual compliance report, to the CNSC in accordance with REGDOC-3.1.2.

72. In section 4.3 of CMD 24-H7, CNSC staff reported that CNL has operated its Whiteshell Laboratories in accordance with regulatory requirements over the current licence period. CNSC staff submitted that CNL maintains appropriate operating procedures and program documents to ensure the safe operation of the Whiteshell Laboratories, and that CNL has satisfied regulatory reporting requirements per REGDOC-3.1.2. CNSC staff further reported that it verified CNL's program documents and procedural adherence. CNSC staff confirmed that CNL has adequate program documents and procedures to ensure the safe operation of its Whiteshell Laboratories.

73. In section 4.3.3.1 of CMD 24-H7, CNSC staff provided information concerning the reportable events that occurred at Whiteshell Laboratories over the current licence period. CNSC staff noted that there was an increase in the number of reportable events from 2022 to 2023, from 3 to 15, with several of these reportable events being related to the site safety stand-down event in 2023 due to deficiencies in training records for on-site fire brigade members.

74. CNSC staff reported that, during the current licence period, it conducted 2 inspections related to the operating performance SCA without any identified non-compliances. CNSC staff noted one event that was reported to the Commission, other than the site stand-down. On December 13, 2021, CNL reported an event where an electrical rectifier failed due to a faulty control board. CNSC staff reviewed and accepted CNL's actions and confirmed that CNL repaired the control board.

[30] REGDOC-3.1.2, *Reporting Requirements, Volume I: Non-Power Reactor Class I Facilities and Uranium Mines and Mills*, Version 1.1, CNSC, July 2022.

75. The Commission concludes that CNL has and will continue to have appropriate measures, methods and procedures in place for carrying on licensed activities at its Whiteshell Laboratories. The Commission comes to this conclusion on the following basis:

- CNL operated its Whiteshell Laboratories in accordance with regulatory requirements over the current licence period
- CNL's operating programs and procedures meet regulatory requirements
- CNL maintains a program for reporting, in accordance with REGDOC-3.1.2
- CNSC staff inspections during the current licence period verified that CNL continues to implement and maintain an effective operating program

4.3.4 Safety Analysis

76. Safety analysis, which supports the overall safety case for the facility, includes a systematic evaluation of the potential hazards associated with the conduct of the licensed activity or the operation of a facility and considers the effectiveness of preventive measures and strategies in reducing the effects of such hazards.

77. Paragraph 6(c) of the *Class I Nuclear Facilities Regulations* provides that an application for a licence to operate a Class I nuclear facility must include a final safety analysis report demonstrating the adequacy of the design of the nuclear facility. Paragraph 7(i) of the *Class I Nuclear Facilities Regulations* requires that an application for a licence to decommission a Class I nuclear facility include the proposed measures to prevent or mitigate the effects of accidental releases of nuclear substances and hazardous substances on the environment, the health and safety of persons and the maintenance of national security, including an emergency response plan. REGDOC-2.4.1, *Deterministic Safety Analysis*[31] sets out requirements and guidance for the preparation and presentation of a safety analysis that demonstrates the safety of a nuclear facility. REGDOC-2.4.3, *Nuclear Criticality Safety*, Version 1.1[32] sets out requirements for nuclear criticality safety and provides guidance on how those requirements may be met.

78. In section 5.4 of CMD 24-H7.1, CNL provided information on its safety analysis program, including the documentation which describes the safety analysis for its Whiteshell Laboratories. CNL submitted that it plans to review its safety analysis reports during the upcoming licence period. CNL also reported that:

- it regularly updates its criticality safety documents on a risk-graded approach
- upper subcritical limits have been documented
- criticality hazard identification studies have been completed for all nuclear criticality-controlled areas.

[31] REGDOC 2.4.1, *Deterministic Safety Analysis,* CNSC, May 2014.
[32] REGDOC 2.4.3, *Nuclear Criticality Safety,* Version 1.1, CNSC, September 2020.

79. In section 4.4 of CMD 24-H7, CNSC staff submitted that CNL's documentation under the safety analysis SCA meets regulatory requirements. CNSC staff explained that CNL has implemented a safety analysis program that ensures systematic evaluation of the potential hazards associated with the conduct of proposed activities and considers the effectiveness of preventative measures and strategies in reducing the effects of such hazards, in compliance with regulatory requirements of REGDOC-2.4.3. CNSC staff reported that it assessed CNL's safety analysis program over the current licence period through documentation reviews and onsite inspection. CNSC staff reported that it did not identify any non-compliances during the inspections.

80. CNSC staff reported that, in March 2023, it requested that CNL provide an implementation plan and gap analysis for compliance towards REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities*.[33] CNSC staff also reported that CNL submitted an implementation plan and gap analysis pertaining to REGDOC-2.4.4 in October 2023, which CNSC staff reviewed and accepted. CNSC staff added that CNL is working on the full implementation of REGDOC-2.4.4 at Whiteshell Laboratories, with a committed effective date for implementation of December 31, 2026.

81. CNSC staff reported that CNL maintains and updates its criticality safety documents and that CNSC staff reviews changes to the documents. CNSC staff confirmed that CNL continues to revise and update the criticality safety documents to reflect changes in operations with fissionable materials, in accordance with CNSC regulatory requirements under licence condition 3.1: Operating Program and licence condition 4.2: Nuclear Criticality Safety.

82. CNSC staff noted that CNL had 2 reportable events with respect to criticality safety during the licence period, one in 2020 and in 2021. CNSC staff explained that the 2020 reportable event concerned CNL failing to submit notification to CNSC staff of a revised criticality safety document for the Concrete Canister Storage Facility (CCSF). CNSC staff further explained that the 2021 reportable event was related to an inspection of 16 canisters at CCSF for fuel basket removal, where CNL ultimately decided to fully weld the canisters shut under International Atomic Energy Agency (IAEA) inspector observation to align with safety protocols. CNSC staff reported that it assessed both events and determined that the events had a low safety significance and posed no risk to the environment or the public.

83. The Commission concludes that CNL has adequate safety analysis for the licensed activities associated with the Whiteshell Laboratories. The Commission comes to this conclusion on the following basis:

- CNL's documentation under the safety analysis SCA meets regulatory requirements, including REGDOC-2.4.3
- CNSC staff reported that it did not identify any non-compliances during the current licence period
- CNL has an approved implementation plan and gap analysis pertaining to REGDOC-2.4.4

[33] REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities,* CNSC, October 2022.

- CNL continues to revise and update the criticality safety documents to reflect changes in operations with fissionable materials, in accordance with CNSC regulatory requirements under licence conditions 3.1 and 4.2

The Commission expects CNSC staff to inform the Commission, should CNL fail to implement of REGDOC-2.4.4 by December 31, 2026.

4.3.5 Physical Design

84. The physical design SCA includes the activities to design systems, structures and components to meet and maintain the design basis of a facility. The design basis is the range of conditions, according to established criteria, that the facility must withstand without exceeding authorized limits for the planned operation of safety systems.

85. Paragraph 3(1)(d) of the GNSCR requires that an application for a licence shall contain a description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence. Paragraphs 3(a) and 3(b) of the *Class I Nuclear Facilities Regulations* indicate that an application for a licence for a Class I nuclear facility must include a description of the site of the activity to be licensed, as well as plans showing the location, perimeter, areas, structures and systems of the nuclear facility. Paragraphs 6(a) and 6(b) of the *Class I Nuclear Facilities Regulations* provide that an application for a licence to operate a Class I nuclear facility must include a description of the structures, systems and equipment at the nuclear facility, including their design and their design operating conditions.

86. In section 5.5 of CMD 24-H7.1, CNL provided information on its physical design program, including its pressure boundary program, design engineering program and configuration management program. CNL submitted that its design engineering program complies with:

- CSA N286 *Management System Requirements for Nuclear Facilities*[34]
- CSA N285.0 *General Requirements for Pressure-Retaining Systems and Components in CANDU Nuclear Power Plants*[35] when it is applied in conjunction with the applicable pressure boundary quality assurance manuals.

CNL also submitted that its pressure boundary program is maintained in compliance with CSA B51 *Boiler, Pressure Vessel and Pressure Piping Code*.[36]

[34] N286 *Management System Requirements for Nuclear Facilities*, CSA Group, 2017.
[35] N285.0 *General Requirements for Pressure-Retaining Systems and Components in CANDU Nuclear Power Plants*, CSA Group, 2008.
[36] B51 *Boiler, Pressure Vessel and Pressure Piping Code,* CSA Group, 2014.

87. In section 4.5 of CMD 24-H7, CNSC staff submitted that CNL has implemented and maintained a physical design program in accordance with regulatory requirements. CNSC staff reported that CNL has implemented and maintained a design program to ensure the ability of systems, structures and components to meet and maintain their design basis. CNSC staff submitted that CNL's physical design measures at the Whiteshell Laboratories site meet all applicable regulatory requirements and CNSC expectations.

88. CNSC staff confirmed that the pressure boundary systems at Whiteshell Laboratories meet regulatory requirements. CNSC staff reported that, during the licence period, CNL updated its pressure boundary procedure for Whiteshell Laboratories to reflect the revised code effective date of CSA N285.0, from 2008 to 2017. CNSC staff noted that CNL's gap analysis and implementation plan for the updated pressure boundary procedure was acceptable, and that CNL's updated pressure boundary procedure met CSA N285.0-17 requirements.

89. CNSC staff submitted that CNL reported an unplanned event on October 18, 2023, regarding Shielded Facilities fire dampers not being maintained and missing from the Whiteshell Laboratories Preventative Maintenance Regulatory schedule. CNSC staff reviewed CNL's corrective actions in response to the event and determined that they were appropriate. CNSC staff added that it would verify that CNL completes its implementation of the corrective actions.

90. The Commission concludes that CNL continues to implement and maintain an effective physical design program at its Whiteshell Laboratories, and that the design is adequate for the requested licence period. The Commission comes to this conclusion on the following basis:

- CNL has a physical design program in place that meets regulatory requirements
- CNL's Whiteshell Laboratories meets design requirements
- Pressure boundary systems at Whiteshell Laboratories meet regulatory requirements, including CSA N285.0-17.

4.3.6 Fitness for Service

91. The fitness for service SCA covers activities that are performed to ensure that systems, structures, and components (SSCs) at CNL's Whiteshell Laboratories continue to effectively fulfill their intended purpose.

92. Paragraph 6(d) of the *Class I Nuclear Facilities Regulations* requires that an application to operate a Class I nuclear facility contains the proposed measures, policies, methods and procedures for operating and maintaining the nuclear facility. REGDOC-2.6.3, *Aging Management*[37] sets out guidance and the requirements for managing aging of

[37] REGDOC-2.6.3, *Aging Management,* CNSC, March 2014.

structures, systems, and components for reactor facilities. Specific aspects of CSA N393-13 *Fire protection for facilities that process, handle, or store nuclear substances*[38] are also applicable to this SCA.

93. In section 5.6 of CMD 24-H7.1, CNL provided information on its fitness for service program and activities, including preventative and corrective maintenance. CNL submitted that it carried out preventative or corrective maintenance and testing of Whiteshell Laboratories' safety-related systems to ensure the systems are fit for service. CNL added that it addresses evidence of deteriorating conditions or suggestions of an increased probability of upcoming failure as they are identified.

94. CNL reported that its annual inspections of Whiteshell Laboratories Waste Management Area concrete bunkers are conducted in accordance with CNL's periodic inspection plan, and repair items are identified and completed. CNL added that inspections of its CCSF have shown no significant cracking or spallation, and that preventative maintenance and repairs are performed as required. CNSC staff confirmed that the CCSF is fit for service.

95. In section 4.6 of CMD 24-H7, CNSC staff submitted that CNL has maintained a fitness for service program in accordance with regulatory requirements. CNSC staff reported that it verified that in-service inspections of safety related structures are carried out by CNL, that safety related equipment is maintained in good working order and, where required, that components are appropriately calibrated and are tested at the requisite frequency. CNSC staff added that CNL's fitness for service program at Whiteshell Laboratories meets the applicable regulatory requirements and CNSC expectations.

96. CNSC staff reported that it performed an inspection at Whiteshell Laboratories Waste Management Area (WMA) in October 2022, that focused on evaluating CNL's activities including fitness for service and maintenance. CNSC staff confirmed that routine maintenance was being conducted according to the required frequency. CNSC staff added that it reviewed CNL's governing documents for the conduct of maintenance and concluded that the program meets regulatory requirements.

97. CNL submitted that it identified issues with missed preventive maintenance activities in 2021 and reported it to the CNSC. CNL added that while it developed and implemented a corrective action plan to address the issues, it discovered in 2023 that the actions taken were not fully effective, and consequently, CNL was taking additional corrective actions. CNSC staff noted that there were no safety concerns associated with the reported event, and that it was satisfied with CNL's corrective actions to date.

[38] N393-12, *Fire protection for facilities that process, handle, or store nuclear substances,* CSA Group, 2013 (R2018). This standard provides the minimum fire protection requirements for the design, construction, commissioning, operation, and decommissioning of facilities which process, handle, or store nuclear substances, and other hazardous substances that directly relate to the nuclear substances being regulated.

98. The Commission is satisfied that CNL has appropriate programs in place to ensure that the SSCs at its Whiteshell Laboratories will remain fit for service throughout the proposed licence period. The Commission comes to this conclusion on the following basis:

- CNL has maintained a fitness for service program in accordance with regulatory requirements, including REGDOC-2.6.3
- CNL performs routine maintenance according to the required frequency
- CNL has performed preventative maintenance and repairs as required
- CNL implemented additional corrective actions when issues were identified

4.3.7 Radiation Protection

99. The radiation protection SCA covers the implementation of a radiation protection program in accordance with the *Radiation Protection Regulations*. The radiation protection program must ensure that radiation doses to persons and contamination are monitored, controlled, and kept as low as reasonably achievable (ALARA), with social and economic factors taken into consideration.

100. Section 4 of the *Radiation Protection Regulations* requires licensees to implement a radiation protection program. As part of this program, licensees must keep effective and equivalent doses received by, and committed to, persons ALARA, taking into account social and economic factors, and ascertain the quantity and concentration of any nuclear substance released as a result of the licensed activity. Paragraphs 6(e) and 6(h) of the *Class I Nuclear Facilities Regulations* require that an application to operate a Class I nuclear facility contains the proposed procedures for handling, storing, loading and transporting nuclear substances and hazardous substances, as well as the effects on the environment and the health and safety of persons that may result from the operation and decommissioning of the nuclear facility, and the measure that will be taken to prevent or mitigate those effects.

101. REGDOC-2.7.1, *Radiation Protection*[39] provides guidance on radiation protection programs, the principles of worker dose control and the principles of radiological hazard control to ensure the protection of workers and the public. REGDOC-2.7.2, *Dosimetry, Volume I: Ascertaining Occupational Dose*[40] sets out guidance for ascertaining occupational dose and provides guidance for making changes to dose-related information filed with Health Canada's National Dose Registry.

102. In section 5.7 of CMD 24-H7.1, CNL provided information on its radiation protection program including its worker dose control. CNL submitted that its radiation protection program complies with the requirements of the *Radiation Protection Regulations*.

[39] REGDOC-2.7.1, *Radiation Protection*, CNSC, July 2021.
[40] REGDOC-2.7.2, *Dosimetry, Volume I: Ascertaining Occupational Dose*, CNSC, July 2021.

103. CNL submitted that Whiteshell Laboratories did not exceed regulatory dose limits or action levels[41] during the licence period and that individual and collective doses remained ALARA. CNL reported that the highest maximum individual whole-body annual dose for persons designated as nuclear energy workers (NEWs) was in 2020 with 2.97 millisieverts per year (mSv/y). CNL submitted that worker dose decreased in 2021 after the completion of decommissioning activities and is expected to remain low until future work begins.

104. In section 5.7 of CMD 24-H7.1, CNL described its radiation protection improvement initiatives completed during the current licence period, including the Whiteshell Laboratories controlled area reduction initiative and air dispersion model developed to support planning of nuclear building demolition.

105. In section 4.7 of CMD 24-H7, CNSC staff reported that CNL has implemented and maintained an effective radiation protection program as required by the *Radiation Protection Regulations*. CNSC staff explained that CNL's radiation protection program ensures that there are adequate measures in place to control and minimize radiological hazards and the spread of radioactive contamination. CNSC staff added that methods of control include the use of radiation zone controls, surface contamination monitoring, in-plant air monitoring and radiological dose rate surveys.

106. CNSC staff reported that doses to NEWs at CNL's Whiteshell Laboratories remained well below regulatory dose limits[42] over the current licence period. CNSC staff confirmed that the maximum effective dose received by a CNL NEW during the current licence period was 2.97 mSv/y, in 2020. CNSC staff added that, in the last 5-year cycle, the maximum effective dose received by a NEW was 3.09 mSv/y occurring in 2019. CNSC staff found that CNL has effectively applied the ALARA principle over the current licence period. CNSC staff added that equivalent doses for skin and extremities to Whiteshell Laboratories NEWs were below the CNSC regulatory equivalent dose limits for a NEW from 2019-2023. CNSC staff also reported that no radiological action levels were reached from 2019 to 2023 at the Whiteshell Laboratories site.

107. CNSC staff reported that CNL implemented radiation and contamination control programs to control and minimize radiological hazards and the spread of radioactive contamination, at the Whiteshell Laboratories. CNSC staff noted that CNL's methods of control include the use of radiation zone controls, surface contamination monitoring, in-plant air monitoring and radiological dose rate surveys. During the current licence period, CNSC staff conducted one compliance inspection related to the radiation protection SCA, not identifying any non-compliances.

108. The Commission concludes that CNL has implemented and maintained an adequate radiation protection program to protect the health and safety of persons and the environment from radiation hazards associated with the Whiteshell Laboratories.

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[41] An action level is defined in the *Radiation Protection Regulations* as "a specific dose of radiation or other parameter that, if reached, may indicate a loss of control of part of a licensee's radiation protection program and triggers a requirement for specific action to be taken".

[42] The regulatory dose limits for nuclear energy workers are 50 mSv in any one year and 100 mSv in a five-year dosimetry period. The regulatory dose limit for members of the public is 1 mSv in one calendar year.

The Commission comes to this conclusion on the following basis:

- CNL has implemented a radiation protection program that meets the requirements of the *Radiation Protection Regulations*
- doses to workers at the Whiteshell Laboratories were kept well below regulatory limits during the current licence period
- CNSC did not identify any non-compliances during its compliance inspection related to the radiation protection SCA

4.3.8 Conventional Health and Safety

109. The conventional health and safety SCA covers the management of workplace safety hazards to minimize risk to the health and safety of workers posed by conventional (non-radiological) hazards in the workplace. This program includes compliance with applicable labour standards.

110. The NSCA provides that the Commission must ensure that the applicant takes the necessary measures to safeguard the health of persons. Paragraph 3(f) of the *Class I Nuclear Facilities Regulations* provides that the licence application for a Class I nuclear facility must include a description of the proposed worker health and safety policies and procedures. REGDOC-2.8.1, *Conventional Health and Safety*[43] sets out information regarding conventional health and safety and the implementation and maintenance of a conventional health and safety program. In addition, CNL's activities must comply with the *Canada Labour Code*[44], and the associated *Canada Occupational Health and Safety Regulations*.[45]

111. In section 5.8 of CMD 24-H7.1, CNL provided information regarding the implementation of its conventional safety program including information on its lost-time injuries. CNL reported that lost-time injuries increased in 2023, with 4 in 2023 compared to 1 in the previous 4 years combined. CNL reported that two lost-time injuries were the result of slips on ice, one was the result of an employee rolling their ankle during a security "use of force" training exercise, and one was a firefighter who sustained injury during a physical training session.

112. In section 4.8 of CMD 24-H7, CNSC staff confirmed that CNL has maintained a conventional health and safety program that meets regulatory requirements of Part II of the *Canada Labour Code,* and the *Canada Occupational Health and Safety Regulations.* CNSC staff reported a minor non-conformance during a 2021 inspection related to this SCA, with negligible safety significance, and confirmed that CNL had implemented adequate corrective actions. With respect to the increase in recordable lost-time injuries in 2023 at Whiteshell Laboratories, CNSC staff reported that it had reviewed the reported lost-time injuries and did not have concerns.

[43] REGDOC-2.8.1, *Conventional Health and Safety*, CNSC, July 2019.
[44] R.S.C., 1985, c. L-2.
[45] SOR/86-304.

113. The safety stand-down initiated in 2022 after a worker received an electric shock while performing maintenance activities on a pump was discussed previously in section 4.3.2 of this *Record of Decision*. The Commission notes that CNL implemented corrective actions and CNSC staff continues to verify the adequacy of the measures through its compliance oversight.

114. The Commission concludes that CNL will make adequate provision for the protection of the health and safety of persons with respect to conventional hazards arising from the operation of its Whiteshell Laboratories for the proposed licence period. The Commission comes to its conclusion on the basis that CNL's conventional health and safety program meets regulatory requirements, including Part II of the *Canada Labour Code*, and the *Canada Occupational Health and Safety Regulations.* The Commission notes that CNL has experienced a number of lost-time injuries at its Whiteshell Laboratories. These injuries and their increase in 2023 are concerning to the Commission, but the Commission is satisfied with CNL's actions in response to these events.

4.3.9 Environmental Protection

115. Environmental protection programs are intended to identify, control, and monitor all releases of radioactive and hazardous substances, and aim to minimize the effects on the environment which may result from the licensed activities. These programs include effluent and emission control, environmental monitoring, and estimated doses to the public.

116. In accordance with the NSCA, licensees are required to ensure that there are adequate provisions for the protection of the environment. Paragraphs 12(1)(c) and (f) of the GNSCR require each licensee to take all reasonable precautions to protect the environment and the health and safety of persons, and to control the release of radioactive nuclear substances and hazardous substances within the site of the licensed activity and into the environment. The *Radiation Protection Regulations* prescribe dose limits for the public, which, pursuant to subsection 1(3), are 1 mSv per calendar year.

117. Sections 6 and 7 of *Class I Nuclear Facilities Regulations* require that a licence application in respect of the operation and decommissioning of a Class I nuclear facility include information on: the proposed location of points of release, the proposed maximum quantities and concentrations, and the anticipated volume and flow rate of releases of nuclear substances and hazardous substances into the environment, including their physical, chemical and radiological characteristics; the proposed measures to control releases of nuclear substances and hazardous substances into the environment; and the proposed measures to prevent or mitigate the effects of accidental releases of nuclear substances and hazardous substances on the environment.

118. REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures*, Version 1.2[46] describes the CNSC's principles of environmental protection, the scope of an environmental review and the roles and responsibilities associated with an environmental review, as well as the CNSC's requirements and guidance for developing environmental protection measures, including an environmental risk assessment (ERA) where required. CSA N288.6, *Environmental Risk Assessments at Class I Nuclear Facilities and Uranium Mines and Mills*[47] provides requirements for the performance and maintenance of an ERA at nuclear facilities.

119. In section 5.9 of CMD 24-H7.1, CNL provided information on its environmental protection program, including its effluent and emissions controls as well as estimated dose to critical groups. CNL submitted that its environmental protection program complies with REGDOC-2.9.1, and aligned with:

- CSA N288.4-10, *Environmental Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills*[48]
- CSA N288.5-11, *Effluent Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills*[49]
- CSA N288.6-12, *Environmental Risk Assessment at Class I Nuclear Facilities, and Uranium Mines and Mills*
- CSA N288.7-15, *Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills*[50]
- CSA N288.8-17, *Establishing and Implementing Action Levels for Releases to the Environment from Nuclear Facilities*[51]

120. In section 4.9 of CMD 24-H7, CNSC staff reported that CNL has an environmental protection program in place that protects the environment and human health in accordance with regulatory requirements. CNSC staff reported that Whiteshell Laboratories' environmental monitoring program achieves 3 main tasks:

- monitor direct releases to the environment
- monitor contaminant pathways
- monitor biological effects as applicable to all individual monitoring.

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[46] REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures*, Version 1.2, CNSC, September 2017.
[47] N288.6-12, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills*, CSA Group, 2012.
[48] CSA N288.4-10, *Environmental Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills*, CSA Group, 2010.
[49] CSA N288.5-11, *Effluent Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills*, CSA Group, 2011.
[50] CSA N288.7-15, *Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills*, CSA Group, 2015.
[51] CSA N288.8-17, *Establishing and Implementing Action Levels for Releases to the Environment from Nuclear Facilities*, CSA Group, 2017

121. CNSC staff reported that between 2019 and 2023, there were 2 reportable events related to the Environmental Protection SCA for Whiteshell Laboratories:

- June 10, 2021 – Hydraulic fluid spill
- January 12, 2023 – Process outfall effluent exceeded Whiteshell Laboratories action level (300 µg/L) for manganese

CNSC staff reported that it is satisfied with CNL's corrective actions after follow-ups and desktop reviews and determined that these events were of negligible safety significance and impact on the environment and public.

122. With respect to a 2023 CNSC environmental protection inspection, which resulted in 2 notices of non-compliance, CNL reported that it had addressed one of the non-compliances and ensured that plans for environmental monitoring, effluent verification monitoring, and groundwater monitoring are reviewed annually. CNL also reported that for the second non-compliance, it was in the process of updating its staff training records on the environmental protection program to ensure that identified training gaps have been addressed and the records are properly filed. The Commission expects to be updated in due course respecting the adequacy of CNL's updates and addressing of training gaps.

Environmental Risk Assessment

123. In section 4.9 of CMD 24-H7, CNSC staff submitted that CNL had been required to establish and maintain a site-wide ERA as part of its current licence. CNSC staff noted that the environmental assessment Comprehensive Study Report for the decommissioning of Whiteshell Laboratories,[52] which was used to inform environmental protection measures for the Whiteshell Laboratories site, was completed in 2002, predating CSA N288.6-12.

124. In section 5.9 of CMD 24-H7.1, CNL reported that it had submitted a site-wide ERA to the CNSC in May 2023, for review and acceptance per CSA N288.6-12. CNL noted that it had received comments from CNSC staff and that it was in the process of dispositioning comments at the time that its CMD was submitted for the hearing.

125. In its presentation (CMD 24-H7.A), CNSC staff reported that it had conducted an environmental protection review[53] (EPR) of the CNL Whiteshell Laboratories licence renewal application, which summarized findings from CNSC staff's review of CNL's site-wide ERA. CNSC staff reported that its review of the submitted site-wide ERA, which was conducted in collaboration with Environment and Climate Change Canada, had determined that there are no significant risks to the public or the environment and that the public and the environment continue to be protected. CNSC staff confirmed that CNL completed its ERA in accordance with REGDOC-2.9.1 and CSA N288.6.

[52] Canadian Nuclear Laboratories, *Whiteshell Laboratories Decommissioning Project Comprehensive Study Report*, 2002.
[53] *Environmental Protection Review Report: Whiteshell Laboratories*, CNSC, July 2024 (CMD 24-H7, Appendix F)

126. The MMF (CMD 24-H7.6, CMD 24-H7.6A) expressed concerns that the 2002 Comprehensive Study Report was out of date. The Commission asked for CNSC staff's perspective on this issue. CNSC staff responded that, from the perspective of evaluating risk to the environment, the information in the updated ERA would be used rather than the Comprehensive Study Report.[54]

Effluent and Emissions Control

127. In section 5.9 of CMD 24-H7.1, CNL provided information regarding its effluent monitoring. CNL noted that it has monthly guidelines, which are administrative levels that are below action levels and regulatory limits. CNL provided the number of non-radiological effluent parameters above its monthly guidelines at any of its monitoring points over the past four years. CNL reported that between 2020 and May 31, 2024, there was one incident where an action level was exceeded for an effluent discharge to the environment. CNL explained that this exceedance occurred in 2022 and pertained to manganese concentrations being observed from surrounding soil in an area naturally high in manganese due to excessive sediments entering the storm drain system. CNL reported that this exceedance led to a renewed vigour in conducting street cleaning operations after the spring melt and after major demolition projects to prevent reoccurrence.

128. With respect to radiological releases, CNL submitted that its airborne and liquid effluent monitoring results for the current licence period demonstrate that it has taken reasonable precautions to control the release of radioactive nuclear substances on site and into the environment and continue to provide for the protection of the environment. CNL noted that while tritium is elevated at some locations in the Waste Management Area ditches, the levels of tritium at the points leaving CNL property remain low. CNL added that there were no radioactive and/or hazardous effluents released into the environment, liquid or gaseous, from the Waste Management Area as part of routine operations.

129. In tables 4 and 5 in section 4.9 of CMD 24-H7, CNSC staff provided annual radiological releases to air and water from Whiteshell Laboratories from 2016-2022. CNSC staff submitted that airborne emissions from CNL's Whiteshell Laboratories have been consistently below regulatory limits. For liquid effluents, CNSC staff reported that nuclear and hazardous substances in liquid effluent discharged to the Winnipeg River remained well below Whiteshell Laboratories licence limits and that discharges at these low levels would not pose a concern to people or to the health of the Winnipeg River's ecosystem.

130. CNSC staff reported that it reviewed the results of non-radiological hazardous substance monitoring from Whiteshell Laboratories and determined that:

- the levels of non-radiological hazardous substances released to air from Whiteshell Laboratories have reduced significantly since the replacement of building heating fuel in 2013

[54] Hearing transcript, pages 170-171.

- overall, airborne emissions remained below the National Pollutant Release Inventory reporting threshold with the exception of particulate matter (PM10 & PM2.5[55]), which has been attributed to increased dust from building demolition and excavation projects
- the levels of hazardous substances released in liquid effluent from Whiteshell Laboratories have consistently been well below limits
- greenhouse gas emissions from Whiteshell Laboratories have consistently been below Environment Climate Change Canada's greenhouse gas emissions threshold

131. Referencing the concerns raised by CELA (CMD 24-H7.5), the Commission sought details regarding particulate matter emissions that were greater than the National Pollutant Release Inventory reporting standard. A CNL representative explained that the exceedance resulted from a lack of dust control measures being applied to gravel roads. The CNL representative added that, as a result, CNL applied magnesium chloride to suppress dust from the driving on gravel roads due to vehicles on the Whiteshell Laboratories site. The CNL representative also reported that it applies standard dust mitigation measures to decommissioning activities.

Assessment and Monitoring

132. In section 5.9 of CMD 24-H7.1, CNL reported that its environmental monitoring activities include the measurement of ambient gamma radiation, as well as sampling and analysis of drinking water, air, fish, wild game, garden produce, and river sediments. CNL submitted that the environmental impact of the decommissioning of Whiteshell Laboratories, to date, can be characterized as low, with low potential for human or ecological impact. CNL noted that overall trending indicates stable performance, with no cases of widespread degrading conditions.

133. In section 4.9 of CMD 24-H7, CNSC staff reported that it reviewed the Whiteshell Laboratories environmental monitoring results from the current licence period and found that:

- surface water monitoring of several drainage ditch locations around Whiteshell Laboratories shows that levels of gross beta, gross alpha, and tritium are well below Health Canada's *Guidelines for Canadian Drinking Water Quality* and are similar to monitoring values from different sampling years
- vegetation monitoring at Whiteshell Laboratories shows gross beta values are similar across sampling years and are within the same magnitude of background and control samples
- based on compliance activities and technical assessments, CNSC staff have found that CNL is compliant with REGDOC-2.9.1 and continues to implement and maintain an effective Environmental Monitoring Program for Whiteshell Laboratories that adequately protects the environment and the health and safety of people

[55] PM10 & PM2.5 denote particulate matter with a mass median diameter less than 10 micrometres (µm) and 2.5 µm, respectively.

CNSC staff also reported that the Whiteshell Laboratories Environmental Monitoring Program demonstrates that the licensee has measures in place that adequately protect the environment and the health and safety of people.

134. The Commission enquired about the selection of CNL's environmental monitoring sampling locations. A CNL representative reported that CSA standards provide guidance in terms of the objectives to be established for monitoring programs, and that monitoring locations reflect the activities that are taking place. The CNL representative reported that CNL looks at historical wind patterns, wind roses and predominant wind direction and monitors vegetation primarily down-wind. The CNL representative added that for groundwater effluent and environmental monitoring, CNL is also monitoring some distance away from the Whiteshell Laboratories site to establish baseline conditions that are not affected by the operations at the Whiteshell Laboratories.

Protection of People

135. In Table 12 of CMD 24-H7.1, CNL submitted the annual doses to critical groups from Whiteshell Laboratories from 2020 to 2023, for liquid effluent and air emissions. The maximum dose reported in this period was 0.0067 mSv/y in 2020, which is well below the public dose limit of 1 millisievert per year (mSv/y) in the *Radiation Protection Regulations*.

136. In section 4.9 of CMD 24-H7, CNSC staff confirmed that the total estimated dose for a member of the public from radioactive emissions and effluents discharged from Whiteshell Laboratories was consistently well below the regulatory dose limit of 1 mSv/y. CNSC staff added that the release data for facilities is available on the CNSC Open Government Portal.

137. With reference to CELA's intervention (CMD 24-H7.5), the Commission enquired about tritium monitoring at Whiteshell Laboratories. CNSC staff reported that tritium is a component that is sampled and analyzed as part of CNL's environmental monitoring program. CNSC staff reported that CNL considered tritium in its ERA and that the overall conclusions were that the dose resulting from any risk due to tritium was very low for the receiving environment. CNSC staff added that it is satisfied that any risk due to tritium has been appropriately characterized in the ERA, and that there are no concerns from CNSC staff's perspective.

138. The Commission enquired about the significance of tritium at Whiteshell Laboratories. A CNL representative indicated that tritium concentrations were very low and a small portion of the public dose associated with the Whiteshell Laboratories site. The CNL representative added that very small amount of tritium was observed directly outside some of the facilities within the waste management area.

Environmental Management System

139. CNSC staff reported that it reviewed, during inspections and desktop reviews, CNL's annual internal audits, management reviews, and environmental goals, targets, and objectives to ensure compliance with REGDOC-2.9.1 (2017). CNSC staff reported that the results of these reviews demonstrate that CNL's Environmental Management System for Whiteshell Laboratories meets CNSC requirements as outlined in REGDOC-2.9.1 (2017).

CNSC Independent Environmental Monitoring Program

140. As described in section 4.9 of CMD 24-H7, the CNSC has implemented its Independent Environmental Monitoring Program (IEMP) to support its assessments of whether the public and the environment around licensed nuclear facilities are safe. The IEMP is separate from, but complementary to, the CNSC's ongoing compliance verification program. The IEMP involves taking samples from public areas around nuclear facilities and measuring and analyzing the amount of radiological and hazardous substances in those samples. CNSC staff collect the samples and send them to the CNSC's independent laboratory for testing and analysis.

141. CNSC staff reported that the IEMP results from the 2022 IEMP campaign around Whiteshell Laboratories show the levels of nuclear substances in all samples were below available guidelines, below CNSC screening levels and were similar in range to the results in the 2017 IEMP campaign around Whiteshell Laboratories. CNSC staff added that these results indicate that people and the environment in the vicinity of Whiteshell Laboratories are protected and that there are no health impacts.

142. The Commission enquired about the integration of Indigenous perspectives into the IEMP. CNSC staff reported that it conducts extensive engagement with Indigenous Nations and communities as part of the IEMP. CNSC staff explained that it sends notifications to nearby Indigenous Nations and communities prior to upcoming IEMP sampling campaigns and invites them to discuss the IEMP. CNSC staff added that it also invites Indigenous Nations and communities to join CNSC staff while they are undertaking sampling. CNSC staff added that it can also provide supports to Indigenous Nations and communities with respect to establishing their own independent environmental monitoring programs.

143. Asked for details about the IEMP process and the period of time before sharing the results, CNSC staff reported that results were typically posted within six months of the sampling campaigns. CNSC staff added that the samples needed to be analysed and the results reviewed before being posted online.

Conclusion on Environmental Protection

144. The Commission concludes that CNL has adequate measures in place to provide for the protection of the health and safety of persons and the environment throughout the proposed licence period. The Commission is satisfied that the measures implemented at Whiteshell Laboratories are adequate for the purposes of environmental protection under the NSCA. The Commission comes to this conclusion on the following basis:

- CNL has maintained an environmental protection program that meets regulatory requirements, including REGDOC-2.9.1
- releases to the environment from the Whiteshell Laboratories during the current licence period were well below regulatory limits, with minor instances of exceedances and the Commission is satisfied with CNL's measures implemented to prevent reoccurrence.
- CNL's ERA meets the requirements of REGDOC-2.9.1 and CSA N288.6
- the dose to the public during the current licence period was well below the regulatory limit

4.3.10 Emergency Management and Fire Protection

145. The emergency management and fire protection SCA covers the measures for preparedness and response capabilities implemented by CNL in the event of emergencies and non-routine conditions at its Whiteshell Laboratories. These measures include nuclear emergency management, conventional emergency response, and fire protection and response.

146. Subsection 24(4) of the NSCA provides that the applicant, in carrying out the proposed licensed activity, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

147. Paragraph 12(1)(c) of the GNSCR states that the licensee shall "take all reasonable precautions to protect the environment, preserve the health and safety of persons and maintain the security", while paragraph 12(1)(f) states that the licensee shall "take all reasonable precautions to control the release of radioactive nuclear substances or hazardous substances within the site of the licensed activity and into the environment of the licensed activity".

148. Paragraph 6(k) of the *Class I Nuclear Facilities Regulations* requires that a licence application include information on the licensee's proposed measures to prevent or mitigate the effects of accidental releases of nuclear substances and hazardous substances on the environment, the health and safety of persons and the maintenance of national security. Paragraph 7(i) of the *Class I Nuclear Facilities Regulations* requires that an application for a licence to decommission a Class I nuclear facility include the proposed measures to prevent or mitigate the effects of accidental releases of nuclear substances and hazardous substances on the environment, the health and safety of persons and the maintenance of national security, including an emergency response plan.

149. REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response*, Version 2[56] sets out the CNSC's requirements and guidance for emergency preparedness, and applies to licensees and licence applicants for Class I nuclear facilities, including CNL.

150. In section 5.10 of CMD 24-H7.1, CNL provided information on its emergency management program, which is based on compliance with REGDOC-2.10.1 and CSA N393 *Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances*.[57] CNL reported that it performed a range of drills and exercises during the licence period and will continue to conduct drills and exercises and train employees to ensure that the program is compliant.

151. Regarding fire protection, CNL submitted that it identified deficiencies in the implementation of the Whiteshell Laboratories Fire Protection Program in April 2023. CNL explained that it identified the deficiencies through an internal self-assessment and reported them to the CNSC. CNL reported that this assessment determined that training records for members of the on-site fire brigade were incomplete, and therefore CNL could not demonstrate that fire response staff were adequately trained and competent to provide fire suppression activities consistent with the Fire Protection Program for the Whiteshell Laboratories site. CNL added that deficiencies were also identified with the maintenance of required fire protection equipment, including the procedures for equipment inspection, testing, and maintenance, and for the use of incomplete or expired personal protective equipment.

152. CNL reported that it put in place compensatory and corrective actions and implemented a safety stand-down, reducing the risk of fire at the Whiteshell Laboratories site. CNL reported that it implemented measures including:

- adding 30 new firefighters to bolster on-site fire response capabilities
- conducting a fire systems inspection and making improvements to hydrants, detection systems, emergency lighting, and fire extinguishers.

CNL also reported that it updated its procedures and developed and submitted a multi-phase restart plan to the CNSC, outlining requirements for the Whiteshell Laboratories site and the corrective actions required to be completed.

153. In section 4.10 of CMD 24-H7, CNSC staff reported that CNL's overall compliance rating for emergency management and fire protection was Below Expectations in 2022 and 2023. On October 13, 2023, a CNSC Designated Officer issued a notice of violation and imposed an Administrative Monetary Penalty[58] (AMP) of $14,860 to CNL. The AMP was in response to CNSC staff's findings from the August 22, 2023, Emergency Management and Fire Protection reactive inspection, taking into consideration CNL's compliance history and the licensee's negligence.

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[56] REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response*, Version 2, CNSC, February 2016.
[57] CSA N393-13 *Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances*, CSA Group, 2013
[58] Administrative Monetary Penalties are monetary penalties imposed by the CNSC to promote compliance with the NSCA and its regulations, without court involvement, for the violation of a regulatory requirement. They can be imposed to any individual or corporation subject to the NSCA.

154. CNSC staff added that the Whiteshell Laboratories site was in a phased safety stand-down while CNL was working to progress to normal operations through a multi-phase recovery plan by implementing root cause analysis corrective actions. CNSC staff reported that it would continue to perform regulatory oversight of CNL's multi-phase recovery plan activities including holding bi-weekly meetings with CNL on the matter. In its presentation (CMD 24-H7.A), CNSC staff confirmed that CNL had returned to normal operations in September 2024, and that CNL's fire protection program met the requirements of CSA N393-13.

155. CNSC staff reported that it increased regulatory scrutiny under a focused compliance verification plan that includes:

- Increased scope and/or frequency of inspections.
- Increased reporting requirements.
- Increased frequency of meetings between CNSC staff and the licensee.
- Additional document reviews.

CNSC staff reported that CNL has not demonstrated that fire protection assessment documents, including fire hazard analysis and code compliance reviews are updated or confirmed at least once every 5 years to reflect nuclear facility modifications. CNSC staff reported that it will increase regulatory oversight for this licence requirement for the maintenance of CNL's Fire Protection assessment via compliance plan inspections and licensing actions through the proposed LCH.

156. CNSC staff reported that it increased compliance activities from the Whiteshell Laboratories baseline inspection plan of 3 inspections for the fiscal year 2023-2024 with an additional 4 reactive inspections conducted since March 2023 covering the Emergency Management Fire Protection, Management System and Human Performance Management SCAs.

157. CNSC staff noted the reduced site operations resulting from the site wide stand-down and CNL's risk-based graduated phases of operation for the Whiteshell Laboratories site towards full normal operations. As a result, CNSC staff determined that the risk to the health or safety of persons or impact on the environment from the deficiencies in the fire protection program was low.

158. Notwithstanding CNL's performance issues, CNSC staff confirmed that CNL's site emergency response plan meets the requirements of CNSC REGDOC-2.10.1. CNSC staff added that CNL was in the process of implementing CSA N393-22*, Fire protection for facilities that process, handle, or store nuclear substances*,[59] which was published in September 2022. CNSC staff noted that CNL had submitted an implementation plan and gap analysis for CNSC staff review.

[59] CSA N393-22, *Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances*, CSA Group, 2022.

159. The Commission enquired about the discovery of deficiencies in the implementation of Whiteshell Laboratories' Fire Protection Program. A CNL representative responded that in March 2023, the Whiteshell fire protection and emergency management groups were realigned to report each assessment in the Corporate Fire Protection and Emergency Management Directorate. The CNL representative noted that it then conducted a baseline assessment that led to the findings and the subsequent safety stand-down.

160. Asked for the reason why the deficiencies in the implementation of Whiteshell Laboratories' Fire Protection Program were not detected by on-site inspections, CNSC staff explained that both CNSC staff and the licensee were evaluating that issue. The Commission enquired about tools other than inspections that CNSC staff has to maintain oversight on at the Whiteshell Laboratories. CNSC staff reported that CNSC staff proposed an additional licence condition, licence condition 1.2 that would require CNL to submit progress reports on the status of its integrated assessment plan, as an additional tool to increase CNSC staff's regulatory scrutiny. This topic is discussed further in section 4.6.2 of this *Record of Decision.*

161. The Commission asked for an update on the below expectation rating in the Emergency Management and Fire Protection SCA. CNSC staff responded that CNSC staff had performed a comprehensive review of CNL's submissions as well as focused compliance inspections, and that CNL had implemented measures such as the procurement of specialized firefighting and rescue equipment. CNSC staff added that its review demonstrated that there has been an improvement in this SCA at the Whiteshell Laboratories. CNSC staff also confirmed that all firefighters at Whiteshell Laboratories were accredited with the National Fire Protection Association.

162. The Commission asked for more information concerning responsibilities when engaging off-site responders. A CNL representative reported that CNL employs an emergency response protocol with clear roles and responsibilities to address any emergent situation that could occur on or near CNL's site. A CNL representative added that, for an emergency that could affect persons offsite, CNL would coordinate with provincial and municipal organizations to provide messaging and information.

163. On the topic of floods, a CNL representative reported that flooding was not a common occurrence at Whiteshell Laboratories as the Winnipeg River is carefully controlled in terms of levels by the provincial hydro authority (Manitoba Hydro). The CNL representative added that in the event of a dam failure, CNL would anticipate temporary overland flooding on site, but to an insignificant level.

164. The Commission asked for information on how CNL was responding to climate change at Whiteshell Laboratories. A CNL representative reported that CNL was informed by models that Environment and Climate Change Canada makes available, looking at surface water, stream flows, rainfall and precipitation intensity. The CNL representative noted that, as the Whiteshell Laboratories facility has a finite lifetime, there are lessened vulnerabilities.

165. The Commission enquired about CNL's management of wildfire at Whiteshell Laboratories. A CNL representative reported that CNL has engaged with the provincial organization responsible for combat of wildland fire in the province of Manitoba. CNL added that an aerial waterbomber was stationed about 25 kilometres from the Whiteshell Laboratories site. CNL also reported that CNL has new wildland firefighting equipment available to the trained firefighters at the Whiteshell Laboratories site, including a new, custom-built wildfire apparatus to enable CNL to fight the type of grassland wildfire possible in the Whiteshell Laboratories area.

166. The Commission concludes that, while CNL's performance requires improvement, for the purpose of this licence renewal, CNL's nuclear and conventional emergency management program and fire protection measures are adequate to protect the health and safety of persons and the environment. The Commission comes to this conclusion on the following basis:

- CNL's emergency preparedness program meets the requirements of CNSC REGDOC-2.10.1
- CNL appropriately responded to the identified deficiencies in the fire protection program and has implemented a multi-phase recovery plan by implementing root cause analysis corrective actions
- With the completion of the recovery plan, CNL's fire protection program meets the requirements of CSA N393-13
- the risks to the health or safety of persons and impact on the environment from the identified fire protection deficiencies are low, and CNSC staff will provide increased regulatory scrutiny to confirm the effectiveness of the fire protection program and ensure that CNL returns to full compliance

4.3.11 Waste Management

167. Waste management covers waste-related programs that form part of a facility's operations up to the point where the waste is removed from the licensed site for storage, treatment, or disposal at another licensed location, and includes waste minimization, segregation, characterization, and storage programs.

168. Paragraph 3(1)(j) of the GNSCR provides that the licence application must include the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including wastes that may be stored, managed, processed, or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste. Paragraph 3(k) of the *Class I Nuclear Facilities Regulations* also requires that the application contains the proposed plan for the decommissioning of the nuclear facility or of the site. Paragraphs 7(a),(b) and (c) of the *Class I Nuclear Facilities Regulations* requires that an application for a licence to decommission a Class I nuclear facility include a description of and the proposed schedule for the decommissioning, including the proposed starting date and the expected completion date of the decommissioning and the rationale for the schedule; (b) the nuclear substances, hazardous substances, land, buildings, structures, systems and equipment that will be affected by the decommissioning; (c) the proposed measures, methods and procedures for carrying on the decommissioning.

169. REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*[60] sets out requirements and guidance for managing radioactive waste. REGDOC-2.11.2, *Decommissioning*[61] sets out requirements and guidance regarding the planning and preparation for, as well as the execution and completion of decommissioning.

170. In section 5.11 of CMD 24-H7.1, CNL provided information on its waste management program including information on its past performance and future plans. CNL reported that the radioactive waste generated over the current licence period at Whiteshell Laboratories has been safely dispositioned to Chalk River Laboratories or safely stored in certified transportation packages awaiting shipment to Chalk River Laboratories.

171. CNL reported the amounts of hazardous waste shipped off site as well as the volume of radioactive wastes transported to Chalk River Laboratories for disposition. CNL reported that it made improvements in preventing waste accumulation inside of buildings and transferring the waste to appropriate waste facilities immediately after generation. CNL noted that it has re-used or recycled as much material as practicable, including both recyclable materials sent to the municipal recycling facility and other material specific facilities throughout Manitoba.

172. CNL reported that it completed a gap analysis and prepared implementation plans of both the waste management and the decommissioning regulatory documents, including:

- REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada*[62]
- REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*
- REGDOC-2.11.1, *Waste Management, Volume III: Safety Case for the Disposal of Radioactive Waste*[63]
- REGDOC-2.11.2, *Decommissioning*

173. Regarding decommissioning, CNL submitted that it revised its overview detailed decommissioning plan in 2023, in alignment with REGDOC-2.11.2. CNL added that it submitted its detailed decommissioning plan to the CNSC for acceptance. The detailed decommissioning plan and related financial guarantee are discussed further in section 4.5.2 of this *Record of Decision.*

174. In section 4.11 of CMD 24-H7, CNSC staff reported that the singular focus of CNL at the Whiteshell Laboratories site has been the decommissioning and demolition of redundant structures on the site, all of which generate waste. CNSC staff reported that CNL maintains a waste management program in accordance with regulatory requirements, including REGDOC-2.11.1 Volume I and that CNL has implemented and maintains a waste management program that documents the activities to control the safe management of radioactive waste during all steps of its management.

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[60] REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*, CNSC, January 2021.
[61] REGDOC-2.11.2, *Decommissioning*, CNSC, January 2021.
[62] REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada,* March 2021.
[63] REGDOC-2.11.1, *Waste Management, Volume III: Safety Case for the Disposal of Radioactive Waste,* January 2021.

175. CNSC staff noted that CNL maintains a waste management program to control and minimize the volume of all waste streams generated from licensed activities. CNSC staff reported 2 notices of non-compliance of low-safety significance from a Whiteshell Laboratories Waste Management Area facility focused inspection in 2022. CNSC staff reported that one notice of non-compliance issued pertained to a waste container label non-compliance and the second notice of non-compliance pertained to an incomplete site-wide waste inventory. CNSC staff added that it reviewed CNL's corrective action for the first notices of non-compliance and determined it to be acceptable and that CNL was expected to respond to the second notices of non-compliance regarding the waste inventory by August 2024.

176. CNSC staff reported that it requested, in July 2023, that CNL submit a gap analysis and implementation plan for conformity with a new CSA standard, N292.8-21 *Characterization of radioactive waste and irradiated fuel*.[64] CNSC staff reported that it reviewed and accepted CNL's submitted gap analysis and implementation plan for CSA N292.8-21.

177. The Commission asked for comments regarding the views expressed by the Concerned Citizens of Renfrew County and Area that the CNSC treats radioactive waste as a transportation issue. CNSC staff disagreed with the intervenor's position, and noted that the waste management SCA is covered by a robust regulatory framework. CNSC staff added that CNL is responsible for ensuring that its radioactive waste management practices protect health and safety of people and the environment, and that this protection is maintained at all times.

178. The Commission asked for more information concerning CNL's waste identification and classification. A CNL representative reported that CNL applies modern characterization technologies and techniques in line with Canadian regulations and with international best practice. The CNL representative added that waste shipped from Whiteshell Laboratories to Chalk River Laboratories was characterized for transportation and that additional characterization can be performed at Chalk River Laboratories, to enable disposal.

179. The Commission enquired about the status of waste characterization at Whiteshell Laboratories. A CNL representative reported that CNL had fully characterized the WR-1 facility including analysis of the structural concrete, the safety systems, and radiological and non-radiological hazardous materials. A CNL representative added that the characterization of the rest of the site was ongoing and that CNL did not yet have a complete and comprehensive characterization of all waste.

180. Asked about waste segregation at Whiteshell Laboratories, a CNL representative reported that CNL separates and characterizes waste types in accordance with its program and international best practices through benchmarking.

[64] CSA N292.8-21 *Characterization of radioactive waste and irradiated fuel,* CSA Group, 2021.

181. The Commission asked for information regarding ditches and trenches at the Whiteshell Laboratories. A CNL representative informed that CNL utilizes ditches for surface water management and that trenches were near-surface structures used to emplace low-level operational waste in. The CNL representative added that CNL is currently doing soil and groundwater characterization around the trenches.

182. The Commission noted that clay forms the first layer of soil at the Whiteshell Laboratories and enquired about its thickness and the stratigraphy at the site. A CNL representative described the stratigraphy of the Whiteshell Laboratories site, including that the clay layer was about 6 meters deep. The Whiteshell representative added that the water table was a few metres below surface and that CNL uses the basis that the frost level penetrates the first two and a half metres.

183. The Commission enquired about the characterization of the waste present in trenches at the Whiteshell Laboratories. A CNL representative reported that CNL has records of waste emplacement and that different trenches have been used for different kinds of waste. The CNL representative added that CNL has a characterization plan to augment the historical waste emplacement records.

184. The Commission enquired about the standpipes[65] used to store waste at the Whiteshell Laboratories. A CNL representative reported that standpipes are variable in their diameter and do not exceed 14 feet (4.3 m) in depth. The CNL representative also reported that CNL has historical waste emplacement records and conducted radiological and visual inspections of the waste of some standpipes. The CNL representative added that the interior of those was in very good condition and that there was no indication of degradation of the exterior structures. The CNL representative also added that, over the proposed licence period, CNL plans to continue with the inspection of the standpipes, characterization of the materials and safe and effective removal of some wastes.

185. The Commission asked whether there was a difference between the IAEA and the Canadian definition for intermediate-level radioactive waste. CNSC staff reported that the waste classification scheme in REGDOC-2.11.1 is aligned very closely with the IAEA's definition.

186. The Commission is satisfied that CNL has implemented, and continues to maintain, a waste management program to safely manage waste at the Whiteshell Laboratories. The Commission comes to this conclusion on the following basis:

- CNL has implemented a waste management program that meets regulatory requirements, including REGDOC-2.11.1
- CNL maintains a waste management program to control and minimize the volume of all waste streams generated from licensed activities
- CNL has revised its overview detailed decommissioning plan in alignment with REGDOC-2.11.2
- CNL has an implementation plan for CSA N292.8-21 accepted by CNSC staff

[65] The standpipes are passive storage structures that consist of vertically reinforced concrete containers lined with carbon steel pipe and covered with a concrete shielding plug. Irradiated and un-irradiated fissionable materials, after handling and/or destructive testing, were originally placed in the concrete standpipes.

The Commission expects CNSC staff to inform the Commission if there are any issues with CNL's implementation of CSA N292.8-21.

4.3.12 Security

187. The security SCA covers the implementation of a program to prevent the loss, unauthorized removal and sabotage of nuclear substances, nuclear materials, prescribed equipment, or information. CNL's security program for its Whiteshell Laboratories must comply with applicable provisions of the GNSCR and Part 2 of the *Nuclear Security Regulations*[66] (NSR).

188. Paragraph 12(1)(c) of the GNSCR requires the licensee to take all reasonable precautions to protect the environment and the health and safety of persons, and to maintain the security of nuclear facilities and of nuclear substances. Paragraphs 12(1)(g) and 12(1)(h) require the licensee to implement measures for alerting the licensee to the illegal use or removal of a nuclear substance, prescribed equipment or prescribed information, or the illegal use of a nuclear facility, and measures for alerting it to acts or attempts of sabotage, anywhere at the site of the licensed activity. Paragraph 12(1)(j) requires the licensee to instruct workers on the physical security program at the site of the licensed activity and on their obligations under that program.

189. In addition, sections 21 to 23 of the GNSCR provide obligations for all licensees on the identification, storage, handling, and transfer requirements of information designated as "prescribed information". REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material*, Version 2.1[67] provides regulatory expectations and guidance for licensees regarding the CNSC's expectations under the GNSCR for security.

190. In section 5.12 of CMD 24-H7.1, CNL reported that it maintains a security program that complies with the NSR to protect nuclear material from theft and sabotage and responds to emergencies. CNL provided information on its security program, including its physical personnel and nuclear cyber security.

191. Regarding cyber security, CNL submitted that it introduced a corrective action plan to become compliant with CSA N290.7-14, *Cyber-security for Nuclear Power Plants and Small Reactor Facilities*[68] following CNSC staff inspection of CNL's Nuclear Cyber Security Program conducted by CNSC staff at Chalk River Laboratories. CNL noted that the inspection resulted in 13 notices of non-compliance and that a remediation plan was in development to implement the mandatory controls.

192. In section 4.12 of CMD 24-H7, CNSC staff reported that the security program at Whiteshell Laboratories was assessed as below expectations in the 2018, 2019, 2020 and 2021 calendar years following deficiencies identified at the Whiteshell Laboratories site that led to enforcement actions, including an Order. CNSC staff

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[66] SOR/2000-209.
[67] REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material,* Version 2.1, CNSC, September 2020.
[68] CSA N290.7-14, *Cyber-security for Nuclear Power Plants and Small Reactor Facilities*, CSA Group, 2014.

reported that the deficiencies included non-compliances related to the accessibility of special equipment and the training of tiered response force personnel. CNSC staff noted that there was no immediate risk to the security of nuclear substances at Whiteshell Laboratories during this time. Following an inspection in September 2022, CNSC staff confirmed that CNL had implemented corrective actions to meet CNSC requirements.

193. CNSC staff further reported that CNL's performance met requirements for satisfactory performance ratings in 2022 and 2023. CNSC staff noted that it performed an inspection related to the security SCA in 2023 and identified one area of non-compliance related to access to the protected area, as a mid-point review had not been completed for 1 CNL employee. CNSC staff reported that CNL took immediate actions, including a detailed review and conducted follow-up actions including providing documentation for CNSC staff review.

194. The Commission is satisfied that CNL has adequate programs and measures in place to provide for the physical security of the Whiteshell Laboratories during the proposed licence period. The Commission is further satisfied that CNL's performance with respect to the security SCA has been acceptable and meets regulatory requirements. The Commission comes to this conclusion on the following basis:

- CNL has implemented a security program that meets regulatory requirements, including those set out in the NSR
- The Commission is satisfied that the CNL is implementing measures to protect the Whiteshell Laboratories from cyber security threats
- CNL's performance for this SCA improved over the licence period and has been satisfactory since 2022

4.3.13 Safeguards and Non-Proliferation

195. The CNSC's regulatory mandate includes ensuring conformity with measures required to implement Canada's international obligations under the *Treaty on the Non-Proliferation of Nuclear Weapons*[69] (NPT). Pursuant to the NPT, Canada has entered into a *Comprehensive Safeguards Agreement*[70] and an *Additional Protocol*[71] (safeguards agreements) with the IAEA. The objective of these safeguards agreements is for the IAEA to provide credible assurance on an annual basis to Canada and to the international community that all declared nuclear material is in peaceful, non-explosive uses and that there is no undeclared nuclear material or activity in this country.

196. REGDOC-2.13.1, *Safeguards and Nuclear Materials Accountancy*[72] sets out requirements and guidance for safeguards programs for applicants and licensees who possess nuclear material, operate a uranium and/or thorium mine, carry out specified types of nuclear fuel-cycle related research and development work, and/or carry out specified types of nuclear-related manufacturing activities.

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[69] INFCIRC/140.
[70] INFCIRC/164.
[71] INFCIRC/164/Add.1.
[72] REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*, CNSC, February 2018.

197. In section 5.13 of CMD 24-H7.1, CNL submitted that it has a safeguards and non-proliferation program in place that complies with REGDOC-2.13.1. CNL provided information on its safeguards and non-proliferation activities, including nuclear accountancy and control and access and assistance to the IAEA. CNL reported the actions resulting from IAEA oversight and noted that all corrective actions have been implemented.

198. In section 4.13 of CMD 24-H7, CNSC staff submitted that CNL provided the CNSC and the IAEA with all reports and information necessary to comply with its safeguards and non-proliferation regulatory requirements. CNSC staff reported that the IAEA performed 15 inspection activities during the current licence period. CNSC staff reported that CNL provided the required access and assistance for all IAEA inspections.

199. CNSC staff reported that the IAEA has developed a new safeguards approach for the relocation of spent fuel from Whiteshell Laboratories to Chalk River Laboratories. CNSC staff reported that this will consist of the installation of safeguards equipment which will be attached to Whiteshell Laboratories' transfer flasks. CNSC staff reported that CNL has agreed to the IAEA's proposed equipment installation and will provide it with the required access and assistance to complete these activities.

200. The Commission concludes that CNL has implemented and is maintaining a satisfactory safeguards program that provides for, and will continue to provide for, the implementation of measures that are necessary for maintaining national security, and for implementing international agreements to which Canada has agreed. The Commission comes to this conclusion on the following basis:

- CNL's safeguards and non-proliferation program meets regulatory requirements, including those set out in REGDOC-2.13.1
- CNL has provided the IAEA with the necessary access and assistance to perform its activities during the current licence term

4.3.14 Packaging and Transport

201. The packaging and transport SCA covers the safe packaging and transport of nuclear substances and radiation devices to and from a licensed facility. CNL must adhere to the *Packaging and Transport of Nuclear Substances Regulations, 2015*[73] (PTNSR, 2015) and Transport Canada's *Transportation of Dangerous Goods Regulations*[74] (TDGR) for all shipments. These regulations apply to the packaging and transport of nuclear substances at CNL, including the design, production, use, inspection, maintenance and repair of packages, and the preparation, consigning, handling, loading, carriage and unloading of packages.

[73] SOR/2015-145.
[74] SOR/2001-286.

202. In section 5.14 of CMD 24-H7.1, CNL provided information on its packaging and transportation program, including the number of shipments and the volume of waste transferred to Chalk River Laboratories, over the licence period. CNL reported that its packaging and transportation processes comply with applicable Transport Canada regulations.

203. CNL reported one reportable event during the licence period, which occurred in 2021. CNL explained that the event consisted of a consignment of waste material that was misclassified in accordance with the PTNSR. CNL further explained that the event occurred because there was an incomplete inventory of the package's contents, and that the event did not result in any impact to the safety of any individuals or the environment. In CMD 24-H7, CNSC staff reported that it was satisfied with the corrective actions taken by CNL. CNSC staff noted that the event was of low safety significance to the environment and the public.[75]

204. In section 4.14 of CMD 24-H7, CNSC staff confirmed that CNL has a packaging and transport program in place to ensure that all shipments to and from its Whiteshell Laboratories comply with the PTNSR, 2015 and the TDGR. CNSC staff reported that it performed desktop reviews of CNL's program as well as inspections at both the Whiteshell Laboratories site and Chalk River Laboratories site, which is the primary destination for nuclear substances transported from Whiteshell Laboratories. CNSC staff reported that it found no concerns with CNL's implementation of its packaging and transport program.

205. CNSC staff reported that it completed one Packaging and Transport inspection at Whiteshell Laboratories, during the licensing period. CNSC staff reported that the inspection resulted in 2 notices of non-compliance that were of low safety significance. CNSC staff added that the notices of non-compliance were related to updating shipping and receiving procedures and ensuring the clear labelling of reusable packages at Whiteshell Laboratories. CNSC staff reported that it was satisfied with CNL's corrective actions.

206. The Concerned Citizens of Renfrew County and Area (CMD 24-H7.9, 24-H7.9A) expressed concerns regarding the proposed transport of waste, and particularly used fuel from Whiteshell Laboratories to Chalk River Laboratories. The Commission asked for more information on the safety measures in place for waste shipments. A CNL representative responded that the waste packages are certified and that emergency response plans are in place in the event of a transport accident. A CNL representative also reported that CNL engages with external first responders regarding shipments. A CNL representative noted that the transfer of high-level radioactive waste from dry storage into transport containers would be performed directly at the CCSF at Whiteshell Laboratories, and that once the waste is in the used fuel transportation package, dose rates would be approximately 0.01 mSv per hour, which are below CNL's administrative levels.[76]

[75] CMD 24-H7, page 82
[76] Hearing transcript, pages 185-186.

207. Asked about benchmarking of transport activities, a CNL representative reported that CNL engages with its counterparts in the United States and in the United Kingdom for benchmarking and best practices.

208. The Commission concludes that CNL has an adequate program in place to meet regulatory requirements regarding packaging and transport. The Commission comes to this conclusion on the following basis:

- CNL has implemented a packaging and transport program that meets regulatory requirements, including the PTNSR, 2015 and the TDGR
- CNL implemented corrective actions to safely package and transport radioactive materials during the current licence period

4.3.15 Conclusions on CNL's Performance and Safety and Control Measures at the Whiteshell Laboratories

209. Based on its review and analysis of all of the information provided and described above, the Commission is satisfied and concludes that CNL is qualified to carry on the licensed activities under the proposed renewed licence. The Commission finds that CNL has adequate programs in place with respect to the 14 SCAs to ensure that the health and safety of workers, the public and the environment will be protected over the proposed 3-year licence term. The Commission further concludes that CNL has measures in place to provide for the maintenance of national security and to implement international obligations to which Canada has agreed.

210. Where CNL's performance has been below expectations during the licence period, the Commission is satisfied that CNL has taken appropriate measures, including safety stand-downs, to ensure that risks to persons and the environment have remained low. The Commission is further satisfied CNL has adequate measures in place to improve its performance, and that CNSC staff will continue to provide increased regulatory scrutiny to verify that CNL implements the proposed corrective measures.

4.4 Indigenous Engagement and Consultation

211. The Commission considered the information provided by CNSC staff and CNL regarding Indigenous consultation and engagement activities in respect of this licence renewal application. The Commission also considered Indigenous views and information submitted by Indigenous Nations and communities as part of the proceedings. Indigenous consultation refers to the common law duty to consult with Indigenous Nations and communities pursuant to section 35 of the *Constitution Act, 1982*.[77]

[77] Schedule B to the *Canada Act 1982* (UK), 1982, c 11.

212. The common law duty to consult with Indigenous Nations and communities is engaged when the Crown contemplates action that may adversely affect established or potential Aboriginal and/or treaty rights. The CNSC, as an agent of the Crown and as Canada's nuclear regulator, recognizes and understands the importance of building relationships and engaging with Canada's Indigenous Nations and communities. The CNSC ensures that its licensing decisions under the NSCA uphold the honour of the Crown and consider potential impacts to claimed or established Aboriginal and/or treaty rights pursuant to section 35 of the *Constitution Act, 1982*.

213. The duty to consult is engaged wherever the Crown has "knowledge, real or constructive, of the potential existence of an Aboriginal right or title and contemplates conduct that might adversely affect it."[78] Licensing decisions of the Commission, where Indigenous interests may be adversely impacted, can engage the duty to consult, and the Commission must be satisfied that it has met the duty prior to making the relevant licensing decision.

214. In meeting its obligations towards Indigenous Nations and communities, the Commission may rely on steps and efforts undertaken by CNSC staff as well as the opportunities for Indigenous Nations and communities to give submission directly to the Commission. The CNSC's consultation process conducted during this licence renewal provided for all potentially impacted Indigenous Nations and communities to:

- participate, receive, and assess information with respect to the licence renewal
- apply for participant funding
- make submissions—both oral and written—about their concerns and how their concerns could be accommodated

The process is flexible and open to receiving information from Indigenous Nations and communities regarding any specific right that could be impacted by CNSC-regulated activities authorized by this licence renewal.

4.4.1 Indigenous Consultation by CNSC Staff

215. In section 4.15 of CMD 24-H7, CNSC staff provided the Commission with information about its consultation activities with the Indigenous Nations and communities that were identified as having a potential interest in CNL's licence renewal application. CNSC staff identified the following communities due to the proximity of their communities, treaty areas, and/or traditional territories and homelands to the Whiteshell Laboratories, or due to previously expressed interest in being kept informed:

- Sagkeeng Anicinabe First Nation (Sagkeeng)
- Manitoba Métis Federation (MMF)
- Brokenhead Ojibway Nation (BON)
- Black River First Nation (BRFN)
- Hollow Water First Nation (HWFN)
- Northwest Angle No. 33

[78] *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73 at para 35.

- Shoal Lake #40 First Nation
- Iskatewizaagegan #39 Independent First Nation
- Wabaseemoong Independent Nations
- Grand Council of Treaty 3 (GCT 3)

CNSC staff added that the Algonquins of Pikwakanagan First Nation (AOPFN) have also expressed interest in the Whiteshell Laboratories site renewal as it relates to CNL's plans for managing Whiteshell Laboratories wastes and materials at Chalk River Laboratories long term, which is in their traditional territory.

216. CNSC staff reported that on January 22, 2024, it sent letters of notification to the identified Indigenous Nations and communities. The letters provided information regarding the licence renewal application and details on how to participate in the Commission's public hearing process. CNSC staff added that it followed-up with the identified Indigenous Nations and communities to confirm receipt of the letters and to answer any questions. CNSC staff reported that on March 7, 2024, it sent email correspondence to all identified Indigenous Nations and communities to provide a direct link to the participant funding opportunity made available for this hearing.

217. On June 4, 2024, CNSC staff attended the Regional Leadership Gathering in Beausejour, Manitoba hosted by CNL to support discussions on the Whiteshell Laboratories site including the renewal and to also meet and hear from Indigenous Nations and communities directly on their concerns related to both the Whiteshell Laboratories licence renewal as well as other projects happening at the Whiteshell Laboratories site.

218. CNSC staff noted that the requirements and guidance for licensees whose proposed projects may raise the Crown's duty to consult are set out in REGDOC-3.2.2, Indigenous Engagement.[79] CNSC staff submitted that, as CNL is not proposing any changes to the facilities or operations at the Whiteshell Laboratories site, CNL's licence renewal application is not expected to lead to any new adverse impacts to potential or established Indigenous and/or treaty rights.

219. Asked to comment on its consultation activities, CNSC staff described its actions including notifying all the interested Indigenous Nations and communities, listening to concerns, and ensuring that funding was available through the participant funding program.[80]

4.4.2 Indigenous Engagement by CNL

220. In section 2 of CMD 24-H7.1, CNL provided information regarding its Indigenous engagement activities. CNL reported that it follows the guidance of REGDOC-3.2.2. CNL reported that it is advancing on a reconciliation journey with Indigenous communities, in part by supporting capacity building for Indigenous-led monitoring or guardian programs and by integrating Indigenous knowledge systems into CNL project

[79] REGDOC-3.2.2, *Indigenous Engagement*, Version 1.1, CNSC, August 2019.
[80] Hearing transcript, pages 84-85.

planning and activities. In CMD 24-H7.1B, CNL presented a summary of its engagement activities undertaken with Indigenous Nations, communities, and organizations throughout the current licensing period, from December 2019 to July 2024.

221. CNL reported that it engaged with the following communities:

- Sagkeeng First Nation
- Manitoba Métis Federation
- Black River First Nation
- Hollow Water First Nation
- Brokenhead Ojibway Nation
- Wabaseemoong Independent Nations
- Grand Council Treaty #3
- Shoal Lake 40 First Nation
- Iskatewizaagegan #39 Independent First Nation
- Northwest Angle #33 (Treaty 3)
- Peguis First Nation
- Algonquins of Pikwàkanagàn First Nation (AOPFN)

In CMD 24-H7.1B, CNL summarized its engagement activities with each community.

222. In section 4.15 of CMD 24-H7, CNSC staff noted that CNL has made positive efforts and progress in developing relationships, collaboration agreements, funding support, and collaborative monitoring activities with interested Indigenous Nations and communities.

223. Asked to comment on its engagement activities with the Sagkeeng, a CNL representative reported that CNL has put together several different agreements and engagement protocols with the community. The CNL representative added that those tools helped in addressing Sagkeeng community's concerns.

4.4.3 Submissions by Indigenous Nations and Communities

224. Four Indigenous Nations submitted written and/or oral submissions on this matter, Sagkeeng, MMF, AOPFN and BRFN with input from the HWFN.

Sagkeeng First Nation

225. In its submission, CMD 24-H7.4, Sagkeeng provided information on its review of CNL's licence renewal application, and reported that CNL had earned Sagkeeng's consent for its application for a 3-year licence renewal. In its oral presentation, Sagkeeng stated that:

> *... we have given our consent to the renewal mainly because we feel that the CNL has earned our consent. We've been working with them now for the last year-and-a-*

> *half, since I've been elected the Chief of our community. We've had some really good, positive relations and discussions with CNL. We've had a number of meetings with them and they've addressed and acknowledged many of our concerns and issues we've had with CNL.* [81]

226. Sagkeeng informed the Commission that CNL has worked constructively and collaboratively with Sagkeeng to ensure that adverse impacts to Sagkeeng's Rights have been meaningfully accommodated. Sagkeeng also informed the Commission that CNL had worked with Sagkeeng to discuss appropriate accommodation measures, using Sagkeeng's "accommodation ladder".

227. Sagkeeng expressed concerns about the CNSC's consultation efforts. Sagkeeng submitted that:

> *CNL's Licence, if renewed, will authorize CNL to engage in new decommissioning activities in Sagkeeng's Title Territory which will cause new, and exacerbate existing direct and cumulative adverse impacts to Sagkeeng's Rights. The fact that the WL is an existing facility does not exempt CNSC from consultation. CNSC Staff have not actually considered whether there might be adverse impacts to Sagkeeng's Rights from the Licence renewal, and instead have relied on the exemption of renewals from consultation as set out in CNSC policy. This is not honourable behaviour by Crown representative. Moreover, the CNSC policy in question (REGDOC 3.2.2) is unconstitutional insofar as it purports to provide a blanket exemption from consultation to certain classes of decision. Every instance of Crown conduct must be assessed on its own merits, for its own potential adverse impacts to Aboriginal and Treaty rights.*[82]

228. Sagkeeng also submitted views that:

- there are "difficulties created by the division of responsibility for discharging the Duty between CNSC Staff and commissioners."[83]
- "CNSC's regulatory documents and other policies lack meaningful procedures for dealing with, and requiring proponents to address, cumulative effects of regulated projects"[84]
- "The fairness CNSC's hearing procedures lack basic procedural fairness for participants other than the proponent and CNSC staff. Intervenors should have an opportunity to participate fully in the hearing process, as is common in other federal regulatory tribunals. This should include submitting evidence, including expert evidence; cross-examining the proponent and CNSC staff, and having procedures in place for the receipt of Indigenous Knowledge which may not be effectively communicated in writing."[85]

[81] Hearing transcript, pages 66-67.
[82] CMD 24-H7.4, page 8.
[83] CMD 24-H7.4, page 9.
[84] CMD 24-H7.4, page 10.
[85] CMD 24-H7.4, page 10.

Sagkeeng recommended that "CNSC accelerate its ongoing review of its consultation practices, including REGDOC-3.2.2 and commit to implementing a revised consultation approach, developed collaboratively with affected Indigenous peoples, before the next licensing process for [Whiteshell Laboratories]."[86]

229. During the hearing, Sagkeeng also noted its position that

> *...any decisions made by the Commission related to the end state of the Whiteshell site require Sagkeeng's free, prior, and informed consent.*[87]

230. Asked for information by the Commission about Sagkeeng's "accommodation ladder", a Sagkeeng representative reported that the accommodation ladder is meant to provide a mechanism for both the Crown or Crown agency as well as proponents to have a straightforward and easily understandable road map for consultation and engagement.

231. The Commission enquired whether any new information about Whiteshell Laboratories had arisen over the past five-year licence period that would affect the scope of the decommissioning activities. A CNL representative responded that there had been no such changes. CNSC staff confirmed that the scope had not changed, and that, under the proposed licence, CNL would be expected to safely carry out activities, including environmental remediation work and site decommissioning, in line with regulatory requirements. A representative from Sagkeeng expressed the view that the ongoing decommissioning work would comprise new activities that had not yet been undertaken. The Sagkeeng representative also noted that, during the licence period, Sagkeeng had conducted a psychosocial impacts assessment of its community, with support from CNSC and CNL. The Sagkeeng representative noted that the study revealed that the historical siting of the Whiteshell Laboratories and the ongoing presence of WR-1 in Sagkeeng's territory was a cause of concern regarding human health psychosocial impacts, cultural impacts, and impacts to rights.[88]

232. Asked to describe its engagement and consultation efforts respecting the licence renewal, CNSC staff noted that it notified Sagkeeng as early as possible, made participant funding available, and initiated dialogue regarding the licence renewal application to provide opportunities for Sagkeeng to participate and raise any issues or concerns. CNSC staff noted that it had not heard any specific concerns regarding the licence renewal. CNSC staff added that its relationship with Sagkeeng has evolved over the past several years, and that since the initiation of the *in situ* decommissioning project, CNSC staff has been committed to building a collaborative, positive relationship with Sagkeeng.[89]

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[86] CMD 24-H7.4, page 10.
[87] Hearing transcript, page 76.
[88] Hearing transcript, pages 80-82.
[89] Hearing transcript page 85-87.

233. With respect to CNL's engagement and consultation efforts, a CNL representative responded that CNL and Sagkeeng have agreements and engagement protocols. The CNL representative stated that CNL's relationship with Sagkeeng has grown into developing tangible actions to address Sagkeeng's concerns. As an example, the CNL representative highlighted the implementation of community led environmental monitoring at the site.[90]

Manitoba Métis Federation

234. In its submissions, CMD 24-H7.6 and CMD 24-H7.6A, MMF provided its views on CNL's licence renewal application. MMF noted its concerns related to CNL's performance at Whiteshell Laboratories over the past licence period, particularly with respect to CNL's safety culture and compliance with regulatory requirements in the areas of fire protection, worker safety, and security. MMF advocated for a more proactive approach to identifying and mitigating safety issues to prevent future non-compliances. MMF also advocate for the need for Indigenous-led environmental monitoring and greater collaboration with CNL. The MMF noted that Red River Métis citizens also had concerns about psychosocial impacts.

235. In its presentation, MMF requested that:

> *…the Commission provide direction to CNL, to AECL, and to the CNSC staff and process, to ensure that all processes are meaningful and representative of all Indigenous Nations impacted by the [Whiteshell Laboratories decommissioning] project*.[91]

The MMF further emphasized that:

> *The rights of all Section 35 rights holders are equal and coexist. There is no hierarchy of rights.*[92]

236. In its presentation, MMF reported that:

> *The MMF advocates for ensuring that any amendments to the nuclear research and test establishment decommissioning licence for Whiteshell align with the rights and values of the MMF, and be driven by shared end state goals*.[93]

237. The Commission enquired about the status of CNL's relationship with MMF. A CNL representative reported that CNL aspired to rebuild its relationship with MMF as the relationship had taken a step backwards in the past year. A CNL representative reported that CNL would endeavour to progressing mutual goals that were outlined in the relationship agreement between CNL and MMF. Asked for the reason for the

[90] Hearing transcript, page 88.
[91] Hearing transcript, page 150.
[92] Hearing transcript, page 150.
[93] Hearing transcript, page 160.

challenges between CNL and MMF, a MMF representative explained that MMF opted to terminate its relationship agreement based on a CNL decision to hire a particular individual to head its Indigenous Relations division, and over "the misunderstanding of who is encompassed in Indigenous rights."[94]

238. The Commission asked whether CNL planned to increase its information-sharing with local communities who had expressed concerns. A CNL representative responded that CNL adjusts its communications based on direct feedback from each individual community. The CNL representative noted that CNL was working to increase its understanding of how Whiteshell Laboratories could be impacting the MMF citizens who harvest in the region around the site.[95]

Algonquins of Pikwàkanagàn First Nation

239. In its submission, CMD 24-H7.7, AOPFN provided information on its review of CNL's licence renewal application, and expressed its opposition to the transport of radioactive waste to Chalk River Laboratories, which is in its traditional territory. AOPFN noted that the transfer of radioactive waste from the Whiteshell Laboratories to Chalk River Laboratories is part of its ongoing discussions with CNL and AECL.

Black River First Nation, with input from Hollow Water First Nation

240. In its submission, CMD 24-H7.11 and CMD 24-H7.11A, BRFN, with input from the HWFN, provided information on its review of CNL's licence renewal application, and made recommendation based on community input. BRFN, with input from the HWFN, made 6 recommendations, including on:

- clear communications in plain language
- education and employment opportunities
- discussions about land use and the end state of the Whiteshell Laboratories site
- hiring and retaining staff in CNL's indigenous engagement team
- support for independent environmental monitoring
- additional opportunities for bringing Indigenous communities together[96]

BRFN recommended that CNL be required to provide more plain language summaries of environmental monitoring results and other important scientific information of relevance. BRFN also reported that it would like to partner with CNL to undertake independent environmental monitoring like CNL has with other Nations and Indigenous organizations.

[94] Hearing transcript, page 162-164
[95] Hearing transcript, page 167-168.
[96] Hearing transcript, page 99.

241. Asked for details about its relationship with BRFN and HWFN, a CNL representative explained that CNL is working with both Nations to hear their specific concerns and interests. The CNL representative also reported that CNL will endeavour to take more guidance from the communities on plain language summaries to make the work that is done at Whiteshell Laboratories more accessible to their community members.

242. The Commission enquired about BRFN and HWFN involvement with environmental monitoring. A CNL representative reported that the first step was to explain about the regulations and the standards and that CNL has an agreement with BRFN and HWFN to enable their members to observe CNL's environmental monitoring program. CNSC staff noted that it invites Indigenous Nations and communities to have input in its IEMP, and that community members from both the Hollow Water and Black River First Nations were participated in the 2022 sampling campaign.[97]

4.4.4 Conclusions on Indigenous Consultation and Engagement

243. The Commission concludes that its responsibility to uphold the honour of the Crown and its constitutional obligations with regard to engagement and the duty to consult respecting Indigenous interests has been satisfied. The renewal of CNL's Nuclear Research and Test Establishment Decommissioning Licence for Whiteshell Laboratories does not include any new licensed activities that could cause new impacts on the environment or changes in the ongoing licensed activities at the Whiteshell Laboratories site, and therefore, will not cause any new adverse impacts to any potential or established Indigenous and/or treaty rights.[98] The Commission is satisfied that the work and licensed activities that would continue under the proposed licence have been assessed as part of an environmental assessment, and that there are no changes to the scope of this work.

244. With respect to Sagkeeng's assertion regarding the constitutionality of REGDOC-3.2.2, *Indigenous Engagement*, the Commission notes that the Crown's duty to consult applies or does not, regardless of the content of a REGDOC. The scope of the application of REGDOC-3.2.2 does not legally create any exemption from the common law duty to consult, nor does it prevent the REGDOC from being integrated as a guidance document in other categories of licences.[99]

245. The Commission acknowledges CNSC staff's efforts in this regard on behalf of the Commission, including efforts to ensure that Indigenous Nations and communities were properly informed of the licence renewal application and that participant funding was made available to assist Indigenous Nations and communities in participating in the hearing process. The Commission is satisfied with CNSC staff's efforts to engage with Indigenous Nations and communities who may have interest in the Whiteshell Laboratories. The efforts made by CNSC staff in this regard are key to the important work of the Commission toward reconciliation and relationship-building with Canada's Indigenous Nations and communities. Along with the Commission's ability to engage

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[97] Hearing transcript, page 112.
[98] *Rio Tinto Alcan v. Carrier Sekani Tribal Council,* 2010 SCC 43, at paras 45 and 49.
[99] Pursuant to paragraph 1.2 of the REGDOC-3.2.2, the document applies to regulated facilities described in the *Class I Nuclear Facilities Regulations* and the *Uranium Mines and Mills Regulations.*

with and listen to Indigenous groups directly through the hearing process, CNSC staff's efforts in this regard are very important. The Commission expects CNSC staff to continue to build meaningful long-term relationships with Indigenous Nations and communities as part of the CNSC's reconciliation efforts.

246. The Commission also recognizes CNL's commitment to continued engagement with and inclusion of Indigenous peoples in matters of mutual interest. The Commission notes that it has heard the concerns raised by Indigenous Nations and communities about land use and the future end state of the Whiteshell Laboratories site. While this is not an issue for the current licence renewal hearing, for which there are no proposed changes to the licensed activities, the Commission recognizes that this will be an issue for future licence applications with respect to the Whiteshell Laboratories site. The Commission heard CNL express that there is flexibility in the final end state, and that it would seek input as to what it could look like.[100] The Commission expects CNL to build on what it has heard in this hearing in order to further its work with Indigenous Nations and communities on future CNL undertakings, including on the future end state of the Whiteshell Laboratories site.

4.5 Other Matters of Regulatory Importance

4.5.1 Public Engagement

247. A public information and disclosure program (PIDP) is a regulatory requirement for licence applicants and licensed operators of Class I nuclear facilities. In section 3 of CMD 24-H7.1, CNL submitted that its PIDP[101] meets the requirements of REGDOC-3.2.1, *Public Information and Disclosure*[102] which sets out requirements and guidance for public information and disclosure for licensees and applicants of Class I and Class II nuclear facilities. CNL explained that it is committed to actively seeking public feedback to improve public engagement. CNL reported that it used webinars, site tours, participation in community events, meetings, presentations, and other modes of dialogue, such as newsletters, to share updates and receive feedback.

248. CNL highlighted that it shares information with the public through hosted webinars, a virtual visitor centre, media releases, the corporate website, a toll-free line, social media accounts, and involvement in community events. CNL added that it also provides presentations to varied audiences including all levels of government, local residents, community groups, service clubs, and local/national/international audiences, performs guided tours of Whiteshell Laboratories and distributes newsletters.

249. In section 5.3 of CMD 24-H7, CNSC staff confirmed that CNL continues to meet the specifications of REGDOC-3.2.1. CNSC staff noted that it would continue to oversee CNL's implementation of the PIDP to ensure that CNL meets its obligations regarding dissemination and notifying the public and Indigenous Nations and communities of its licensed activities.

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[100] Hearing transcript, page 108.
[101] CNL's PIDP is available on its website.
[102] REGDOC-3.2.1, *Public Information and Disclosure*, CNSC, May 2018.

250. Northwatch (CMD 24-H7.12) expressed concerns regarding the availability of information concerning transportation events and CNL's proposed or planned activities regarding the transport of used fuel. Intervenors, including BRFN, with input from the HWFN, also expressed an interest in receiving information in plain language.

251. The Commission concludes that CNL will continue to communicate to the public information about the health, safety and security of persons and the environment and other issues related to its Whiteshell Laboratories. The Commission comes to this conclusion on the following basis:

- CNL's PIDP meets the requirements of REGDOC-3.2.1
- CNL met its public disclosure and reporting obligations throughout the current licence period

The Commission notes the comments received from intervenors in this hearing process and encourages CNL to make further efforts to provide requested information in plain language.

4.5.2 Decommissioning Plans and Financial Guarantee

252. The NSCA and associated regulations require licensees to make adequate provision for the safe decommissioning of their facilities and long-term management of waste produced during the facilities' lifespan. In order to ensure that adequate resources are available for the safe and secure future decommissioning of the Whiteshell Laboratories, the Commission requires that an adequate financial guarantee for the realization of planned activities be implemented and maintained in a form acceptable to the Commission throughout the licence period.

253. In section 5.11.2 of CMD 24-H7.1, CNL reported that, in 2021, it submitted a revised Whiteshell Laboratories Overview Detailed Decommissioning Plan (DDP) to CNSC staff. CNL also reported that it further revised the DDP in 2023 to align with REGDOC-2.11.2. CNL added that this revision was under review by CNSC staff.

254. CNL reported that it had developed and was currently developing DDPs for separate facilities on the Whiteshell Laboratories site. CNL noted that it would write end-state reports and submit them to the CNSC as facilities are decommissioned and demolished, and lands are remediated. CNL explained that end-state reports include a summary of cleanup activities performed, including decommissioning and environmental remediation and deviations from the planning documents, references to decommissioning and remediation records, and survey results confirming that the planned end-state conditions have been met.

255. For its financial guarantee, CNL noted that AECL retains ownership of the lands, assets, and liabilities associated with CNL's licences. CNL added that these liabilities were officially recognized by the Minister of Natural Resources in a letter dated July 31, 2015, and reaffirmed in 2020.

256. In section 4.11.3 of CMD 24-H7, CNSC staff reported that in March 2022, CNL conducted a gap analysis and implementation plan for REGDOC-2.11.2 and CSA N294.0-19 *Decommissioning of facilities containing nuclear substances*.[103]

257. In section 5.2 of CMD 24-H7, CNSC staff reported that CNL's financial guarantee is adequate for the decommissioning of the Whiteshell Laboratories site. CNSC staff noted that CNSC REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*[104] states that an expressed commitment from a federal government is an acceptable form of financial guarantee.

258. The Commission concludes that CNL's DDP is acceptable and is satisfied that it was revised to align with REGDOC-2.11.2. The Commission is satisfied that CNL's financial guarantee for Whiteshell Laboratories, in the form of an expressed commitment from a federal government entity, is acceptable.

4.5.3 Cost Recovery

259. Paragraph 24(2)(c) of the NSCA requires that a licence application be accompanied by the prescribed fee, as set out by the *Canadian Nuclear Safety Commission Cost Recovery Fees Regulations*[105] (CRFR), and based on the activities to be licensed.

260. In section 5.1 of CMD 24-H7, CNSC staff reported that CNL is in good standing for CRFR requirements for Whiteshell Laboratories. CNSC staff added that CNL has paid its cost recovery fees in full. The Commission is satisfied that CNL is in good standing for CRFR requirements for Whiteshell Laboratories.

4.5.4 Nuclear Liability Insurance

261. In section 5.4 of CMD 24-H7, CNSC staff reported that CNL is required to maintain nuclear liability insurance for designated nuclear installations, in accordance with the *Nuclear Liability and Compensation Act*[106] (NLCA). CNSC staff reported that CNL continues to maintain nuclear liability insurance under the NLCA. The Commission concludes that CNL continues to satisfy the requirements for the maintenance of nuclear liability insurance under the NLCA.

4.6 Licence Period and Conditions

262. The Commission considered CNL's application to renew its licence for a period of 3 years. CNL's current licence, NRTEDL-W5-8.00/2024, is valid until December 31, 2024. CNL is not requesting any changes to its licensed activities.

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[103] N294.0-19 *Decommissioning of facilities containing nuclear substances,* CSA group, 2019.
[104] REGDOC-3.3.1, Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities, CNSC, 2021.
[105] SOR/2003-212.
[106] S.C. 2015, c. 4, s. 120.

4.6.1 Licence Length

263. CNL applied for the renewal of its licence for a 3-year period. In its application, CNL submitted that it is qualified to continue to safely carry out the licensed activities for the proposed 3-year licence period. CNL highlighted that:

- during the previous licence period, CNL has made noteworthy progress with its Indigenous and public engagement activities
- in response to the Fire Protection Program challenges, CNL took immediate corrective actions and has implemented numerous improvements to emergency management and fire protection capabilities
- at no time during the extended pauses to work was the environment or public at increased risk

In its presentation, CMD 24-H7.1A, CNL submitted that a 3-year licence renewal would allow CNL to demonstrate sustained compliance and to rebuild trust with the Commission, Indigenous Nations, communities and organizations, the public, and AECL.

264. In section 1.1 of CMD 24-H7, CNSC staff reported that it had met with CNL to discuss the upcoming licence renewal for Whiteshell Laboratories prior to CNL submitting its application. CNSC staff noted that it had informed CNL that it would not consider recommending a longer licence period due to CNL's below expectations performance in multiple SCAs. As such, CNL requested a 3-year licence renewal.

265. CNSC staff recommended the renewal of CNL's licence for a period of 3 years, until December 31, 2027. CNSC staff noted that the CNSC's regulatory approach is effective and can provide appropriate regulatory oversight for CNL for any licence period. CNSC staff noted that CNL proposed a 3-year renewal period taking into consideration:

- the timeline for completing key licensing items for planned future site activities
- rebuilding the trust of the public, Indigenous Nations and communities and the CNSC after several site safety stand-downs during the previous licence period, including the 2023 Whiteshell Laboratories safety stand-down following the discovery of non-compliances in the fire protection program
- an upcoming new Government-Owned Contractor-Operated (GoCo) contract in September 2025

266. Most intervenors supported CNL's request for a 3-year licence renewal, while CELA (CMD 24-H7.5) recommended that the licence be renewed for a period no longer than 1 year.

267. The Commission asked for more information concerning the upcoming CNL GoCo contract. An AECL representative confirmed that AECL was in a procurement process to put in place the next contract as the current contract ends in September 2025. The AECL representative noted that under the current scheme, the entity that is CNL would remain the enduring licence holder for the licensed facility.[107]

[107] Hearing transcript pages 236-238.

4.6.2 Licence Conditions

268. In Part 2 of CMD 24-H7, CNSC staff provided a proposed licence for the Commission's consideration. In the proposed licence, CNSC staff recommended the inclusion of an additional licence condition for the Management System SCA, requiring CNL to submit an annual report detailing the implementation of its integrated assessment plan for the Whiteshell Laboratories. The proposed licence condition 1.2 states:

> *The licensee shall submit to the Commission or any person authorized by the Commission, reports covering the progress of the licensee's integrated assessment plan at Whiteshell Laboratories.*

CNSC staff explained that the proposed licence condition 1.2 aims to ensure that CNL's accountability for its performance is emphasized and drives improvement with increased regulatory scrutiny from CNSC staff.

269. CNSC staff also proposed to remove licence condition 12.2 for the renewed licence. Licence condition 12.2 requires:

> *The licensee shall complete the implementation of all security arrangements as outlined in the corrective action plan: Implementation Plan: Tiered Response Force (TRF) 119-508710-PLA-010, no later than May 1, 2020.*

CNSC staff explained that this licence condition had been included in the current licence to ensure that CNL satisfactorily implemented the corrective actions from its TRF implementation plan. CNSC staff confirmed that this condition was no longer necessary.

270. In Part 2 of its CMD, CNSC staff also included its planned revised compliance verification criteria that would be applied to assess CNL's compliance with licence conditions under the renewed licence, should the Commission decide to renew the licence. Compliance verification criteria are set out in the licence conditions handbook. CNSC staff explained that its updated criteria were to clarify regulatory requirements in respect of the proposed licence conditions.

271. Northwatch (CMD 24-H7.12) recommended the introduction of regulatory hold-points with respect to several transportation related matters, including package certification, the transportation security plan, and CNL's licence to transport application.

4.6.3 Delegation of Authority

272. In section 5.5 of CMD 24-H7, CNSC staff recommended that the Commission delegate authority for licence conditions 1.2 and 3.2 ("The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.") to the following CNSC staff:

- Director, Canadian Nuclear Laboratories Regulatory Program Division

- Director General, Directorate of Nuclear Cycles and Facilities Regulation
- Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch

4.6.4 Conclusion on Licence Length and Conditions

273. The Commission concludes that a 3-year licence period is appropriate. The Commission's decision is based on the following:

- CNL has successfully characterized and mitigated hazards associated with the operation of its Whiteshell Laboratories to ensure the protection of the health and safety of persons and the environment
- CNL has an effective management system in place that meets the requirements of CSA N286-12
- CNL has effective compliance programs in place to ensure that facility operations remain in compliance with the licensing basis
- the CNSC has effective compliance verification programs in place to ensure that facility operations remain in compliance with the licensing basis
- the Commission accepts CNL's position that a 3-year licence period will allow CNL to demonstrate sustained compliance and to rebuild trust with the Commission, Indigenous Nations, communities and organizations, the public, and AECL.

274. The Commission accepts the licence conditions as recommended by CNSC staff in CMD 24-H7, including the new licence condition 1.2:

> Licence Condition 1.2: Integrated Assessment Plan Reporting Requirements
>
> *The licensee shall submit to the Commission or any person authorized by the Commission, reports covering the progress of the licensee's integrated assessment plan at Whiteshell Laboratories.*

The Commission appreciates CNSC staff's planned compliance verification criteria under licence condition 3.2. With this modification, CNL will submit the Whiteshell Laboratories Integrated Assessment Plan report annually by April 30th. The Commission emphasizes that CNL is required to submit annual reports under licence condition 1.2. The Commission looks forward to updates respecting CNSC staff's revised compliance verification criteria for the new licence, as described in Part 2 of CMD 24-H7.

275. The Commission delegates its authority for the purposes of licence conditions 1.2 and 3.2, to the above CNSC staff as recommended. The Commission notes that the delegation of authority of the identified licence conditions is for the purpose of the administration of those licence conditions. The Commission is satisfied that this approach is reasonable.

276. With respect to Northwatch's recommended introduction of regulatory hold points, the Commission notes that under section 37 of the NSCA, the Commission has designated persons whom the Commission considers qualified as CNSC designated officers. CNSC designated officers are authorized to carry out duties, including to certify and decertify prescribed equipment, and issue a licence of a class established by the Commission. The Commission notes that CNSC designated officers have been authorized to certify transport packages and issue licences to transport nuclear substances. The Commission does not consider it appropriate or necessary to utilize a regulatory hold point to deal with activities under this licence, which are properly and adequately dealt with under separate application processes. Furthermore, the activities for which Northwatch would be seeking a regulatory hold point fall outside of the scope of this licence renewal.

5.0 CONCLUSION

277. The Commission has considered CNL's licence renewal application for its Nuclear Research and Test Establishment Decommissioning Licence for the Whiteshell Laboratories. The Commission has considered the information and submissions of CNL, CNSC staff, and all participants, as set out in the material available for reference on the record.

278. Based on its consideration of the evidence on the record of this hearing, the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, renews the Nuclear Research and Test Establishment Decommissioning Licence issued to CNL for its Whiteshell Laboratories located in Pinawa, Manitoba. The renewed licence, NRTEDL-W5-8.00/2027, is valid from January 1, 2025, to December 31, 2027, unless suspended, amended, revoked or replaced.

279. The Commission expects CNL to continue to engage with Indigenous Nations and communities on the end state of the Whiteshell Laboratories site. The Commission also directs CNSC staff to continue their efforts to engage, develop and enhance CNSC relationships with Indigenous Nations and communities with respect to Whiteshell Laboratories, and report on progress in the context of the ROR or through other means.

Timothy Berube

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Date: 2024.12.11 15:00:26 -05'00'

December 11, 2024

Dr. Timothy Berube
Presiding Member

Date

Appendix A – Intervenors

Intervenors – Written submissions	**Document Number**
Canadian Nuclear Association	CMD 24-H7.2
CANDU Owners Group Inc.	CMD 24-H7.3
Sagkeeng Anicinabe First Nation	CMD 24-H7.4
Canadian Environmental Law Association	CMD 24-H7.5
Manitoba Metis Federation	CMD 24-H7.6
Algonquins of Pikwakanagan First Nation	CMD 24-H7.7
North American Young Generation in Nuclear	CMD 24-H7.8
Concerned Citizens of Renfrew County and Area	CMD 24-H7.9
Radiation Safety Institute of Canada	CMD 24-H7.10
Black River First Nation (with input from Hollow Water First Nation)	CMD 24-H7.11
Northwatch	CMD 24-H7.12