Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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ORIGINAL/ORIGINAL

CMD: 21-H102

Date signed/Signé le : 3 SEPTEMBER 2021

A Licence Renewal

Canadian Nuclear Laboratories

Application to Renew the Licence for the Port Granby Long-Term Low-Level Radioactive Waste Management Project

Hearing in writing based solely on written submissions

Scheduled for:

December 2021

Submitted by:

CNSC Staff

Un renouvellement de permis

Les Laboratoires Nucléaires Canadiens

Demande de renouvellement de permis pour le Projet de gestion à long terme des déchets radioactifs de faible activité de Port Granby

Audience fondée uniquement sur des mémoires

Prévue en :

Décembre 2021

Soumise par :

Le personnel de la CCSN

eDoc 6479395 (WORD)
eDoc 6584461 (PDF)

Summary

This Commission member document (CMD) presents information about the following matters of regulatory interest with respect to the Port Granby Long-Term Low-Level Radioactive Waste Management Project (Port Granby Project):

- CNSC staff's review, assessment and recommendation regarding the request by Canadian Nuclear Laboratories (CNL) to renew its waste nuclear substance licence WNSL-W1-2311.02/2021 for the Port Granby Project, for a 1-year period.

CNSC staff recommend the Commission take the following actions:

- Accept the application to renew CNL's waste nuclear substance licence for the Port Granby Project until December 31, 2022
- Issue the proposed licence WNSL-W1-2311.00/2022

The following items are attached:

- Proposed changes to the current licence
- Proposed licence
- Draft licence conditions handbook
- Current licence

Résumé

Le présent CMD présente de l'information sur un ensemble de questions d'ordre réglementaire concernant le Projet de gestion à long terme des déchets radioactifs de faible activité de Port Granby (Projet de Port Granby) :

- L'examen, l'évaluation et la recommandation du personnel de la CCSN concernant la demande des Laboratoires Nucléaires Canadiens (LNC) de renouveler son permis de déchets de substances nucléaires WNSL-W1-2311.02/2021 pour le projet de Port Granby, pour une période d'un an.

Le personnel de la CCSN recommande à la Commission de prendre les mesures suivantes :

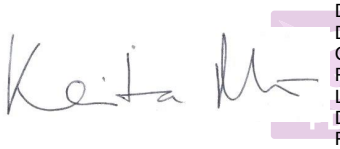
- Accepter la demande de renouvellement du permis de déchets de substances nucléaires des LNC pour le projet de Port Granby jusqu'au 31 décembre 2022
- Délivrer le permis proposé WNSL-W1-2311.00/2022

Les pièces suivantes sont jointes :

- Modifications proposées au permis actuel
- Le permis proposé
- L'ébauche du manuel des conditions du permis proposé
- Le permis actuel

Signed/signé le

3 September 2021



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EXECUTIVE SUMMARY

Canadian Nuclear Laboratories (CNL) currently has a waste nuclear substance licence (WNSL-W1-2311.02/2021), issued by the Canadian Nuclear Safety Commission (CNSC), for the Port Granby Long-Term Low-Level Radioactive Waste Management Project (Port Granby Project). This licence authorizes the possession, packaging, transportation, transfer, management and storage of nuclear substances. The current licence has a 10-year term, valid from March 29, 2012, to December 31, 2021. The Port Granby Project is part of the Port Hope Area Initiative (PHAI). The PHAI, which also includes the Port Hope Long-Term Low-Level Radioactive Waste Management Project (Port Hope Project), involves the cleanup of historic low-level radioactive waste contamination found in Port Hope (Port Hope, Ontario) and Port Granby (Clarington, Ontario), and its emplacement in new long-term waste management facilities (LTWMFs) located in each community.

The Port Granby Project is being conducted in 3 distinct phases and is currently in Phase II, which includes construction of the LTWMF, construction and operation of a waste water treatment plant (WWTP), and remediation of the Port Granby Waste Management Facility.

Pursuant to section 24 of the *Nuclear Safety and Control Act* (NSCA), the Commission issued the waste nuclear substance licence for the Port Granby Project in March 2012. In April 2021, CNL applied to the CNSC for the renewal of its waste nuclear substance licence for the Port Granby Project.

The purpose of this Commission member document (CMD) is to provide the results of CNSC staff's assessment, conclusions and recommendations with respect to CNL's application, in order to inform the Commission decision on CNL's request to renew this licence.

In its application, CNL requested a 1-year licence, with no changes to the authorized activities, terms and conditions of the existing licence and licence conditions handbook (LCH). The only change is the proposed licence expiry date of December 31, 2022. During the period covered by the proposed 1-year licence, final landscaping and demobilization of the equipment and infrastructure used for the remediation activities would be completed prior to the project's transition to Phase III. Phase III includes long-term monitoring and maintenance of the LTWMF and WWTP.

The Port Hope Project also has a waste nuclear substance licence issued by the CNSC. CNL has indicated its intent to propose, for a future Commission hearing, that the licences for the Port Granby Project and Port Hope Project be consolidated into a single waste nuclear substance licence. The expiry dates of the licences for both projects would align should the short-term renewal be granted.

This CMD has 2 parts. Part One presents CNSC staff's assessment, conclusions and recommendations with respect to CNL's licence application. Because CNL has not requested changes to the authorized activities, terms and conditions of the existing licence or LCH, the current accepted licensing basis would continue to apply without change as part of the proposed 1-year licence renewal. CNSC staff consider, based on their review of the application, that the information presented in it is consistent with the licensing basis requirements for the current licence period and continues to meet regulatory requirements for all applicable safety and control areas (SCAs). CNSC staff also reviewed the licensee's performance over the same period – the Port Granby Project has consistently received an annual rating of "satisfactory" for all applicable SCAs. This indicates its overall good safety performance. Through regulatory oversight activities, such as desktop reviews and inspections, CNSC staff have also confirmed that CNL has conducted the authorized activities within the licensing basis requirements and has maintained its licensing basis documentation to ensure its programs remain up to date and reflect current regulatory requirements. Overall, CNSC staff's regulatory oversight activities at the Port Granby Project over the current licence period have consistently determined that:

- the radiation protection program for the Port Granby Project adequately controls radiation exposures, keeping doses as low as reasonably achievable
- the environmental protection program for the Port Granby Project is effective in protecting people and the environment
- the conventional health and safety program for the Port Granby Project continues to protect workers
- the programs in support of the remaining SCAs for the Port Granby Project, which are also required for ensuring the protection of the health and safety of workers, the public and the environment, continue to be effectively implemented

CNSC staff's review shows that CNL has made, and it is anticipated that it will continue to make, adequate provision for the protection of the environment and the health and safety of persons, and that it has met, and it is anticipated that it will continue to meet, the requirements set out under the NSCA and its regulations. Based on CNSC staff's review and assessment of CNL's submitted information and performance during the current licensing term, CNSC staff recommend that the Commission issue the proposed licence, WNSL-W1-2311.00/2022, which would remain valid until December 31, 2022.

Part Two of this CMD provides licensing-related documentation pertaining to this hearing in writing, including the proposed licence and the current licence. A draft LCH is also included for information only.

Referenced documents in this CMD are available to the public upon request, subject to confidentiality and proprietary considerations.

PART ONE

This Commission Member Document (CMD) is presented in two parts.

Part One includes:

1. An overview of the matter being presented;
2. Overall conclusions and overall recommendations;
3. General discussion pertaining to the safety and control areas (SCAs) that are relevant to this submission;
4. Discussion about other matters of regulatory interest; and
5. Addenda material that complements items 1 through 4.

Part Two provides all available information pertaining directly to the current and proposed licence.

1. OVERVIEW

1.1 Background

The Port Granby Project and its Location

Canadian Nuclear Laboratories (CNL) is the licensee responsible for the implementation of the Port Hope Area Initiative (PHAI), which consists of the Port Hope Long-Term Low-Level Radioactive Waste Management Project (Port Hope Project) and Port Granby Long-Term Low-Level Radioactive Waste Management Project (Port Granby Project). These projects involve the cleanup of the historic low-level radioactive waste (LLRW) contamination found in Port Hope (Port Hope, Ontario) and Port Granby (Clarington, Ontario), and its emplacement in new long-term waste management facilities (LTWMFs), one located in each community. The scope of the PHAI is defined by a legal agreement [1] between the municipalities of Port Hope and Clarington and the Government of Canada, originally signed in 2001. The legacy wastes in Port Hope and Port Granby are a federal liability as they ultimately derive from the operations of a former Crown Corporation, Eldorado Nuclear Limited (ENL). ENL became the privately-held Cameco Corporation (Cameco) in 1988 and wastes produced after that time became the responsibility of Cameco.

CNL's waste nuclear substance licence for the Port Granby Project expires December 31, 2021. The Port Granby Project involves the development of a new LTWMF, construction and operation of a waste water treatment plant (WWTP), and relocation of the historic LLRW from the existing Port Granby Waste Management Facility (WMF). The project is being conducted in 3 distinct phases:

- Phase I – transition phase: possession and management of the nuclear substances at the Port Granby WMF previously licensed to Cameco (2011-2012)
- Phase II – implementation phase: construction of the LTWMF, construction and operation of a WWTP, and remediation of the Port Granby WMF (2012-2022)
- Phase III – post-closure phase: long-term monitoring and maintenance of the LTWMF and WWTP (2022-foreseeable future).

Currently, Phase II of the Port Granby Project is nearing completion. The new LTWMF, located approximately 700 metres from the existing Port Granby WMF, will provide local, environmentally safe and socially acceptable long-term management of the LLRW. It is located within the Municipality of Clarington, Region of Durham in the Province of Ontario. The Municipality of Clarington is located on the north shore of Lake Ontario, approximately 80 kilometres east of Toronto. Figure 1 shows the aerial view of the Port Granby Project site.

Figure 1 – Aerial view of the Port Granby Project Site

Source: CNL, June 2021

CNL's Application for Licence Renewal

In April 2021, CNL submitted an application for the renewal of its waste nuclear substance licence (WNSL-W1-2311.02/2021) for the Port Granby Project for a 1-year period without any changes to the authorized activities, terms and conditions of the existing licence or associated licence conditions handbook (LCH) [2]. Key features of CNL's application are described in section 1.2 of this Commission member document (CMD).

During the period of the proposed 1-year licence, final landscaping and demobilization of the equipment and infrastructure used for the remediation activities would be completed prior to transitioning to Phase III of the project.

Licensing History

From 1955 to 1988, LLRW consisting of process residues, scrap equipment and industrial trash and soils were placed at the Port Granby WMF. The care and maintenance of the WMF was conducted by Cameco under a waste nuclear substance licence (WNSL-W1-2338.0/ind) from 1988 to March 2012.

In December 2004, Atomic Energy of Canada Limited (AECL) submitted an application for a waste nuclear substance licence for the Port Granby Project, with the project involving the development of a new LTWMF, construction of a WWTP, and relocation of the historic LLRW from the existing Port Granby WMF [3].

An environmental assessment – initiated in 2001 – was conducted and accepted by the Commission in August 2009 [4]. Further details on the environmental assessment are provided in section 2.1 of this CMD.

Detailed designs for the remediation of the Port Granby WMF and construction of the new LTWMF were prepared in 2010 and 2011. AECL also completed program documentation required to support the Port Granby Project. In June 2011, AECL requested the CNSC schedule a hearing to consider its application for a 10-year waste nuclear substance licence for the Port Granby Project.

Pursuant to Section 24 of the *Nuclear Safety and Control Act* (NSCA), the Commission issued a 10-year waste nuclear substance licence to AECL, valid from March 29, 2012 to December 31, 2021, following a September 27, 2011 public hearing [5] [6].

In October 2014, the Commission approved the transfer of the licence from AECL to CNL under the Government-owned, Contractor-operated model [7].

In 2019, a licence amendment was approved by the Commission to reflect the addition of liquid effluent release limits for the Port Granby Project WWTP and to reflect the CNSC's standardized licence conditions and modernized licence format. The Commission accepted the removal of Appendices A through C from the licence, which included a description of the Port Granby Long-Term Radioactive Waste Management Facility, release limits and cleanup criteria, as well as the inclusion of the release limits for liquid effluent and the cleanup criteria for remediation (inorganic contaminants of potential concern in surface soils) in the LCH [8].

Current Status of the Port Granby Project

In 2020, CNL completed the transfer of historic LLRW from the Port Granby WMF into the engineered above ground LTWMF. In total 1,315,061 metric tonnes of LLRW was safely transported to the LTWMF since the remediation started in late 2016. Progress continues on capping the LTWMF, final grading, erosion control measures, and the construction of the groundwater collection system at the Port Granby WMF. These activities are expected to be finalized in the fall of 2021. CNL's current project plan estimates that it will progress to Phase III of its project plan in the spring of 2022. Phase III entails the long-term maintenance and monitoring of the site and operation of the WWTP. By removing the source of contamination from the site, groundwater improvements are expected over time which will reduce the environmental impact on Lake Ontario. The Port Granby Project site will remain in a maintenance and monitoring period for the foreseeable future. CNSC staff will continue its regulatory oversight of the Port Granby Project for the foreseeable future to ensure the protection of the public and environment.

1.2 Highlights

In April 2021, CNL submitted an application for the renewal of its waste nuclear substance licence for the Port Granby Project for a 1-year period [2]. No changes to the authorized activities, terms and conditions of the existing licence or LCH are being requested, except to the proposed expiry date of the licence.

If the short-term renewal is granted, the licence expiry date for the Port Granby Project will be aligned with the expiry date of the waste nuclear substance licence for the Port Hope Project of December 31, 2022 [9]. CNL has indicated its intent to propose that the licences for the Port Granby Project and Port Hope Project be consolidated into a single waste nuclear substance licence for both projects in the future. The consolidation of the licences is intended to reduce administrative burden created with different licences for similar projects under the PHAI portfolio. An in-depth assessment of all relevant SCAs will be presented to the Commission in a future CNSC staff CMD for the subsequent longer term licence renewal and licence consolidation. A full public hearing in 2022, for a longer term licence renewal, will align with the transition to Phase III of the Port Granby Project, as well as allow for the potential consolidation of licences, should the short-term licence be granted.

CNSC staff developed the proposed licence from the existing licence issued in 2019. All authorized activities, terms and conditions of the licence remain unchanged with the exception of the licence number and the proposed expiry date of December 31, 2022. CNSC staff have also developed the proposed Port Granby Project LCH which includes references of CNSC regulatory documents (REGDOCs) and Canadian Standards Association (CSA) documents which were published after the last update to the LCH. These documents include both guidance and compliance verification criteria. CNSC staff advised CNL of the recommended revisions to the LCH; CNL has no issues with the recommended revisions and concurs with the proposed changes.

1.3 Overall Conclusions

CNSC staff have reviewed CNL's licence renewal application and supporting documents and determined that the application complies with the regulatory requirements. CNSC staff concluded that CNL's performance during the licensing term was satisfactory and met regulatory requirements.

1.4 Overall Recommendations

CNSC staff recommend the following:

1. the Commission issue the proposed licence, WNSL-W1-2311.00/2022, that remains valid until December 31, 2022.

2. MATTERS FOR CONSIDERATION

2.1 Environmental Review

In 2001, an environmental assessment was initiated as per the legislation in place at the time, the *Canadian Environmental Assessment Act* (1992). The Commission concluded in August 2009 that the Port Granby Project would not likely cause significant adverse environmental effects, taking into account mitigation measures [4].

CNL is not proposing any changes to the authorized activities, terms and conditions of the existing licence, with the exception of the proposed expiry date. CNSC staff conducted an environmental review determination for this licence application and determined that the *Impact Assessment Act* (IAA) does not apply because the proposed changes are not captured in the associated *Physical Activities Regulations*. Further, a federal lands review under the IAA is not required as the continuation of authorized activities meets the exemption criteria specified under Part 1 of Schedule 1 of the *Designated Classes of Projects Order*.

While a detailed environmental protection review under the NSCA for this 1-year licence renewal is not required because the proposed change does not have any impacts on the environment, CNSC staff's evaluation of CNL's performance related to environmental protection is provided in section 3.2.2.

2.2 Relevant Safety and Control Areas

The functional areas of any licensed facility or activity consist of a standard set of safety and control areas (SCAs). CNSC staff use the SCA framework to evaluate the performance of each licensee. See addendum B for more information on SCAs.

As the CNSC-issued Port Granby Project licence is a waste nuclear substance licence, the following SCAs are applicable:

- Management System
- Human Performance Management
- Operating Performance
- Physical Design
- Radiation Protection
- Conventional Health and Safety
- Environmental Protection
- Emergency Management and Fire Protection
- Security
- Packaging and Transport

CNSC staff's general assessment of the applicable SCAs is discussed in section 3 of this CMD.

2.3 Other Matters of Regulatory Interest

The following table identifies other matters that are relevant to this CMD.

OTHER MATTERS OF REGULATORY INTEREST	
Area	**Relevant to this CMD?**
Indigenous Consultation	Yes
Other Consultation	Yes
Cost Recovery	Yes
Financial Guarantees	Yes
Improvement Plans and Significant Future Activities	No
Licensee's Public Information Program	Yes
Nuclear Liability Insurance	No

The relevant "other matters" of regulatory interest are discussed in section 4 of this CMD.

2.4 Regulatory and Technical Basis

The Port Granby Project licence is a waste nuclear substance licence. Authority for licensing decisions for this type of licence is generally delegated by the Commission to a Designated Officer. However, in the case of the 2 PHAI projects, the Commission has retained the decision-making authority. For this type of facility, the key requirements come directly from the NSCA, and its associated regulations as well as applicable CNSC REGDOCS and CSA Group standards.

3. GENERAL ASSESSMENT OF SCAS

CNL has requested a renewal for a 1-year period for its waste nuclear substance licence for the Port Granby Project. No changes to the authorized activities, terms and conditions of the existing licence or LCH are being requested, except for the expiry date of the licence. CNL submitted an application outlining this request [2].

For the short-term renewal, CNSC staff assessed the qualification of the licensee over the current licence period and made a determination whether CNL has conducted the authorized activities within the licensing basis requirements, and maintained its licensing basis documentation to ensure its programs remain up to date and reflect current regulatory requirements. CNSC staff also evaluated whether the licensing basis for the current licence remains applicable to support a 1-year renewal. CNSC staff assessed the application submitted by CNL and reviewed CNL's past performance in all applicable SCAs. Staff's assessment of CNL's past performance for the Port Granby Project is based on regulatory oversight activities including onsite and remote inspections, reviews of reports submitted by CNL, reviews of events and incidents, and general communication and exchanges of information with CNL. CNSC staff report annually on CNL's performance and licensing activities in regulatory oversight reports (RORs). RORs are presented at Commission meetings and provide an opportunity for Indigenous groups and the public to provide input on CNL's performance and licensing activities. A general overview of staff's assessment of the application with respect to all applicable SCAs is provided in this section of the CMD. Further focus is provided with respect to some SCAs in section 3.2 where relevant information, for the purposes of this application, is detailed in areas deemed of interest to the Commission and the public. If the short-term renewal is granted, an in-depth assessment of all applicable SCAs will be presented in a future CNSC staff CMD for the subsequent longer term licence renewal.

3.1 Assessment of Application

CNL's application provides a clause-by-clause statement for relevant excerpts from the NSCA and relevant regulations, and describes how CNL continues to meet these requirements as per the compliance verification criteria prescribed by the CNSC in the LCH. CNL provided reference in its application to the most recent revision of programs implemented to meet regulatory requirements. Because no changes to the current licence or LCH are being requested by CNL, the current licensing basis will remain appropriate to support the 1-year licence renewal.

CNSC staff reviewed the completeness of the application submitted by CNL for the Port Granby Project against the requirements in the NSCA and relevant regulations and are satisfied that all the relevant information, in order to make an informed recommendation, was included in the application. CNSC staff also reviewed the application and referenced supporting program documentation for the 1-year renewal period to ensure consistency with the current licensing basis and are of the opinion that CNL continues to meet regulatory requirements. CNSC staff conducted this review to ensure all applicable SCAs were adequately covered and that the information provided by CNL meets regulatory requirements to support the 1-year licence, while remaining within the current licensing basis.

Based on the review of the application, CNSC staff are of the view that the information presented in the application is consistent with the licensing basis requirements over the current licence period, and continues to meet regulatory requirements for all applicable SCAs. Any further updates to the programs will be assessed during the longer term licence renewal for the Port Granby Project.

3.2 Performance

3.2.1 Overall Performance Trends

During the current licence period (2012-2021), all SCAs applicable to the Port Granby Project have received a satisfactory rating each year from CNSC staff, which is presented to the Commission in annual RORs. The most recent ratings were presented to the Commission in CMD 20-M22 (Canadian Nuclear Laboratories: Regulatory Oversight Report for Canadian Nuclear Laboratories Sites: 2019) [10]; where staff rated all SCAs as "satisfactory" for the Port Granby Project in 2019. Staff continue to oversee the Port Granby Project, and will report on any changes to trends in the "2020 Canadian Nuclear Laboratories: Regulatory Oversight Report for Canadian Nuclear Laboratories Sites" and subsequent annual RORs. The 2020 ROR for CNL licensed sites will be presented in CMD 21-M32 at a Commission meeting scheduled for November 2021.

3.2.2 Overall Safety Performance

Activities at the Port Granby Project site have been continuously carried out in a safe manner throughout the current licence period (2012-2021). Based on performance trends, as discussed in section 3.2.1 of this CMD, the Port Granby Project has consistently received an annual rating of satisfactory for all applicable SCAs, which is indicative of its overall good safety performance throughout the current licence period.

In order to assess the safety performance of licensees, the CNSC conducts regulatory oversight activities consisting of onsite and remote inspections, technical assessments, reviews of reports submitted by licensees, reviews of events and incidents, and general communication and exchanges of information with licensees. The CNSC uses a risk-informed approach when conducting these activities. Through these activities, CNSC staff confirmed that over the current licence period, CNL has consistently conducted the authorized activities within the licensing basis requirements and maintained its licensing basis documentation to ensure its programs remain up to date and reflect current regulatory requirements.

Throughout the current licence period, CNSC staff conducted over 30 inspections at the Port Granby Project to verify compliance with the NSCA and its regulations, its operating licence and the programs used to meet regulatory requirements. The inspections were carried out with a focus on SCAs in accordance with the baseline compliance plan for the Port Granby Project, which identifies a risk-informed frequency for inspection of each SCA.

Recent inspections performed since 2019 have focused on the environmental protection, physical design, radiation protection, public information program, and management system SCAs. All locations at the Port Granby Project site are inspected, which includes the LTWMF, Port Granby WMF, and the Port Granby WWTP.

CNSC staff have conducted inspections since the construction of the Port Granby LTWMF and WWTP to ensure the design requirements in the licence were met. CNSC staff also performed inspections during the remediation of the Port Granby WMF to ensure the soil cleanup criteria in the licence were met and the activities were performed safely.

All findings from inspections conducted over the current licence period were of low safety significance and did not affect the health and safety of workers, the public, the environment, or the safe operations at the Port Granby Project site. CNSC staff are satisfied with CNL’s corrective actions for all enforcement actions. Staff will continue regulatory oversight through onsite and remote inspections, and offsite compliance activities.

A list of inspections conducted during the current licence period can be found in addendum C. Upcoming inspections in the 2021 to 2022 fiscal year at the Port Granby Project will include a focus on the emergency management and fire protection SCA, as well as the construction of the LTWMF cap and erosion control measures at the former WMF.

CNL is required to report on action level exceedances and events. The *General Nuclear Safety and Control Regulations* provide requirements for reportable events. Events which CNSC staff assess as meeting specific risk criteria are subject to event initial reports (EIRs) from CNSC staff to the Commission.

For key radiological and emission parameters, CNL has established action levels accepted by the CNSC that are well below regulatory limits. Action levels, if reached, may indicate a loss of control of a specific parameter. If an action level is exceeded, CNL must establish the cause and, if applicable, take steps to restore the effectiveness of relevant programs. CNSC staff are satisfied with CNL's corrective actions for all reported events at the Port Granby Project site during the current licence period and all events are considered closed.

Since the issuance of the licence for the Port Granby Project, there have only been 2 events that were subject to EIRs, one of which falls under the environmental protection SCA and the other under the conventional health and safety SCA, which are discussed later in this section of the CMD.

Overall, CNSC staff's regulatory oversight activities at the Port Granby Project, over the current licence period, have consistently determined that:

- the radiation protection program for the Port Granby Project adequately controls radiation exposures, keeping doses as low as reasonably achievable (ALARA)
- the environmental protection program for the Port Granby Project is effective in protecting people and the environment
- the conventional health and safety program for the Port Granby Project continues to protect workers
- the programs in support of the remaining SCAs for the Port Granby Project, which are also required for ensuring the protection of the health and safety of workers, the public and the environment, continue to be effectively implemented.

Radiation Protection

The radiation protection SCA covers the implementation of a radiation protection program in accordance with the *Radiation Protection Regulations* (RPRs). CNL is required to implement and maintain a radiation protection program to ensure that contamination levels and radiation doses received by individuals are monitored, controlled and maintained ALARA.

During the current licence period, CNSC staff consistently rated the radiation protection SCA at the Port Granby Project as satisfactory, with CNL implementing and maintaining a radiation protection program as required by the RPRs. No worker's radiation exposure at the Port Granby Project exceeded the CNSC's regulatory limits. Dose data is provided in CNL's annual compliance monitoring reports.

Workers who have a reasonable probability of receiving an occupational dose greater than 1 mSv in a 1-year dosimetry period are considered Nuclear Energy Workers (NEWs) at the Port Granby Project. Table 1 provides the average and maximum effective doses for NEWs at the Port Granby Project. The maximum effective dose received by a NEW during the current licence period was 3.13 mSv, received in 2018, which is approximately 6% of the regulatory effective dose limit of 50 mSv in a 1-year dosimetry period.

Table 1: Average and maximum effective doses for NEWs during the current licence period

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Average effective dose (mSv)	0.02	0.01	0.02	0.01	0.01	0.03	0.06	0.05	0.03
Maximum effective dose (mSv)	0.18	0.20	0.20	0.16	0.30	0.39	3.13	0.79	0.27
# of NEWs monitored	60	118	91	118	309	430	489	560	729

Skin doses at the Port Granby Project have also been well below the CNSC regulatory equivalent dose limit for a NEW of 500 mSv/year as shown in Table 2.

Table 2: Average and maximum equivalent doses to the skin for NEWs during the current licence period

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Average skin dose (mSv)	0.02	0.01	0.01	0.01	0.01	0.04	0.05	0.05	0.03
Maximum skin dose (mSv)	0.18	0.20	0.16	0.16	0.30	0.34	2.44	0.79	0.27

CNSC staff are satisfied that effective and equivalent doses to NEWs at the Port Granby Project are being controlled below the CNSC's regulatory limits.

Most recently, CNSC staff conducted a focused inspection on the radiation protection SCA at the Port Granby Project site in October 2019. The scope of the inspection consisted of verifying the implementation of CNL's radiation protection program at the Port Granby Project. CNL's compliance with the RPRs and CNSC licence requirements were found to be acceptable. CNSC staff are, and continue to be, satisfied with CNL's execution of the radiation protection program at the Port Granby Project.

Additionally, as part of its radiation protection program, CNL has established action levels for radiological exposures well below regulatory limits. Action levels are a specific dose of radiation that, if reached, may indicate a loss of control of part of a licensee's radiation protection program. If an action level is exceeded, CNL must establish the cause and, if applicable, take steps to restore the effectiveness of relevant programs. Action level exceedances are reportable to the CNSC under the RPRs.

In March 2018, a radiation protection action level was reached at the Port Granby Project. A NEW received a committed effective dose from exposure to radon of 0.70 mSv and whole body effective dose of 0.46 mSv, for a total of 1.16 mSv effective dose over a 4-week period, exceeding the effective dose action level that was in place at that time of 1 mSv over a 4-week period. The worker was present in waste excavation areas, where radon gas above natural background levels are likely. Through an investigation, CNL concluded that this action level exceedance did not represent a loss of control of its radiation protection program, but rather was due to the nature of the work activities being performed by the worker. CNSC staff were satisfied with CNL's reporting and investigation of the action level exceedance.

Following the action level exceedance in 2018, CNL implemented revised radiation protection action levels in February 2019 that were more reflective of the work activities being conducted at the PHAI sites. More recently, CNL reviewed and revised the radiation protection action levels for the PHAI in December 2020. Effective January 1, 2021, the current set of radiation protection action levels were implemented by CNL. These revised action levels continue to be appropriate for the work activities being conducted at the PHAI sites. Action levels for radiation protection are referenced under licence condition 5.1 of the LCH.

CNL also reviewed and revised its radiation protection program for the PHAI to account for the amendments to the RPRs, which came into force on November 25, 2020. CNSC staff's review found the updated radiation protection program to be acceptable.

CNSC staff will continue to monitor performance of the radiation protection SCA through regulatory oversight activities including inspections and desktop reviews of CNL's compliance reporting, and revisions to relevant program documentation for the Port Granby Project.

Environmental Protection

Evaluation of performance related to the protection of the environment and the public are linked to the environmental protection SCA. This SCA covers programs that identify, control and monitor all releases of radioactive and hazardous substances, and effects on the environment from facilities or as a result of licensed activities. During the current licence period, CNSC staff consistently rated the environmental protection SCA at the Port Granby Project as satisfactory, with CNL implementing effluent and environmental monitoring programs that meet regulatory requirements to ensure the protection of the public and the environment.

CNL began using its new WWTP in 2016 to treat contaminated water at the Port Granby Project. During the Port Granby Project licence hearing in September 27, 2011, the Commission acknowledged CNSC staff's position that release limits of the new WWTP should be set after the plant had accumulated 12 months of operational data [5]. In addition to establishing release limits for the Port Granby WWTP, the Commission required the licensee to set appropriate action levels for ongoing monitoring of the performance of the water treatment plant. The Port Granby WWTP was commissioned in October 2016, and consequently, the 12 months of operational experience was acquired in October 2017. Action levels were established for the complete suite of contaminants of concern on August 18, 2017 [11]. For the duration of time the Port Granby WWTP was commissioned and the date the action levels were established, CNL reported effluent results to CNSC staff on a weekly frequency. Since the establishment of the action levels, CNL reported on liquid effluent results to CNSC staff on a quarterly basis and in its annual compliance monitoring reports. CNSC staff's review of the effluent results confirmed that the releases from the Port Granby WWTP were below design objectives, and thus did not have any adverse effects on the environment or public health.

After achieving sufficient operating experience with the Port Granby WWTP, CNL applied to amend its licence for Commission acceptance of the proposed liquid effluent release limits [12]. CNL established weekly and monthly mean release limits for radioactive and hazardous substances for treated water at the Port Granby Project. Through this amendment, the Commission accepted the proposed liquid effluent limits for the Port Granby Project in 2019 [8]. There have been no exceedances of release limits since the Commission's acceptance of the proposed amended effluent limits.

CNSC staff inspected the Port Granby WWTP in 2019 and 2020, focusing on the SCAs of radiation protection, environmental protection, conventional health and safety and management system. CNSC staff sampled the WWTP effluent during both inspections and found it was meeting the effluent limits that were accepted by the Commission in 2019. CNSC staff are satisfied with the performance of the WWTP and CNL's effluent and environmental monitoring programs.

Additionally, CNL is required to demonstrate that the health and safety of the public are protected from exposures to hazardous substances released from its licensed operations. The effluent and environmental monitoring programs currently conducted by CNL are used to verify that releases of hazardous substances do not result in environmental concentrations that may affect public health.

Monitoring results over the current licence period indicate an estimated dose to the public well below the regulatory limit of 1 mSv/year. Based on CNSC staff's review, staff have concluded that the public continues to be protected from releases of radioactive and hazardous substances arising from the Port Granby Project site.

Independent Environmental Monitoring Program

In addition to CNL carrying out required monitoring of its operations, the CNSC carries out its Independent Environmental Monitoring Program (IEMP) to support compliance activities and confirm that the public and environment at, and around, the Port Granby Project site remains safe. The IEMP is a regulatory tool that complements the CNSC's ongoing compliance verification program, and involves CNSC staff taking samples from publicly accessible areas around nuclear sites, and measuring and analyzing the level of relevant contaminants in those samples.

In 2019, CNSC staff conducted independent environmental monitoring around the Port Granby Project site and confirmed that the public and the environment in the vicinity of the Port Granby WMF sites are protected and that there are no expected health impacts from CNL's operations.

Previously, CNSC staff conducted independent environmental monitoring around the Port Granby Project site in 2013, 2014 and 2017. The results for radioactive substances from these samples were below federal and provincial environmental guidelines and standards. IEMP results for the Port Granby Project can be found on CNSC's website.

Reportable Events

The first event in the current licence period that was subject to an EIR, falling under the environmental protection SCA, occurred on June 23, 2017, when there was an unplanned discharge of untreated water from the West Gorge Reservoir (WGR) at the Port Granby WMF. An EIR was presented to the Commission in August 2017 in CMD 17-M38 [13]. Upon observing the overflow, CNL ceased pumping water into the WGR and the overflow stopped shortly afterwards. CNL estimated the duration of the release to have been 30 to 45 minutes, and the volume of the release to be no more than 7 m^3. CNL concluded that the overflow was due to a restriction in the pipe running from the WGR to the adjacent sump where the WGR pumps draw water. After the overflow, CNL staff performed radiation surveys and took soil samples that indicated that contaminant levels in the path of the overflow were less than the average initial contaminant concentrations for the Port Granby WMF site, as identified during the 2001 to 2009 environmental assessment process.

There was no impact to the environment as a result of this event. CNL carried out various corrective actions in response to this incident, most significantly moving the sump from adjacent to the WGR, to directly in the WGR.

CNSC staff issued a Request Pursuant to Subsection 12(2) of the *General Nuclear Safety and Control Regulations* as a result of this event. CNL was instructed to conduct an analysis of the mitigation, consider compensatory measures to address water management, and provide a report that demonstrated that the proposed alternatives are within the safety case approved by the Commission when it authorized licence WNSL-W1-2311.01/2021 for the Port Granby Project site. CNSC staff also performed an inspection in February 2018 at the Port Granby Project site and verified that the corrective measures were in place. The main corrective action for the site was the establishment of a Water Management and Contingency Operating Procedure. CNSC staff are satisfied that CNL responded appropriately to this incident and implemented applicable corrective actions in response to this event. CNSC staff have continued to monitor and assess CNL's water management measures at the Port Granby Project site.

Overall, CNSC staff are satisfied that CNL's implementation of its environmental protection program during the current licence period is acceptable.

Conventional Health and Safety

The conventional health and safety SCA covers the implementation of a program to manage workplace safety hazards and protect workers. CNL licensed sites must develop, implement and maintain effective safety programs to promote safe and healthy workplaces and minimize incidences of occupational injuries and illness. During the current licence period, CNSC staff consistently rated the conventional health and safety SCA at the Port Granby Project as satisfactory.

In addition to the NSCA and its associated regulations, all activities with the Port Granby Project must comply with Part II of the *Canada Labour Code*, the *Canada Occupational Health and Safety Regulations* and other applicable federal and provincial health and safety-related acts and regulations.

CNSC inspectors routinely verify CNL's conventional health and safety program at the Port Granby Project by observing workers' and contractors' compliance with requirements related to workplace safety, proper use of personal protective equipment, use of signage and barriers along with the general housekeeping of the site.

Since spring 2020, CNL has maintained steady operations at the Port Granby Project site in accordance with the COVID-19 pandemic restrictions and respective health regulations and guidelines. Notably, CNL has made considerable efforts to ensure the health and safety of its workers (including contractors) during the COVID-19 pandemic, and has designed the PHAI Restart Plan to manage the safe return to field activities and to support the PHAI projects. The PHAI Restart Plan follows a structured and methodical 4-phased approach, and requires additional measures for public and worker safety, specifically related to the COVID-19 pandemic.

In 2021, CNL's primary focus continues to be the safe response to the COVID-19 pandemic. CNL has implemented many measures to support the safety of its workers, including but not limited to, managing reported, potential, or suspected cases of exposure to COVID-19 at the workplace and ensuring ongoing communication between contractors and CNL personnel on Ontario *Occupational Health and Safety Act* updates. Additionally, CNL has conducted programmatic and field level audits on contractor COVID-19 pandemic programs, introduced remote building and project orientation to minimize the number of personnel on the site, and implemented onsite COVID-19 voluntary nasal swab testing to help prevent asymptomatic transmission at the Port Hope site.

One of the key indicators of performance with respect to conventional health and safety are Reported Lost-Time Injuries (RLTIs). An RLTI is defined as a workplace injury that results in the worker being unable to return to work for a period of time. CNSC staff must also consider the severity of these injuries and the frequency. CNL staff at the Port Granby Project have not recorded a lost-time injury over the current licence period.

Separately, CNL also records the number of lost-time incidents reported by its contractors. However, contractor employee hours worked is considered sensitive information and the contractors do not divulge the specific number of hours worked to CNL as their client. Therefore, CNL does not provide frequency or severity rates for contractors since these calculations require hours worked. Most recently, CNL reported one contractor lost-time incident in 2019 that resulted in the event discussed below.

Reportable Events

The second event in the current licence period subject to an EIR, falling under the conventional health and safety SCA, occurred on January 9, 2019 when a contractor was injured by becoming pinned by the unloading mechanism of a roll-off bin truck. This was presented to the Commission in CMD 19-M9 [14]. Immediately following the event, CNL suspended the use of trucks with roll-off bins at all of its Canadian operations while it conducted an investigation and developed corrective actions to prevent recurrence. Corrective actions included bulletins regarding safety around remotely operated mechanisms at all sites, and training for persons operating such mechanisms. CNSC staff subsequently verified implementation of these corrective actions during an inspection. CNSC staff are satisfied that CNL responded appropriately to this incident and implemented appropriate corrective actions in response to this event.

Overall, CNSC staff are satisfied that CNL's implementation of its conventional health and safety program during the current licence period is acceptable.

4. OTHER MATTERS OF REGULATORY INTEREST

4.1 Indigenous Consultation

The common law duty to consult with Indigenous peoples applies when the Crown contemplates actions that may adversely impact potential or established Indigenous and/or treaty rights. The CNSC ensures that all of its licensing decisions under the NSCA uphold the honour of the Crown and consider Indigenous peoples' potential or established Indigenous and/or treaty rights pursuant to section 35 of the *Constitution Act, 1982*.

4.1.1 Discussion

CNSC staff have identified the First Nation and Métis groups who may have an interest in the renewal of the Port Granby Project licence. These groups include:

- Métis Nation of Ontario
- Alderville First Nation
- Beausoleil First Nation
- Chippewas of Georgina Island
- Chippewas of Rama First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Mississaugas of Scugog Island First
- Mohawks of Bay of Quinte

These Indigenous groups were identified due to proximity of their communities, treaty areas and/or traditional territories to the Port Granby Project site, or due to previously expressed interest in being kept informed of CNSC licensed activities occurring in or proximal to their territories.

CNSC Staff Engagement Activities

In April 2021, CNSC staff sent letters of notification to the First Nation and Métis groups who may have an interest in the Port Granby Project licence renewal application. These letters provided information regarding the licence application and details on how to participate in the Commission's hearing process. The letters also indicated the availability of participant funding to facilitate participation in the regulatory process.

CNSC staff meet on a monthly basis with Curve Lake First Nation as part of the recently signed Terms of Reference and provide updates on areas of interest or concern regarding CNSC-regulated facilities and activities, such as the Port Granby Project site. On June 24, 2021, CNSC staff delivered a presentation to Curve Lake First Nation to provide further information on the Port Granby Project licence renewal application. Curve Lake First Nation did not raise any concerns with respect to the licence renewal application.

The Indigenous groups identified above have been encouraged to participate in the regulatory review process and in the hearing in writing to advise the Commission directly of any concerns they may have in relation to this licence renewal application. To encourage and maintain productive and respectful relationships, CNSC staff remain open to meeting with Indigenous groups to discuss this licence renewal application.

To date, the identified Indigenous groups have not expressed any specific concerns with regards to the licence renewal application. Should any concerns be identified, CNSC staff will provide additional information with regards to ongoing engagement activities, including any concerns expressed by Indigenous groups, to the Commission in a supplemental CMD, if required.

Licensee Engagement Activities

CNL posted a notice on its website with a link to the CNSC webpage regarding the Port Granby Project licence renewal and also shared it through social media. CNL has directly informed the identified Indigenous groups and the Port Granby Citizen Liaison Group of its application to renew the Port Granby Project licence. To date, CNSC staff have not been made aware of any concerns expressed by Indigenous groups through CNL's engagement activities.

CNSC staff encourage CNL to continue engaging with interested Indigenous groups regarding the Port Granby Project site and activities including the licence renewal application.

4.1.2 Conclusion

Based on the information received to date, including CNSC staff's analysis, CNL's renewal application does not include any new activities and as such, CNSC staff conclude that it is not expected to cause any adverse impact to any potential or established Indigenous and/or treaty rights.

CNSC conducted appropriate engagement and outreach in relation to this licence renewal application with all interested Indigenous communities and is committed to meaningful, ongoing engagement with Indigenous communities that have an interest in CNSC-regulated facilities and activities.

4.2 Other Consultation

The CNSC made available up to $30,000 through its Participant Funding Program (PFP) to Indigenous groups, members of the public and stakeholders in providing value-added information to the Commission through informed and topic-specific interventions. This funding was offered to support recipients' review of CNL's application and CNSC staff's CMD in order to prepare written submissions for the Commission hearing in writing.

4.2.1 Discussion

The deadline for applications to request participant funding was May 21, 2021. A Funding Review Committee (FRC), independent from CNSC staff, reviewed the applications received, and made recommendations on the allocation of funding to eligible applicants. Based on recommendations from the FRC, the CNSC awarded a total of $23,596.44 to the following recipients, who are required to submit their written interventions to the Commission Secretariat by October 18, 2021 for the Commission's consideration:

- Canadian Association of Nuclear Host Communities
- Curve Lake First Nation
- Mohawks of the Bay of Quinte.

4.2.2 Conclusion

CNSC staff encourage participation in the Commission's public proceedings. The CNSC offered assistance to interested members of the public, Indigenous peoples, and other stakeholders, through the PFP, to prepare for and participate in the Commission's hearing in writing on CNL's application to renew the Port Granby Project licence.

4.3 Cost Recovery

The PHAI project is exempted from the CNSC's *Cost Recovery Fees Regulations* under section 2(e).

4.4 Financial Guarantees

The NSCA and associated regulations require licensees to make adequate provisions for safe decommissioning, including financial guarantees.

4.4.1 Discussion

Financial guarantee provisions for all licensed sites that are owned by AECL, and operated by CNL under the Government-owned, Contractor-operated model are the Government of Canada's liabilities. This commitment was last expressed to the CNSC in a letter from the Federal Minister of Natural Resources to Dr. Binder dated July 31, 2015. This letter states that AECL will retain ownership of the lands, assets and liabilities associated with CNL's licences, including the Port Granby Project, and states that the liabilities of AECL are the liabilities of Her Majesty in Right of Canada. On August 25, 2020, AECL confirmed that the provisions in the 2015 letter remain valid [15].

4.4.2 Conclusion

CNSC staff are of the view that the financial guarantee scheme for the Port Granby Project is adequate.

4.4.3 Recommendation

There is no requirement for any additional licensing activity or any changes to the proposed licence.

4.5 Licensee Public Information Program

Licence condition G.4 in CNL's current licence requires CNL to implement and maintain a public information and disclosure program (PIDP). The primary goal of a PIDP is to ensure that information related to the health, safety and security of persons and the environment, and other issues associated with the lifecycle of nuclear facilities and activities are effectively communicated to the public.

4.5.1 Discussion

CNL has maintained a public information program for the PHAI, which includes both the Port Hope Project and Port Granby Project. This program is guided by CNSC regulatory document REGDOC-3.2.1, *Public Information and Disclosure*, and is aligned with the principles of CNL's corporate public information program.

In 2019, CNSC staff performed an in-depth inspection of CNL's public information program for the PHAI which spanned over a 2-month period. During this period, CNSC staff assessed the information provided to the public by CNL for the Port Hope Project and Port Granby Project for accessibility and content. CNSC staff observed CNL's interactions with the public by attending multiple community engagement activities conducted by CNL. This inspection verified that CNL effectively implements the public information program requirements for the PHAI.

Since the 2019 inspection, CNSC staff have reviewed the Port Hope Project and Port Granby Project annual compliance reports for 2019 and 2020 and confirmed that CNL is effectively maintaining its PIDP, as per the regulatory requirements.

4.5.2 Conclusion

CNSC staff are of the view that CNL meets the regulatory requirements for public information and disclosure. CNSC staff are satisfied with CNL's communications and community involvement for the Port Granby Project.

4.5.3 Recommendation

There is no requirement for any additional licensing activity or any changes to the proposed licence.

5. OVERALL CONCLUSIONS AND RECOMMENDATIONS

CNSC staff have reviewed CNL's licence renewal application and supporting documents and determined that the application complies with the regulatory requirements. CNSC staff concluded that CNL's performance during the licensing term was satisfactory and met regulatory requirements. CNSC staff recommend that the Commission issue the proposed licence, WNSL-W1-2311.00/2022, that remains valid until December 31, 2022.

REFERENCES

1. An Agreement for the Cleanup and the Long-Term Safe Management of Low-Level Radioactive Waste Situated in the Town of Port Hope, the Township of Hope and the Municipality of Clarington. https://www.phai.ca/site/media/phai/ENG_Legal-Agreement_FINAL.pdf.
2. Application for Renewal of the Port Granby Project Waste Nuclear Substance Licence WNSL-W1-2311.02/2021. CNL. April 2021. eDoc 6533354.
3. Licence Application for the Port Granby Long-Term Low-Level Radioactive Waste Management Project. AECL. December 2004. eDoc 1228054.
4. Record of Proceedings, Including Reasons for Decision – Environmental Assessment Screening Report Regarding the Proposed Port Granby Long-Term Low-Level Radioactive Waste Management Project, Hearing Date August 17, 2009. CNSC. eDoc 3416239.
5. Record of Proceedings, Including Reasons for Decision for the Application by Atomic Energy of Canada Limited for Waste Nuclear Substance Licence for the Port Granby Long-Term Low-Level Radioactive Waste Management Project, Public Hearing Date of September 27, 2011. CNSC. 2011. eDoc 3846017.
6. Record of Proceedings, Including Reasons for Decision - Erratum for the Application by Atomic Energy of Canada Limited for Waste Nuclear Substance Licence for the Port Granby Long-Term Low-Level Radioactive Waste Management Project, Public Hearing Date of September 27, 2011. CNSC. December 2011. eDoc 3849540.
7. Record of Proceedings, Including Reasons for Decision for Atomic Energy of Canada Limited Request for Five Licence Transfers to, and Request for Two Specific Exemptions for, Canadian Nuclear Laboratories Limited, Hearing Date October 22, 2014. CNSC. 2014. eDoc 4543516.
8. Record of Decision for Application by Canadian Nuclear Laboratories Ltd. for the Amendment of the Port Granby Long-Term Low-Level Radioactive Waste Management Project Licence WNSL-W1-2311.01/2021, Date of Decision April 5, 2019. CNSC. 2019. eDoc 5869676.
9. Waste Nuclear Substance Licence Port Hope Long-Term Low-Level Radioactive Waste Management Project. November 29, 2017 to December 31, 2022. eDoc 5334041.
10. CMD 20-M22 Regulatory Oversight Report for Canadian Nuclear Laboratories Sites: 2019. December 2020. CNSC. eDoc 6359392.
11. Letter, R. Buhr (CNSC) to S. Faught (CNL). "*CNSC Staff Acceptance of the Proposed Port Granby Project Action Levels*". August 18, 2017. eDoc 5310065.

12. Letter, S. Faught (CNL) to H. Tadros (CNSC), "*Application for amendment and Modernization of the Port Granby Long-Term Low-Level Radioactive Waste Management Project WNSL-W1-2311.01/2021 - Revision of Release Limits for Liquid Effluent (Appendix B)*". June 1, 2018. eDoc 5550460.

13. CMD 17-M38 Event Initial Report: Canadian Nuclear Laboratories – Release of untreated water at Port Hope Project Long Term Waste Management Facility. August 2017. eDoc 5314921.

14. CMD 19-M9 Event Initial Report: Canadian Nuclear Laboratories – Worker injured on January 9, 2019 at CNL Port Granby Project. February 20, 2019. eDoc 5793372.

15. Submission of Information Regarding Financial Guarantees for all Atomic Energy of Canada Limited Sites Operated by Canadian Nuclear Laboratories, August 25, 2020, eDoc 6370326.

GLOSSARY

AECL	Atomic Energy of Canada Limited
ALARA	As low as reasonably achievable
BE	Below Expectations
CMD	Commission Member Document
CNL	Canadian Nuclear Laboratories
CNSC	Canadian Nuclear Safety Commission
CSA	Canadian Standards Association
EIR	Event Initial Report
ENL	Eldorado Nuclear Limited
FRC	Funding Review Committee
IAA	*Impact Assessment Act*
IEMP	Independent Environmental Program
LCH	Licence Conditions Handbook
LLRW	Low-Level Radioactive Waste
LTWMF	Long-Term Waste Management Facility
NEW	Nuclear Energy Worker
NSCA	*Nuclear Safety and Control Act*
PFP	Participant Funding Program
PHAI	Port Hope Area Initiative
PIDP	Public Information and Disclosure Program
REGDOC	Regulatory Document
RLTI	Reported Lost-Time Incident
ROR	Regulatory Oversight Report
RPR	*Radiation Protection Regulations*
SA	Satisfactory
SCA	Safety and Control Area
WGR	West Gorge Reservoir
WMF	Waste Management Facility
WNSL	Waste Nuclear Substance Licence
WWTP	Waste Water Treatment Plant

A. RATING LEVELS

Satisfactory (SA)

Safety and control measures implemented by the licensee are sufficiently effective. In addition, compliance with regulatory requirements is satisfactory. Compliance within the SCA meets requirements and CNSC expectations. Any deviation is minor and any issues are considered to pose a low risk to the achievement of regulatory objectives and CNSC expectations. Appropriate improvements are planned.

Below Expectations (BE)

Safety and control measures implemented by the licensee are marginally ineffective. In addition, compliance with regulatory requirements falls below expectations. Compliance within the SCA deviates from requirements or CNSC expectations to the extent that there is a moderate risk of ultimate failure to comply. Improvements are required to address identified weaknesses. The licensee is taking appropriate corrective action.

B. SAFETY AND CONTROL AREA FRAMEWORK

B.1 Safety and Control Areas Defined

The safety and control areas identified in section 2.2, and discussed in summary in section 3.2 are comprised of specific areas of regulatory interest which vary between facility types.

The following table provides a high-level definition of each SCA. The specific areas within each SCA are to be identified by the CMD preparation team in the respective areas within section 3 of this CMD.

SAFETY AND CONTROL AREA FRAMEWORK		
Functional Area	**Safety and Control Area**	**Definition**
Management	Management System	Covers the framework which establishes the processes and programs required to ensure an organization achieves its safety objectives and continuously monitors its performance against these objectives and fostering a healthy safety culture.
	Human Performance Management	Covers activities that enable effective human performance through the development and implementation of processes that ensure that licensee staff is sufficient in number in all relevant job areas and that licensee staff have the necessary knowledge, skills, procedures and tools in place to safely carry out their duties.
	Operating Performance	This includes an overall review of the conduct of the licensed activities and the activities that enable effective performance.
Facility and Equipment	Safety Analysis	Maintenance of the safety analysis that supports that overall safety case for the facility. Safety analysis is a systematic evaluation of the potential hazards associated with the conduct of a proposed activity or facility and considers the effectiveness of preventative measures and strategies in reducing the effects of such hazards.
	Physical Design	Relates to activities that impact on the ability of systems, components and structures to meet and maintain their design basis given new information arising over time and taking changes in the external environment into account.
	Fitness for Service	Covers activities that impact on the physical condition of systems, components and structures to ensure that they remain effective over time. This includes programs that ensure all equipment is available to perform its intended design function when called upon to do so.

SAFETY AND CONTROL AREA FRAMEWORK		
Functional Area	**Safety and Control Area**	**Definition**
Core Control Processes	Radiation Protection	Covers the implementation of a radiation protection program in accordance with the *Radiation Protection Regulations*. The program must ensure that contamination levels and radiation doses received by individuals are monitored, controlled and maintained ALARA.
	Conventional Health and Safety	Covers the implementation of a program to manage workplace safety hazards and to protect personnel and equipment.
	Environmental Protection	Covers programs that identify, control and monitor all releases of radioactive and hazardous substances and effects on the environment from facilities or as the result of licensed activities.
	Emergency Management and Fire Protection	Covers emergency plans and emergency preparedness programs which exist for emergencies and for non-routine conditions. This also includes any results of exercise participation.
	Waste Management	Covers internal waste-related programs which form part of the facility's operations up to the point where the waste is removed from the facility to a separate waste management facility. Also covers the planning for decommissioning.
	Security	Covers the programs required to implement and support the security requirements stipulated in the regulations, in their licence, in orders, or in expectations for their facility or activity.
	Safeguards and Non-Proliferation	Covers the programs and activities required for the successful implementation of the obligations arising from the Canada/IAEA safeguards agreements as well as all other measures arising from the *Treaty on the Non-Proliferation of Nuclear Weapons*.
	Packaging and Transport	Programs that cover the safe packaging and transport of nuclear substances and radiation devices to and from the licensed facility.

C. INSPECTIONS

The following table includes inspections conducted at Port Granby Project during the current licence period.

Inspection title	SCA(s) covered
12-WDD-Port Granby WMF-01	Environmental Protection, Physical Design
2013-WDD-PG-01	Physical Design
2013-WDD-Welcome Waste Management Facility -01	Environmental Protection, Radiation Protection, Conventional Health and Safety, Physical Design, Security
NPFD-CNL-PGP-2015-04-15	Fitness for Service, Environmental Protection
NPFD-CNL-PGP-2015-10-30	Management System, Fitness for Service, Radiation Protection, Conventional Health and Safety, Environmental Protection
NPFD-CNL-PGP-2016-01	Management System, Human Performance Management, Environmental Protection, Radiation Protection, Conventional Health and Safety
CNL-PHAI-PGP-2016-02	Physical Design, Management System, Fitness for Service
CNL-PHAI-PGP-2016-03	Management System, Human Performance Management, Conventional Health and Safety, Physical Design, Fitness for Service, Environmental Protection
CNL-PHAI-PGP-2016-04	Physical Design, Management System, Conventional Health and Safety, Environmental Protection
CNL-PHAI-PGP-2017-01	Human Performance Management, Conventional Health and Safety, Management System, Emergency Management and Fire Protection
CNL-PHAI-PGP-2017-02	Conventional Health and Safety, Emergency Management and Fire Protection, Human Performance Management, Management System, Radiation Protection

Inspection title	SCA(s) covered
CNL-PHAI-PGP-2017-03	Physical Design, Management System, Conventional Health and Safety, Environmental Protection
CNL-PHAI-PGP-2017-04	Environmental Protection, Management System, Radiation Protection, Emergency Management
CNL-PHAI-PGP-2017-05	Management System, Operating Performance, Physical Design, Radiation Protection, Environmental Protection, Conventional Health and Safety
CNL-PHAI-PGP-2018-01	Environmental Protection, Radiation Protection, Conventional Health and Safety, Fitness for Service, Operating Performance, Emergency Management and Fire Protection
CNL-PHAI-PGP-2018-02	
CNL-PHAI-PGP-2018-03	Conventional Health and Safety, Radiation Protection
CNL-PHAI-PGP-2018-04	Conventional Health and Safety, Management System
CNL-PHAI-PGP-2018-05	Radiation Protection, Environmental Protection, Conventional Health and Safety, Management System
CNL-PHAI-PGP-2018-06	Environmental Protection, Radiation Protection, Conventional Health and Safety
CNL-PHAI-PGP-2019-01: Waste Water Treatment Plan	Environmental Protection
CNL-PHAI-PGP-2019-02: Cell Capping	Physical Design
CNL-PHAI-PGP-2019-03: Slope Stability	Physical Design
CNL-PHAI-PGP-2019-04: Public Information Program	Public Information Program
CNL-PHAI-PGP-2019-05: Remediation Verification	Environmental Protection

Inspection title	SCA(s) covered
CNL-PHAI-PGP-2019-06: Radiation Protection	Radiation Protection
CNL-PHAI-PGP-2019-07: Cell Capping	Physical Design
CNL-PHAI-PGP-2020-01	Environmental Protection, Radiation Protection, Conventional Health and Safety, Management System
CNL-PHAI-PGP-2020-02	Physical Design, Environmental Protection
CNL-PHAI-PGP-2020-03	Physical Design
CNL-PHAI-PGP-2020-04	Physical Design
CNL-PHAI-PGP-2020-05	Management System

PART TWO

Part Two provides all relevant information pertaining directly to the licence, including:

1. Any proposed changes to the conditions, licensing period, or formatting of an existing licence;
2. The proposed licence;
3. The draft licence conditions handbook; and
4. The current licence.

PROPOSED LICENCE CHANGES

Overview

CNL currently has a waste nuclear substance licence (WNSL-W1-2311.02/2021) for the Port Granby Project. CNL submitted an application for the renewal of its waste nuclear substance licence for the Port Granby Project for a 1-year period. No changes to the authorized activities, terms and conditions of the existing licence and licence conditions handbook (LCH) have been requested, with the exception of the proposed licence expiry date.

Licence Conditions

The proposed licence incorporates the standardized licence conditions applicable to CNL's Port Granby Project as a waste nuclear substance licence. The authorized activities, terms and conditions of the existing licence apply to the proposed licence, therefore no changes have been made to the authorized activities, terms and conditions of the proposed licence.

Licence Format

The existing licence was amended in 2019 and at that time, CNSC staff took the opportunity to update the licence to reflect the CNSC's standardized licence conditions and modernized form. No changes were made to the format of the proposed licence as the current standardized format was already reflected.

Licence Period

CNL has requested a renewal of its licence for a period of 1-year for the Port Granby Project. Based on CNSC staff's review of CNL's application, performance, and supporting information, CNSC staff recommend CNL's request for a licence period of 1-year to the Commission, with an expiry date of December 31, 2022.

PROPOSED LICENCE

eDoc 6570598 (Word)
eDoc 6572726 (PDF)

DRAFT

PDF Ref: eDoc 6572726
PDF Ref: eDoc 6570598
File / Dossier: 2.05

WASTE NUCLEAR SUBSTANCE LICENCE
CANADIAN NUCLEAR LABORATORIES LTD.
PORT GRANBY LONG-TERM LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT PROJECT

I) LICENCE NUMBER: **WNSL-W1-2311.00/2022**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act*, this licence is issued to:

Canadian Nuclear Laboratories Ltd.
Laboratoires Nucléaires Canadiens ltée
286 Plant Road
Chalk River, Ontario K0J 1J0

III) LICENCE PERIOD: This licence is valid from **January 1, 2022** to **December 31, 2022**, unless suspended in whole or in part, amended, revoked, or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to conduct the following activities located in the Municipality of Clarington, Regional Municipality of Durham, Province of Ontario:

(a) possess, package, transport, transfer, manage, and store nuclear substances, except Category I, II and III nuclear material as defined in section 1 of the *Nuclear Security Regulations*, that are required for, associated with or arise from the Port Hope Area Initiative - Port Granby Long-Term Low-Level Waste Management Facility, located in the Municipality of Clarington, Regional Municipality of Durham, Province of Ontario.

V) EXPLANATORY NOTES:

(a) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(b) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(c) The Port Granby Long-Term Low-Level Radioactive Waste Management Project Licence Conditions Handbook (LCH) provides compliance verification criteria including the codes, standards and regulatory documents used to verify compliance with the conditions in the licence. The LCH also provides information regarding applicable versions of documents and non-mandatory recommendations and guidance on how to achieve compliance.

VI) CONDITIONS:

G. GENERAL

G.1 Licensing Basis

The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;

(ii) the conditions and safety and control measures described in the licence and the documents directly referenced in that licence;

(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").

G.2 Notification of Changes

The licensee shall give written notification of changes to the licenced activity or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 Remedial Cleanup Criteria

The licensee shall conduct remedial work in accordance with the project developed cleanup criteria.

G.4 Public Information and Disclosure Program

The licensee shall implement and maintain a public information and disclosure program.

1. MANAGEMENT SYSTEM

1.1 Management System

The licensee shall implement and maintain a management system.

2. HUMAN PERFORMANCE MANAGEMENT

2.1 Training Program

The licensee shall implement and maintain a training program.

3. OPERATING PERFORMANCE

3.1 Reporting Requirements

The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

4. PHYSICAL DESIGN

4. 1 Design Program

The licensee shall implement and maintain a design program.

5. RADIATION PROTECTION

5.1 Radiation Protection Program

The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

6. CONVENTIONAL HEALTH AND SAFETY

6.1 Conventional Health and Safety Program

The licensee shall implement and maintain a conventional health and safety program.

7. ENVIRONMENTAL PROTECTION

7.1 Environmental Protection Program

The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. EMERGENCY MANAGEMENT AND FIRE PROTECTION

8.1 Emergency Preparedness Program

The licensee shall implement and maintain an emergency preparedness program.

8.2 Fire Protection Program

The licensee shall implement and maintain a fire protection program.

9. SECURITY

9.1 Security Program

The licensee shall implement and maintain a security program.

10. PACKAGING AND TRANSPORT

10.1 Packaging and Transport Program

The licensee shall implement and maintain a packaging and transport program.

SIGNED at OTTAWA, this _____ day of _____, 2021.

_____

Rumina Velshi, President
On behalf of the Canadian Nuclear Safety Commission

DRAFT LICENCE CONDITIONS HANDBOOK

eDoc 6576575 (Word)
eDoc 6595899 (PDF)

Canada's Nuclear Regulator

eDoc 6576575 (Word)
eDoc 6595899 (PDF)

DRAFT

LICENCE CONDITIONS HANDBOOK
WNSL-LCH-W1-2311.00/2022

PORT GRANBY PROJECT
WASTE NUCLEAR SUBSTANCE LICENCE
WNSL-W1-2311.00/2022

Revision 0

Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire
Canada

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Licence Conditions Handbook **Effective: Month day, year**

LCH-WNSL-W1-2311.00/2022, Revision 0

Port Granby Project

Waste Nuclear Substance Licence

WNSL-W1-2311.00/2022

(Effective: Month day, year)

SIGNED at OTTAWA this _____ day of Month, year

_____

Candida Cianci, Director
Canadian Nuclear Laboratories Regulatory Program Division
Directorate of Nuclear Cycle and Facilities Regulations
Canadian Nuclear Safety Commission

REVISION HISTORY:

Effective Date	Rev. #	e-Doc #	Description	CAF e-Doc #
Month day, year	0	6576575	Original Document	N/A

TABLE OF CONTENTS

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PART I - INTRODUCTION

The purpose of the Licence Conditions Handbook (LCH) is to identify and clarify the relevant parts of the licensing basis for each licence condition. This will help ensure that the licensee performs the licensed activities at the Port Granby Project site in accordance with the licensing basis and the intent of the Port Granby Project licence. The LCH should be read in conjunction with the licence.

The LCH typically has three parts under each licence condition: the Preamble, Compliance Verification Criteria (CVC), and Guidance. The Preamble explains, as needed, the regulatory context, background, and/or history related to the licence condition. CVC are criteria used by Canadian Nuclear Safety Commission (CNSC) staff to verify and oversee compliance with the licence condition. Guidance is non-mandatory information, including direction, on how to comply with the licence condition.

The documents referenced in the LCH by e-Access numbers are not publicly available. The links provided in the LCH are references to the internal CNSC electronic filing system, and those documents cannot be opened from outside of the CNSC network.

Current versions of the licensing basis publications, licensee documents that require notification of change, and guidance documents referenced in the LCH are tracked in the document *Licensing Documents for the Port Granby Project* (eDoc 5450757) and Licensing Documents for CRL – *CNL Company-Wide Documents* (eDoc 5507946), which are controlled by the Canadian Nuclear Laboratories Regulatory Program Division and are available to the licensee upon request.

Most CNSC documents referenced in the LCH are available through the CNSC public website. Documents listed on the CNSC website may contain prescribed information, as defined by the *General Nuclear Safety and Control Regulations*. Information in these documents will be made available only to stakeholders with appropriate security clearance, on a valid need to know basis.

The licensee documents referenced in the LCH are not publicly available; they contain proprietary information or prescribed information, as defined by the *General Nuclear Safety and Control Regulations*.

Domestic and international standards (in particular consensus standards produced by the CSA Group) are an important component of the CNSC's regulatory framework. Standards support the regulatory requirements established through the *Nuclear Safety and Control Act* (NSCA), its Regulations and licences by setting out the necessary elements for acceptable design and performance at a regulated facility or a regulated activity. Standards are one of the tools used by the CNSC to evaluate whether licensees are qualified to carry out licensed activities.

The CNSC offers complimentary access to the CSA Group suite of nuclear standards through the CNSC website. This access platform allows interested stakeholders to view these standards online through any device that can access the Internet.

Up to date lists of the site licence, certificates, permits and representatives at the Port Granby Project that are subject to CNSC regulatory oversight, are maintained in the Canadian Nuclear Laboratories (CNL) document 900-514300-LST-001, *Site Licences, Certificates, Permits, Facilities and Representatives*.

Appendix A of the LCH provides definitions of terms and a list of acronyms.

PART II – FRAMEWORK FOR EACH CONDITION

G. GENERAL

Licence Condition G.1: Licensing Basis

The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;

(ii) the conditions and safety and control measures described in the licence and the documents directly referenced in that licence; and

(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").

Preamble:

The CNSC regulatory document REGDOC-3.5.3, *Regulatory Fundamentals*, outlines the CNSC's regulatory philosophy and approach to applying the *Nuclear Safety and Control Act*. It provides information for licensees, applicants and the public, and contains neither guidance nor requirements. In particular, subsection 6.1.1 of the REGDOC-3.5.3 provides information about the licensing basis.

Compliance Verification Criteria:

Under the standardized format and content, the waste nuclear substance licence requires Canadian Nuclear Laboratories (CNL) to implement and maintain certain programs. For the purpose of meeting a licence requirement, a program may be a series of documented, coordinated activities, not necessarily a single document.

Safety and control measures include important aspects of documentation such as, but not limited to: the facility-specific design basis and operational information documented in the most recent safety analysis and operational limits and conditions documents.

Details that are not directly relevant to safety and control measures for facilities or activities authorized by the licence are excluded from the licensing basis. Details that are relevant to a different safety and control area (SCA) (i.e., not the one associated with the main document), are only part of the licensing basis to the extent they are consistent with the main requirements for both safety and control areas.

In the event of any perceived or real conflict or inconsistency between two elements of the licensing basis, the licensee shall consult CNSC staff to determine the approach to resolve the issue.

Regulatory Role of the Licensing Basis

The licensing basis is established when the Commission renders its decision regarding the licence application.

Licence condition (LC) G.1 requires the licensee to conduct the licensed activities in accordance with the licensing basis. For activities that are not in accordance with the licensing basis, the licensee shall take action as soon as practicable to return to a state consistent with the licensing basis, taking into account the risk significance of the situation.

CNSC Staff's Approach to Assessing the Licensing Basis

LC G.1 is not intended to unduly inhibit the ongoing management and operation of the facility or the licensee's ability to adapt to changing circumstances and continuously improve, in accordance with its management system. Where the licensing basis refers to specific configurations, methods, solutions, designs, etc., the licensee is free to propose alternate approaches as long as they remain, overall, in accordance with the licensing basis and have a neutral or positive impact on health, safety, the environment, security, and safeguards. However, the licensee shall assess changes to confirm that operations remain in accordance with the licensing basis.

Changes to certain licensee documents require written notification to the CNSC, even if they are in accordance with the licensing basis. Further information on this topic is provided under LC G.2.

For any proposed activity to be carried out on the Port Granby Project site, CNSC staff will review the information submitted by CNL to independently determine if the proposed activity remains within the licensing basis. CNSC staff assess a proposed activity as being within the licensing basis based on the hazard and risk of the change, and its impact on the overall safety of the licenced activity.

CNSC staff will submit to the Commission for consideration any proposed activity which CNSC staff consider to be outside the licensing basis. If the Commission grants approval to such an activity, it will become part of the licensing basis and reflected in updates to LCH as appropriate.

Documentation

Applicable licensee documents are listed in the LCH under the heading "Licensee Documents that Require Notification of Change". Applicable CNSC regulatory documents, CSA standards and other documents are listed in the LCH under the heading "Licensing Basis Publications". The licensee documents listed in the LCH could cite other documents that also contain safety and control measures (i.e., there may be safety and control measures in "nested" references in the application). The licensee documents listed in the LCH and their "nested" references define the licensing basis for the programs required by the licence as long as they include safety and control measures.

Activities Included in the Port Granby Project Licensing Basis

Authorized licensed activities at the Port Granby Project include:

- possess, package, transport, transfer, manage, and store nuclear substances, except Category I, II and III nuclear material, as defined in section 1 of the *Nuclear Security Regulations*, that are required for, associated with or arise from the Port Hope Area Initiative - Port Granby Long-Term Low-Level Waste Management Facility, located in the Municipality of Clarington, Regional Municipality of Durham, Province of Ontario.

The Port Granby Project is authorized to take place over three phases under this licence:

- Phase 1 activities cover the period of time where the initial infrastructure and waste activities were to be managed as per the initial licence. Phase 1 activities have been completed.
- Phase 2 activities include the continued operation of the Port Granby Waste Management Facility, the development of the new Port Granby Long-Term Waste Management Facility and the remediation of the existing Port Granby Waste Management Facility.
- Phase 3 activities are those activities related to the post-closure operations of the Port Granby Long-Term Waste Management Facility associated with long-term care and maintenance.

Licence Application Documents and Supporting Documents

Document Number	Document Title	e-Doc
4502-CNNO-21-0005-L	Application for Renewal of the Port Granby Project Waste Nuclear Substance Licence WNSL-W1-2311.02 2021	6533354
2140-11RLZ-04-051	Licence Application for the Port Granby Long-Term Low-Level Radioactive Waste Management Project – Dec 2011	1228054
4502-508760-MAN-001	Licensing Manual – Information in Support of the Port Granby Long-Term Low-Level Radioactive Waste Management Project Licence Application	3780863

Guidance:

When the licensee becomes aware that a proposed change or activity might be outside the licensing basis, it should first seek direction from CNSC staff regarding the potential acceptability of this change or activity. The licensee should take into account that certain types of proposed changes might require significant lead times before CNSC staff can make recommendations and/or the Commission can properly consider them. Examples of these types of changes are discussed under various LCs in this LCH. Guidance for notifications to CNSC related to licensee changes are discussed under LC G.2.

Licence Condition G.2: Notification of Changes

The licensee shall give written notification of changes to the licensed activity or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

Preamble:

Most changes to the Port Granby Project are captured as changes to corresponding licensee's documents. The LCH identifies licensee documents that require written notification of changes to the CNSC.

Compliance Verification Criteria:

The licensee shall, as a minimum, notify CNSC staff of changes to licensee's documents identified in the LCH. The written notification of change shall include a copy of the revised document and a description of the change.

CNL program requirements documents (PRDs) and program description documents (PDDs) are accompanied by governing document indices (GDIs). The licensee shall provide updated versions of PDDs quarterly and GDIs annually or upon request from CNSC.

Changes to the licensing basis that are not clearly in a safe direction require further assessment of impact to determine if prior Commission approval is required in accordance with LC G.1.

Licensee documents listed in the LCH are subdivided into groups having different requirements for notification of change: documents that require prior written notification of changes and those that require written notification only. If the licensee document, or some part of it, also requires CNSC acceptance of change, a footnote has been added to the table. Such a requirement may be established in the document itself, in another LC, or in a licensing basis publication.

Written notifications shall include a summary description of the change, the rationale for the change, expected duration (if not a permanent change), and a summary explanation of how the licensee has concluded that the change remains in accordance with the licensing basis (e.g., an evaluation of the impact on health, safety, security, the environment and Canada's international obligations). A copy of the revised written notification document shall accompany the notification. All written notifications shall be transmitted to CNSC per established communications protocols.

The above also applies to a notice of change that requires CNSC staff acceptance, due to some other requirement in the licensing basis.

Prior Notification Requirement	Definition
Requires prior notification	The licensee shall submit the revised document to the CNSC as far in advance of planned implementation as practicable, but not less than 30 days prior to planned implementation. The licensee shall allow sufficient time for the CNSC to review the change proportionate to its complexity and the importance of the safety and control measures being affected. This is denoted by a "Y" in the column "prior notification". Where a document or some part of it requires acceptance by CNSC staff prior to implementation, a footnote has been added to the notification column.
Requires notification at time of implementation	The licensee shall notify the CNSC at the time of implementing a revised document. This is denoted by an "N" in the column "prior notification".

Changes that may affect the licensing basis, including any change that is not captured as a change to a document listed in the LCH (e.g., construction of new buildings, transitioning any building/land from one phase of the project to another, or infrastructure improvements at the Port Granby Waste Water Treatment Plant), requires written notification to the CNSC to verify they are in accordance with the licensing basis.

For any change that is outside the licensing basis defined in LC G.1 of the LCH, the licensee shall obtain Commission approval before proceeding with the change.

Guidance:

For proposed changes that are outside the licensing basis, the guidance for LC G.1 applies.

Licence Condition G.3: Remedial Cleanup Criteria

The licensee shall conduct remedial work in accordance with the project developed cleanup criteria.

Preamble:

The cleanup criteria were developed and introduced during the environmental assessment phase of the project. Consequently, the cleanup criteria cannot be amended without reconsideration of the environmental assessment for the project. This is meant to apply in one direction only, as the licensee may make changes in a safe direction without approval of the Commission.

The Port Hope Area Initiative cleanup criteria apply to radiological and hazardous substances. To verify the achievement of the Port Hope Area Initiative cleanup criteria, or to confirm that a site already achieves the cleanup criteria, CNL has implemented a remediation verification procedure. The procedure provides guidance on field screening, verification sampling and laboratory analysis.

Compliance Verification Criteria:

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
4502-509247-PLA-001	Environmental and Biophysical Effects Monitoring Plan	5450757	Y
2016-10-03 60154177	Port Hope Area Initiative Port Granby Remediation Verification Procedure & Addendum 1	5450757	N

Port Hope Area Initiative cleanup criteria, found in Appendix C-1 of the Environmental and Biophysical Effects Monitoring Plan 4502-509247-PLA-001, include radiological and hazardous substances as shown in the table below.

Cleanup Criteria for Inorganic Contaminants of Potential Concern (COPC) in Surface Soils

Contaminants of Potential Concern	Cleanup Criteria	Contaminants of Potential Concern	Cleanup Criteria
Primary COPC		**Secondary COPC**	
226Ra (Bq/g)	0.92	Barium (ppm)	1,500
230Th (Bq/g)	4.62	Beryllium (ppm)	-
232Th (Bq/g)	0.343	Boron (ppm)	2.0
Arsenic (ppm)	40	Cadmium (ppm)	12
Antimony (ppm)	40	Mercury (ppm)	10
Cobalt (ppm)	80	Molybdenum (ppm)	40
Copper (ppm)	225	Selenium (ppm)	2
Flouride6 (ppm)	2000	Silver (ppm)	40
Lead (ppm)	1000	Vanadium (ppm)	200
Nickel (ppm)	150		
Uranium (ppm)	76		

Guidance:

There is no guidance provided for this licence condition.

Licence Condition G.4: Public Information and Disclosure Program

The licensee shall implement and maintain a public information and disclosure program.

Preamble:

The public information and disclosure program ensures that information related to the health, safety and security of persons and the environment, and other issues associated with the lifecycle of the nuclear facilities are effectively communicated to the public. In addition, the program shall include a commitment to a disclosure protocol for ongoing, timely communication of information related to the licensed facility during the course of the licence period. The scope of REGDOC-3.2.1 *Public Information and Disclosure*, does not apply to this type of waste nuclear substance license. As such, it is only used for guidance in the development of CNL's Public Information and Disclosure Program.

Compliance Verification Criteria:

Licensing Basis Publications

There are no licensing basis publications provided for this licence condition.

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
4500-513000-PLA-003	Port Hope Area Initiative Phase 2 Public Information Program	5450757	N
CW-513430-REPT-001	Public Information Program for Canadian Nuclear Laboratories (CNL)	5507946	N

Guidance:

Guidance Documents

Document Number	Document Title	Version
REGDOC-3.2.1	Public Information and Disclosure	2018

1. MANAGEMENT SYSTEM

Licence Condition 1.1: Management System

The licensee shall implement and maintain a management system.

Preamble:

Safe and reliable operation of nuclear facilities requires a commitment and adherence to a set of management system principles and, consistent with those principles, the implementation of planned and systematic processes that achieve expected results. The management system focuses on safety in all business activities and supports the safe conduct of licensed activities at the Port Granby Project.

The *General Nuclear Safety and Control Regulations* require that a licence application contain the applicant's organizational management structure, including the internal allocation of functions, responsibilities and authority.

The management system is in place to satisfy the requirements set out in the NSCA, regulations made pursuant to the NSCA, the licence and the measures necessary to ensure that safety is of paramount consideration in the implementation of the management system. The management system promotes and supports a healthy safety culture by integrating the characteristics of a healthy safety culture:

- safety is a clearly recognized value;
- accountability for safety is clear;
- safety is integrated into all activities;
- a safety leadership process exists; and
- safety culture is learning driven.

Compliance Verification Criteria:

Licensing Basis Publications

There are no licensing basis publications provided for this licence condition.

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-514100-MAN-001	CNL Management System Manual	5507946	Y
900-514200-PDD-001	Quality	5507946	Y
900-514200-PRD-001	Quality	5507946	Y
900-514100-LST-001	Functional Authorities	5507946	N
900-514300-LST-001	Site Licences, Certificates, Permits, Building/Facility Contacts, & Licence Representatives	5507946	N
900-502000-LST-001	Program Management Authorities	5507946	N
900-514100-LST-002	Codes, Regulations, Standards, and other Documents	5507946	N
236-514200-QAP-001	Historic Waste Program Quality Assurance Plan	5450757	N

Guidance:

Guidance Documents

Document Number	Document Title	Version
REGDOC-2.1.2	Safety Culture	2018
CSA N286-12	Management system requirements for nuclear facilities	2012 (R2017)
CSA N286.0.1	Commentary on N286-12, Management system requirements for nuclear facilities	2021

2. HUMAN PERFORMANCE MANAGEMENT

Licence Condition 2.1: Training Program

The licensee shall implement and maintain a training program.

Preamble:

This licence condition requires the licensee to develop and implement training programs for workers.

It also provides the requirements regarding the program and processes necessary to support responsibilities of, qualifications and requalification training of persons at the nuclear facility.

As defined by the *General Nuclear Safety and Control Regulations*, a worker is a person who performs work that is referred to in a licence. This includes contractors and temporary employees. Training requirements apply equally to these types of workers as to the licensees' own employees.

The *General Nuclear Safety and Control Regulations* require that licensees ensure that there are a sufficient number of properly trained and qualified workers to conduct the licensed activities safely.

Compliance Verification Criteria:

The licensee shall ensure that all workers are qualified to perform the duties and tasks required of their position.

Licensing Basis Publications

Document Number	Document Title	Version	Effective Date
REGDOC-2.2.2	Personnel Training, Version 2	2016	April 1, 2018

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-510200-PDD-001	Training and Development	5507946	N
900-510200-PRD-001	Training and Development	5507946	Y
4500-510200-PLA-001	Port Hope Area Initiative Training Plan	5450757	N

Guidance:

There is no guidance provided for this licence condition.

3. OPERATING PERFORMANCE

Licence Condition 3.1: Reporting Requirements

The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

Preamble:

This LC requires the licensee to implement and maintain a program for reporting information to the Commission. This includes compliance monitoring, operational performance, event reporting, and various types of notifications.

Many reportable occurrences included in REGDOC-3.1.3 do not necessarily show a degradation of licensee's performance, and do not fall under CNSC definition of a "reportable event" as included in REGDOC-3.6, *Glossary of CNSC Terminology*. An exercise of judgment is needed to select from all occurrences reported to CNSC those that really constitute "reportable events". Sections 29 and 30 of the *General Nuclear Safety and Control Regulations* provides requirements for reportable events.

Compliance Verification Criteria:

Licensing Basis Publications

There are no licensing basis publications provided for this licence condition.

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-514300-MCP-006	CNL Reporting to Regulatory Agencies	5507946	N

Compliance Monitoring: Annual Reporting

The licensee shall prepare and submit to CNSC staff, at the intervals specified below, written reports that cover:

a) quarterly written reports on monitoring of liquid effluent releases to the environment including liquid effluent toxicity testing;

b) an annual compliance report submitted to the CNSC by end of April each year;

c) written quarterly progress reports on project activities;

d) written reports at completion of project activities. Project completion reports include, commissioning of the completion of Long Term Waste Management Facility capping system and commissioning of the East Gorge collection system. A timeframe for submitting the reports and the content of the report shall be agreed to by CNL and CNSC staff.

Guidance:

Guidance Documents

Document Number	Document Title	Version
REGDOC-3.1.3	Reporting Requirements for Waste Nuclear Substance Licensees, Class II Nuclear Facilities and Users of Prescribed Equipment, Nuclear Substances and Radiation Devices	1.0

4. PHYSICAL DESIGN

Licence Condition 4.1: Design Program

The licensee shall implement and maintain a design program.

Preamble:

A design program ensures that the facility design is managed using a well-defined systematic approach.

Implementing and maintaining a design program confirms that safety-related systems, structures and components (SSCs) and any modifications to them continue to meet their design bases given new information or activities arising over time and taking changes in the external environment into account. It also confirms that SSCs continue to perform their safety functions under all facility states and phases. An important cross-cutting element of a design program is design basis management.

CNL's detailed design description report describes the construction of an engineered containment mound, ancillary facilities, storm water management works, civil site servicing, transportation route upgrades and construction and operation of a new wastewater treatment plant. The detailed design description report also includes the design of the structures, systems and components that provide the measures necessary for the protection of health, safety, security and the environment.

Compliance Verification Criteria:

Licensing Basis Publications

Document Number	Document Title	Version	Effective Date
	National Building Code of Canada	2015	
	National Fire Code of Canada	2015	

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-508120-PDD-001	Design Authority and Design Engineering	5507946	N
900-508120-PRD-001	*Design Authority and Design Engineering*	*5507946*	*Y*
2010-12-22-60154177-DDDR-RA	Detailed Design Description Report	5450757	N
4502-508120-DBD-001	Detailed Design Description Addendum	5450757	N
4502-121256-DBD-001	Design Basis Document Water Treatment Definition – Port Granby Project	5450757	N

Guidance:

There is no guidance provided for this licence conditions.

5. RADIATION PROTECTION

Licence Condition 5.1: Radiation Protection Program

The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

Preamble:

The Radiation Protection Regulations (RPR) requires that the licensee implement a radiation protection program and also ascertain and record doses for each person who performs any duties in connection with any activity that is authorized by the NSCA or is present at a place where that activity is carried out. This program must ensure that doses to persons do not exceed prescribed dose limits and are kept as low as reasonably achievable (ALARA), social and economic factors being taken into account. Also, the program ensures that occupational exposures are ascertained and recorded in accordance with the RPR through the establishment of dosimetry requirements.

The regulatory dose limits to workers and the public are explicitly provided in the RPR. The RPR also specify the requirements related to action levels (ALs) and indicate that the licence will be used to identify their notification timeframes. ALs relate to the parameters of dose to workers.

ALs are designed to alert licensees before regulatory dose limits are reached. By definition, if an action level is reached, a loss of control of some part of the associated radiation protection program may have occurred, and specific action is required as defined in the RPR and the licence. ALs are not intended to be static and are to reflect operating conditions at the Port Granby Project site.

Compliance Verification Criteria:

Licensing Basis Publications

There are no licensing basis publications provided for this licence condition.

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-508740-PDD-001	Radiation Protection	5507946	N
900-508740-PRD-001	Radiation Protection	5507946	Y
4500-508740-PLA-001	Port Hope Area Initiative Radiation Protection Plan	5450757	Y

ALs for radiation protection at the Port Granby Project are included in the table below. In the event of a discrepancy between the table and the licensee documentation upon which they are based, the licensee documentation shall be considered the authoritative source providing that the licensee has followed its own change control process.

Port Granby Project Action Levels

Type of Dose	**Dose (mSv)**		
	Per 4 Weeks[3]	Per 13 Weeks or Quarter	Per Calendar Year
Effective Dose			
NEW	1	3	6
Pregnant NEW for the balance of pregnancy[1]	0.3	0.5	1
Skin Dose			
NEW[2]	1	3	6
Extremity Dose			
NEW	10	30	60
Committed Effective Dose			
NEW (Internal Exposure)	Not Applicable	Not Applicable	1

Notes:

1. ALs referred are effective dose limits to the pregnant worker. The balance of the pregnancy is defined as the time period from the moment the immediate management is informed, in writing, of the pregnancy to the end of the pregnancy.
2. When skin is unevenly irradiated, the equivalent dose received by the skin is the average equivalent dose over the 1 cm² area that received the highest equivalent dose. When the contamination is relatively uniform over the skin the averaging area of 100 cm² may be used for operational convenience but not if it significantly lowers the average dose.
3. It is understood that some dosimetry providers provide “monthly” dosimetry instead of 4 weeks. For the purpose of ALs, a 1-month dosimetry period is considered to have the same AL as “per 4 week monitoring period”

Guidance:

Guidance Documents

Document Number	Document Title	Version
REGDOC-2.7.1	Radiation Protection	1.0
REGDOC-2.7.2	Dosimetry, Volume I: Ascertaining Occupational Dose	1.0

The licensee should conduct a documented review of and, if necessary, revise the ALs at least once every 5 years in order to validate their effectiveness. The results of such reviews should be provided to CNSC staff.

6. CONVENTIONAL HEALTH AND SAFETY

Licence Condition 6.1: Conventional Health and Safety Program

The licensee shall implement and maintain a conventional health and safety program.

Preamble:

As the Port Granby Project is federally regulated, CNL is subject to the requirements of *Canada Labour Code* and *Canada Occupational Health and Safety Regulations*. Many aspects of the Port Granby Project are performed by contractors who are subject to the requirements under Ontario's *Occupational Health and Safety Act, R.S.O. 1990, c. O. 1.*

Compliance Verification Criteria:

Licensing Basis Publications

There are no licensing basis publications provided for this licence condition.

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-510400-PDD-001	Occupational Safety and Health	5507946	N
900-510400-PRD-001	Occupational Safety and Health	5507946	Y
4500-510400-PLA-001	Port Hope Area Initiative Occupational Safety and Health Plan	5450757	N

Employment and Social Development Canada is mandated with overseeing and enforcing compliance with the *Canada Labour Code* and its regulations. CNSC staff monitor licensee compliance with its conventional health and safety program, and will take regulatory actions for any potential unsafe work practice situations.

Guidance:

Guidance Documents

Document Number	Document Title	Version
REGDOC-2.8.1	Conventional Health and Safety	1.0

7. ENVIRONMENTAL PROTECTION

Licence Condition 7.1: Environmental Protection Program

The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

Preamble:

The *General Nuclear Safety and Control Regulations* require every licensee to take all reasonable precautions to protect the environment. The *Radiation Protection Regulations* prescribe the radiation dose limits for the general public of 1 mSv per calendar year.

The *Radiation Protection Regulations* specify requirements related to "Action Levels" and indicate that the licence will be used to identify the action levels and the notification timeframes.

The release of hazardous substances is regulated by the CNSC as well as both the Ontario Ministry of the Environment, Conservation and Parks and Environment and Climate Change Canada through various acts and regulations.

Action levels (ALs) for environmental releases are calculated by the licensees and aim to alert licensees of a potential loss of control of their environmental protection program. By definition, if an action level is reached, a loss of control of some part of the associated environmental protection program may have occurred, and specific action is required. ALs are not intended to be static and are to reflect operating conditions at the Port Granby Project.

Compliance Verification Criteria:

Licensing Basis Publications

There are no licensing basis publications provided for this licence condition.

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-509200-PDD-001	Environmental Protection	5507946	N
900-509200-PRD-001	Environmental Protection	5507946	Y
4502-509200-PLA-001	Environmental Management and Protection Plan for Construction and Remediation Activities	5450757	N
4502-509247-PLA-001	Environmental and Biophysical Monitoring Plan	5450757	Y
4502-508120-041-000	Project Environmental Protection Plan	5450757	N
4500-509200-PLA-001	Port Hope Area Initiative Dust Management Plan	5450757	N
4502-509246-PLA-001	Environmental Assessment Follow-up Program	5450757	N

The release limits for radiological and hazardous substances are considered part of the licensing basis. Changes to these limits are subject to LC G.1. The action levels and release limits for treated water from the Port Granby Project are summarized in the table below. In the event of a discrepancy between the table below and the licensee documentation, upon which they are based, the licensee documentation shall be considered the authoritative source providing that the licensee has followed its own change control process.

Treated Water Action Levels and Release Limits for Radioactive Substances and Hazardous Substances for the Port Granby Project

Contaminant	Units	Action Level for Weekly Concentration of Composite Sample	Limits for Weekly Concentration of Composite Sample	Limit for Monthly Mean Concentration of Composite Sample
Radium-226 (Ra)	Bq/L	0.05	0.74	0.37
Arsenic (As)	mg/L	0.05	0.2	0.1
Cadmium (Cd)	mg/L	0.001	0.002	0.001
Cobalt (Co)	mg/L	0.005	0.01	0.005
Copper (Cu)	mg/L	0.005	0.01	0.005
Phosphorus (P)	mg/L	0.35	0.7	0.35
Selenium (Se)	mg/L	0.02	0.06	0.03
Thallium (Tl)	mg/L	0.0005	0.016	0.008
Uranium (U)	mg/L	0.1	0.2	0.1
Vanadium (V)	mg/L	0.005	0.08	0.04
Ammonia-N (NH_3)	mg/L	5.75	11.5	5.75
Nitrite-N (NO_2)	mg/L	1.5	3	1.5
Nitrite-N (NO_3)	mg/L	75	150	75
Molybdenum (Mo) [1]	mg/L	0.05	-	-
pH	pH	6.5 – 8.5	6 – 9.5	6 – 9.5
Total Suspended Solids	mg/L	15	30	15
Acute Toxicity	-	-	-	Cannot be toxic [2]

[1] The current CCME guideline and Ontario provincial objective pre-date 1994 and are both identified as “interim”. This designation indicates criteria for where there was insufficient toxicology information to derive a formal water quality objective. The maximum predicted design release prior to treatment is well below the more recently derived provincial surface water quality objectives such as that derived for Saskatchewan in 2018 using the recent science. This indicates that, even without treatment, the aquatic environment is protected from exposure to molybdenum thus a licence release limit is not required.

[2] Acute toxicity testing may be performed quarterly after 12 consecutive months of non-toxic monthly results. CNL shall select and record the sampling date not less than 30 days in advance of collecting the grab sample to be used in toxicity testing. CNL shall inform CNSC staff when the toxicity testing frequency is changed.

Guidance:

Guidance Documents

Document Number	Document Title	Version
REGDOC-2.9.1	Environmental Protection: Environmental Principles, Assessments and Protection Measures	2020 (Version 1.2)
CSA N288.8	Establishing and implementing action levels to control releases to the environment from nuclear facilities	2017
REGDOC-2.9.2	Controlling Releases to the Environment (Under Development)	1.0

8. EMERGENCY MANAGEMENT AND FIRE PROTECTION

Licence Condition 8.1: Emergency Preparedness Program

The licensee shall implement and maintain an emergency preparedness program.

Preamble:

This licence condition requires the licensee to establish an emergency preparedness program to prepare for, to respond to, and to recover from the effects of accidental radiological/nuclear and/or hazardous substance release. As part of the emergency preparedness program, the licensee establishes an onsite emergency response plan and an emergency response organization and makes arrangements for coordinating off-site activities and cooperating with external response organizations throughout all phases of an emergency.

Compliance Verification Criteria:

Licensing Basis Publications

There are no licensing basis publications provided for this licence condition.

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-508730-PDD-001	Emergency Preparedness	5507946	N
900-508730-PRD-001	Emergency Preparedness	5507946	Y
4500-508730-PLA-001	Port Hope Area Initiative Emergency Plan	5450757	N

Guidance:

There are no guidance documents provided for this licence condition.

Licence Condition 8.2: Fire Protection Program

The licensee shall implement and maintain a fire protection program.

Preamble:

Licensees require a comprehensive fire protection program (the set of planned, coordinated, controlled and documented activities) to ensure the licensed activities do not result in unreasonable risk to the health and safety of persons and to the environment due to fire and to ensure that the licensee is able to efficiently and effectively respond to emergency fire situations.

The *National Fire Code of Canada* sets out technical provisions regulating (a) activities related to the construction, use or demolition of buildings and facilities; (b) the condition of specific elements of buildings and facilities; (c) the design or construction of specific elements of facilities related to certain hazards; and (d) protection measures for the current or intended use of buildings.

Compliance Verification Criteria:

Licensing Basis Publications

Document Number	Document Title	Version	Effective Date
	National Fire Code of Canada	2015	

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-508720-PDD-001	Fire Protection	5507946	N
900-508720-PRD-001	Fire Protection	5507946	Y

The licensee shall, prior to implementation of any proposed modifications of the facility with the potential to negatively impact protection from fire, determine the need for a third-party review based on a risk based approach using the fire protection screening process.

Guidance:

Where CSA N-393 does not address a fire protection topic or issue in whole, or where additional guidance is beneficial, the standards and recommended practices set out by the National Fire Protection Assocation are used as guidance by CNSC staff in determining the adequacy of a fire protection measure.

Guidance Documents

Document Number	Document Title	Version
CSA N-393	Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances	2013 (R 2016)

9. SECURITY

Licence Condition 9.1: Security Program

The licensee shall implement and maintain a security program.

Preamble:

Nuclear security puts in place provisions to prevent, detect and stop malevolent acts, such as theft, sabotage, unauthorized access, illegal transfer or other acts involving nuclear material, other radioactive substances or their associated facilities.

The *General Nuclear Safety and Control Regulations* require that a licence application contain information related to site access control and measures to prevent loss or illegal use, possession or removal of the nuclear substance, prescribed equipment or prescribed information.

Compliance Verification Criteria:

Licensing Basis Publications

There are no licensing basis publications provided for this licence condition.

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Prior Notification
900-508710-PDD-001	Security	5507946	N
900-508710-PRD-001	Security	5507946	Y
4500-508710-PLA-001	Port Hope Area Initiative Security Plan	5450757	N

Guidance:

The CNL document 4500-508710-PLA-001 *Port Hope Area Initiative Security Plan* should be updated periodically and resubmitted to CNSC staff.

10. PACKAGING AND TRANSPORT

Licence Condition 10.1: Packaging and Transport Program

The licensee shall implement and maintain a packaging and transport program.

Preamble:

The transport of nuclear substances or hazardous substances must be done in accordance with the requirements of the *Packaging and Transport of Nuclear Substances Regulations, 2015*, (PTNSR) and *Transportation of Dangerous Goods Regulations* (TDGR) set out by Transport Canada.

The licensee shall implement and maintain a packaging and transport program that will be in compliance with all the regulatory requirements set out in the Transport Canada TDGR and in the PTNSR.

Every person who transports or causes to be transported radioactive nuclear substances (included in Class 7 of the Schedule to the *Transportation of Dangerous Goods Act*) shall act in accordance with the requirements of the TDGR set out by Transport Canada.

As used in the PTNSR, the International Atomic Energy Agency (*IAEA) Regulations* means the IAEA requirements document SSR-6 *Regulations for the Safe Transport of Radioactive Material (2012 Edition)* is amended from time to time.

The PTNSR provides specific requirements for the design of transport packages, the packaging, marking and labeling of packages and the handling and transport of nuclear substances.

Compliance Verification Criteria:

Licensing Basis Publications

Document Number	Document Title	Version	Effective Date
IAEA SSR-6	*Regulations for the Safe Transport of Radioactive Material* (2018 Edition)	2018	June 2018

Licensee Documents that Require Notification of Change

Document Number	Document Title	eDoc	Notification
900-508520-PDD-001	Transportation of Dangerous Goods	5507946	N
900-508520-PRD-001	Transportation of Dangerous Goods	5507946	Y
4500-508520-PLA-001	Transportation of Dangerous Goods Port Hope Area Initiative	5450757	N

Guidance:

Guidance Documents

Document Number	Document Title	Version
REGDOC-2.14.1	Information Incorporated by Reference in Canada's *Packaging and Transport of Nuclear Substances Regulations, 2015*	2016

APPENDIX A: DEFINITIONS AND ACRONYMS

A-1. DEFINITIONS

Terms and expressions used in the LCH are consistent with the definitions provided in the NSCA, the regulations made pursuant to the NSCA, or in the CNSC regulatory document REGDOC-3.6, *Glossary of CNSC Terminology*.

A-2. ACRONYMS

Acronym	Definition
ALARA	As Low As Reasonably Achievable
AL	Action Level
Bq	Becquerel
CNL	Canadian Nuclear Laboratories
cm	centimeter
CNSC	Canadian Nuclear Safety Commission
COPC	Contaminant of Potential Concern
CSA	Canadian Standards Association
CVC	Compliance Verification Criteria
g	Gram
GDI	Governing Document Indices
IAEA	International Atomic Energy Agency
L	Liter
LC	Licence Condition
LCH	Licence Conditions Handbook
mg	Milligram
mSv	Millisievert

Acronym	Definition
NSCA	*Nuclear Safety and Control Act*
PDD	Program Description Document
ppm	Parts Per Million
PRD	Program Requirement Document
PTNSR	*Packaging and Transport of Nuclear Substances Regulations*
REGDOC	Regulatory Document
RPR	Radiation Protection Program
SCA	Safety and Control Area
SSC	Systems, Structures, and Components
TDGR	*Transportation of Dangerous Goods Regulations*

CURRENT LICENCE

eDoc 5604953 (Word)
eDoc 5642987 (PDF)

PDF Ref: e-Doc 5642987
Word Ref: e-Doc 5604953
File / Dossier: 2.05

WASTE NUCLEAR SUBSTANCE LICENCE

PORT GRANBY LONG-TERM LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT PROJECT

I) LICENCE NUMBER: **WNSL-W1-2311.02/2021**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act*, this licence is issued to:

Canadian Nuclear Laboratories Ltd.
Laboratoires Nucléaires Canadiens ltée
286 Plant Road
Chalk River, Ontario
K0J 1J0

III) LICENCE PERIOD: This licence is valid from **March 29, 2012** to **December 31, 2021**, unless suspended in whole or in part, amended, revoked, or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to conduct the following activities located in the Municipality of Clarington, Regional Municipality of Durham, Province of Ontario:

(a) possess, package, transport, transfer, manage, and store nuclear substances, except Category I, II and III nuclear material as defined in section 1 of the *Nuclear Security Regulations*, that are required for, associated with or arise from the Port Hope Area Initiative - Port Granby Long-Term Low-Level Waste Management Facility, located in the Municipality of Clarington, Regional Municipality of Durham, Province of Ontario.

V) EXPLANATORY NOTES:

(a) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(b) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(c) The Port Granby Long-Term Low-Level Radioactive Waste Management Project Licence Conditions Handbook (LCH) provides compliance verification criteria including the codes, standards and regulatory documents used to verify compliance with the conditions in the licence. The LCH also provides information regarding applicable versions of documents and non-mandatory recommendations and guidance on how to achieve compliance.

VI) CONDITIONS:

G. General

G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;

(ii) the conditions and safety and control measures described in the licence and the documents directly referenced in that licence;

(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").

G.2 The licensee shall give written notification of changes to the licenced activity or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 The licensee shall conduct remedial work in accordance with the project developed clean-up criteria.

G.4 The licensee shall implement and maintain a public information and disclosure program.

1. Management System

1.1 The licensee shall implement and maintain a management system.

2. Human Performance Management

2. 1 The licensee shall implement and maintain a training program.

3. Operating Performance

3. 1 The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

4. Physical Design

4. 1 The licensee shall implement and maintain a design program.

5. Radiation Protection

5.1 The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

6. Conventional Health and Safety

6.1 The licensee shall implement and maintain a conventional health and safety program.

7. Environmental Protection

7.1 The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. Emergency Management and Fire Protection

8.1 The licensee shall implement and maintain an emergency preparedness program.

8.2 The licensee shall implement and maintain a fire protection program.

9. Security

9.1 The licensee shall implement and maintain a security program.

10. Packaging and Transport

10.1 The licensee shall implement and maintain a packaging and transport program.

SIGNED at OTTAWA, this 5 day of April, 2019.

Rumina Velshi, President
On behalf of the Canadian Nuclear Safety Commission

e-Doc 5604953 (Word)
e-Doc 5642987 (PDF)