Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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SUPPLEMENTAL/COMPLÉMENTAIRE

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Licence Renewal

Commission Request for Information

Réponse à la Demande

d'information de la Commission

New Brunswick Power Corporation

Point Lepreau Nuclear Generating Station

Société d'énergie du Nouveau-Brunswick

Centrale nucléaire de Point Lepreau

Commission Public Hearing – Part 2

Audience publique de la Commission – Partie 2

Scheduled for:

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Le 10-12 mai 2022

Submitted by:

CNSC Staff

Soumise par :

Le personnel de la CCSN

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Summary

The purpose of this supplemental Commission Member Document (CMD) is to provide additional information to what is presented in CMD 22-H2, including:

- CNSC staff responses to topics of interest expressed by the Commission during the Part 1 Point Lepreau Nuclear Generating Station Licence Renewal Commission hearing, held on January 26, 2022.

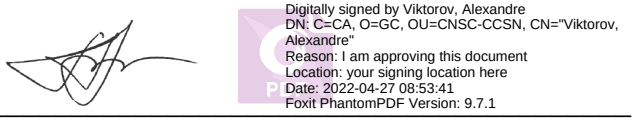
Résumé

Le présent CMD supplémentaire fournit des renseignements supplémentaires sur ce qui est présenté dans le CMD 22-H2, notamment :

- Les réponses du personnel de la CCSN à l'égard des sujets d'intérêt exprimés par la Commission lors de la Partie 1 de l'audience sur le renouvellement de permis de la centrale nucléaire de Point Lepreau qui a eu lieu le 26 janvier 2022.

Signed/signé le

27 April 2022/27 avril 2022



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EXECUTIVE SUMMARY

Canadian Nuclear Safety Commission (CNSC) staff acknowledge that the Point Lepreau Nuclear Generating Station is located within the territory covered by the Peace and Friendship Treaties with the Wolastoqey, Peskotomuhkati and Mi'gmaq peoples.

CMD 22-H2.B is a supplemental CMD to CMD 22-H2, *Submission From CNSC Staff Point Lepreau NGS Licence*. This CMD provides CNSC staff responses to topics of interest expressed by the Commission during the Part 1 Point Lepreau Nuclear Generating Station Licence Renewal Commission hearing, held on January 26, 2022.

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

1. OVERVIEW

The Panel of the Commission is considering the request from New Brunswick Power Corporation (NB Power) to renew the Power Reactor Operating Licence (PROL) for the Point Lepreau Nuclear Generating Station (NGS). Part 1 Commission hearing was held on January 26, 2022.

NB Power's current operating licence expires on June 30, 2022 [1]. NB Power submitted an application to renew the PROL for the Point Lepreau NGS for 25 years.

CNSC staff recommends a 20-year licence period that aligns with the projected post-refurbishment operational life of the Point Lepreau NGS. Long-term operating licence periods are consistent with international practices.

In the Commission Proceedings Transcript of the Part 1 hearing, the Commission identified topics of interest to be considered during the Part 2 Commission hearing. CNSC staff have confirmed that there are no safety concerns associated with those topics. CNSC staff have provided information on the topics of interest in this supplemental CMD.

2. LICENCE PERIOD

According to the transcript for the January 26, 2022, Public Hearing, Commission members were interested in receiving further rationale for, and examining potential implications of, a 20 or 25 years licence period.

The following sections will provide information regarding long term operations and the duration of the licence period.

As will be discussed in this section, there is a high level of confidence in the Canadian nuclear sector's state of readiness for longer term licences. The licence renewal applications are no longer an efficient or needed mechanism to drive the resolution of safety issues. There are multiple avenues available for engaging representatives of Indigenous Nations and Communities, and the public.

2.1 Historic Perspective

The original Atomic Energy and Control Board (AECB) standard licences were issued to major facilities including nuclear power plants (NPPs), large fuel cycle facilities and uranium mines and mills for sort duration, typically two years. Between the 1970s to the 1990s there were limited public hearings and licence amendments were handled by CNSC staff.

Since some questions related to design, construction, and initial operation remained open, shorter licences were considered appropriate to allow following up on important subjects. Given that the relicensing process was relatively simple, the short licence periods were deemed acceptable.

During the timeframe of 1970-2000, the Canadian nuclear sector gained significant operating experience from the commercial operation of nuclear facilities, including NPPs, in Canada and internationally. Many safety matters

have been examined in depth and brought to satisfactory resolution. The regulatory requirements and operating practices evolved and matured to result in strong management system, healthy safety culture, preparedness for severe accidents, systematic maintenance, environmental qualification, configuration management and an integrated view of safety.

At the same time, the AECB has begun increasing public engagement in hearings; this process intensified since 1990s leading to a robust public engagement.

2.2 Recommending Licence Periods to the Commission

The *Nuclear Safety and Control Act* (NSCA) came into force in 2000 and outlined the roles and responsibilities of CNSC staff and the Commission. As a result of the change, there was an increase in the number of items that required Commission decision.

In 2002, CNSC staff presented to the Commission a new approach for recommending licence periods based on benchmarking with international practices, as outlined in CMD 02-M12.A [2].

International benchmarking showed that licences in many countries are issued either for the life of the nuclear facility or range from 10 to 40 years. Countries with longer licence periods in many cases included the requirement to complete periodic safety reviews (PSR). These periodic assessments have not indicated any erosion of safety performance with longer licence periods.

CNSC staff's approach for recommending licence periods to the Commission included several elements [2]. According to CMD 02-M12.A, CNSC staff's recommendation for a 5-year licence was based on the following:

- establishing standardized criteria across all licence types
- using a risk-informed approach based on facility type and licensed activity
- applying a comprehensive approach to compliance
- implementing regular reporting to the Commission

CNSC staff's recommendation of a 10-year licence was based on:

- meeting all the elements for a 5-year licence
- conducting an ISR/PSR for NPPs

The approach proposed in CMD 02-M12, allowed the CNSC to be more closely aligned with international licensing practices.

Accepting the recommendations of the approach outlined in CMD 02-M12, the Commission granted 10-year licences in the recent NPP licence renewal hearings.

2.3 Progress and Evolution Since 2002

In the recent years, the CNSC has continued to evolve in the regulatory framework, oversight methods, reporting and engagement practices, among other activities.

CNSC staff have continued to invest in maintaining a strong regulatory framework and have published several new and updated regulatory documents that set clear regulatory requirements for the safe operation of NPPs.

CNSC staff have further strengthened its compliance oversight, including:

- Implementation of a risk-informed 5-year baseline plan that incorporated significant improvements, as outlined in the Office of the Auditor General corrective action plan.
- Approved inspection guides/procedures have been established for all Safety and Control Areas allowing a comprehensive compliance oversight.
- CNSC staff systematically capture lessons learned arising from regulatory oversight. Those lessons learned are used to drive continuous improvements in the conduct of inspections.

The existing suite of enforcement tools has been enhanced by introducing additional enforcement actions and clarifying their application.

There have also been significant strides in strengthening regulatory reporting, for example, the Regulatory Oversight Report (ROR) and the Environmental Protection Review (EPR) Report.

CNSC staff recently developed a discussion paper, DIS-21-01, to solicit feedback on the ROR and its associated process. The results were shared with the Commission in CMD 22-M5 and were used to inform CNSC staff's approach for the 2022 ROR that will be presented in 2023.

CNSC staff perform independent assessments of the licensee's environmental protection program and document the results in an environmental protection review report. This is a new initiative where CNSC staff produce and publish updated EPR reports every 5 years.

CNSC staff have continued to further the development of the CNSC trust building strategy. Specifically, at the Point Lepreau NGS, CNSC staff engage in routine meetings with representatives of Indigenous Nations and Communities and with members of the public. To achieve meaningful engagement, CNSC staff continuously adjust the topics for discussion and the type of information shared based on the current needs and continuously seek feedback on the frequency of the meetings and the quality of the engagement.

2.4 IAEA Guidance

The IAEA guidance, in particular *IAEA SSG-13: Functions and Processes of the Regulatory Body for Safety* is essentially silent on the subject of licence duration other than: "The regulatory body may require the renewal of an authorization (licence) after a set time interval, depending on national legislation." There is no guidance related to any safety function of such a renewal.

This is consistent with the Canadian regulations where the Commission has the ultimate authority to assess applications, consider CNSC staff recommendations and interventions and render the final decision on a licensing period.

2.5 Benchmarking of Long-Term Licence and Public Participation

According to page 83 of the transcript from the January 26, 2022 Public Hearing, Commission members wanted to better understand differences in the other countries enabling legislation with regards to the role of the public.

The principle of public participation in licensing is found in the legal frameworks of many countries. However, countries' legal systems for public participation vary [3]. Most frequently it is the responsibility of the nuclear regulatory body or another decision-making authority (e.g., the public authority in charge of environmental protection or a local authority) to promote public participation through means such as public hearings and/or written comments received prior to reaching the final decision.

Table 1 outlines licence periods of several countries [3]. These were correlated to the country's enabling legislation with regards to informing the public and the role of the public in the licensing process. Based on this information, CNSC staff conclude that the CNSC mandate and practices, are consistent with, or exceeding, practices of many other countries, with respect to public participation and access to information.

Table 1: International benchmarking of public participation in the licensing of nuclear power reactors

Country	Licence Period	PSR Frequency	Public Participation and Access to Information
Argentina	10 years	Every 10 years	The decision-making authority has a legal duty to solicit public participation. The licensee must provide all information as requested by the public, with exceptions such as confidential information.
Belgium	Plant lifetime	Every 10 years	Does not include a requirement to solicit public participation. Members of the public may request access to information that relates to the environment.

Country	Licence Period	PSR Frequency	Public Participation and Access to Information
Canada	10 years	Every 10 years	The decision-making authority has a legal duty to solicit public participation. Both the decision-making authority and the licensee have a legal duty to provide information to the public with exceptions such as confidential information.
Finland	10 - 20 years	Every 10 years	The decision-making authority has a legal duty to solicit public participation and provide information to the public.
France	Plant lifetime	Every 10 years	The decision-making authority has a legal duty to solicit public participation. A proposed operation beyond 35 years for a nuclear power reactor is subject to a public enquiry, prior to their submission for authorization. The regulatory authority and the licensee have a general duty to provide information to the public.
Germany	32 years	Every 10 years	The decision-making authority has a legal duty to solicit public participation and provide information to the public.
South Korea	30 years, 40 years, and 60 years	Every 10 years	The decision-making authority has a legal duty to solicit public participation and provide information to the public. The licensee must provide the draft Radiation Environmental Report to the public.

Country	Licence Period	PSR Frequency	Public Participation and Access to Information
Netherlands	Plant lifetime	Every 10 years	The decision-making authority has a legal duty to solicit public participation and provide information to the public. Participation depends on whether different or greater environmental impacts are to be expected if the licence is granted than those that were previously considered in the context of the earlier issued licence.
Romania	30 years	Case-by-case basis	The decision-making authority has a legal duty to solicit public participation and provide information to the public.
Spain	10 years	Every 10 years	Legislation allows public participation but neither the decision-making authority nor the licensee has a legal duty to solicit public participation. Decision-making authority has a legal duty to provide information to the public.
Sweden	Plant lifetime	Every 10 years	There is no legal duty for either the decision-making authority or the licensee to solicit public participation. The legal framework establishes a duty for the regulatory authority to provide information to the public.

Country	Licence Period	PSR Frequency	Public Participation and Access to Information
United Kingdom	Plant lifetime	Every 10 years	There is no legal requirement for either decision-making authority or licensee to solicit participation. Public involvement mechanism is established at the discretion of the licence holder. Any individual has the right to solicit information from the public authority in charge of decision making.
United States	40 years, with 20-year renewal option	Regulatory oversight coupled with the back fitting rule as requested by the licensees	The decision-making authority has a legal duty to solicit public participation. Both the decision-making authority and the applicant have a legal duty to provide information to the public.

2.6 Conclusion

CNSC staff have a robust regulatory program in place that maintains effective regulatory oversight of NB Power's compliance and safety performance regardless of the licence period.

According to the Record of Decision from the Refurbishment Commission Hearing in 2012, the Commission noted that refurbishment extended the plant operating life for up to 30 years. CNSC staff's review confirmed that NB Power's assessments and life extension activities have demonstrated that the plant can continue to operate safely for an operating life of up to 30 years post refurbishment, or until 2042. A 25-year licence would extend beyond this date. Therefore, CNSC staff's recommendation of a 20-year licence period aligns with the current projected operational life of the Point Lepreau NGS.

3. ENGAGEMENT

According to pages 72 to 74, 82 and 103 of the transcript from the January 26, 2022, Public Hearing, the Commission expressed interest in knowing how longer-term licences would impact public and Indigenous engagement with CNSC staff and with the Commission.

CNSC staff continually engage with members of Indigenous Nations, communities and representative organizations, the public, and interested parties about regulated facilities, including the Point Lepreau NGS. CNSC staff's current engagement strategy focuses on providing opportunities for open dialogue

regarding specific areas of interest and/or concern, the CNSC mandate to disseminate scientific information about the nuclear industry, and to provide updates regarding the regulatory oversight of the facility.

CNSC staff are currently establishing a holistic trust building initiative. This initiative includes focus on improved transparency of the CNSC's regulatory oversight, expanding focused communication and engagement, information sharing, and participation in Commission proceedings. CNSC staff seek to tailor Indigenous and public engagement to the interests of the audience. Engagement is not limited nor bound to a licensing period. Engagement is not limited nor bound to a licensing period. The engagement with Indigenous Nations, communities and representative organizations, and the public is a continuum regardless of the duration of the licence period.

3.1 CNSC Staff - Indigenous Nations and Communities Engagement

CNSC staff have identified the Indigenous Nations and communities who may have an interest in the proposed renewal of the Point Lepreau NGS PROL, and generally in the regulatory oversight of the facility.

Indigenous Nations in New Brunswick include: six Wolastoqey communities represented by the Wolastoqey Nation in New Brunswick (WNNB); nine Mi'gmaq communities, which are represented by Mi'gmawe'l Tplu'taqnn Incorporated (MTI); and the Peskotomuhkati Nation at Skutik represented by Passamaquoddy Recognition Group Inc. Although Elsipogtog First Nation is a member of MTI, for consultation and engagement purposes and for the purposes of the licence renewal hearing, Elsipogtog First Nation is represented by its consultation and resources organization Kopit Lodge.

These groups have expressed an interest in the proposed renewal of NB Power's Point Lepreau NGS PROL, as the NGS site is in, or in proximity to, their traditional and/or treaty territories. Table 2 lists the Indigenous Nations and communities in New Brunswick and identifies each community by their representative body [5].

Figure 1: Map of Indigenous communities in New Brunswick

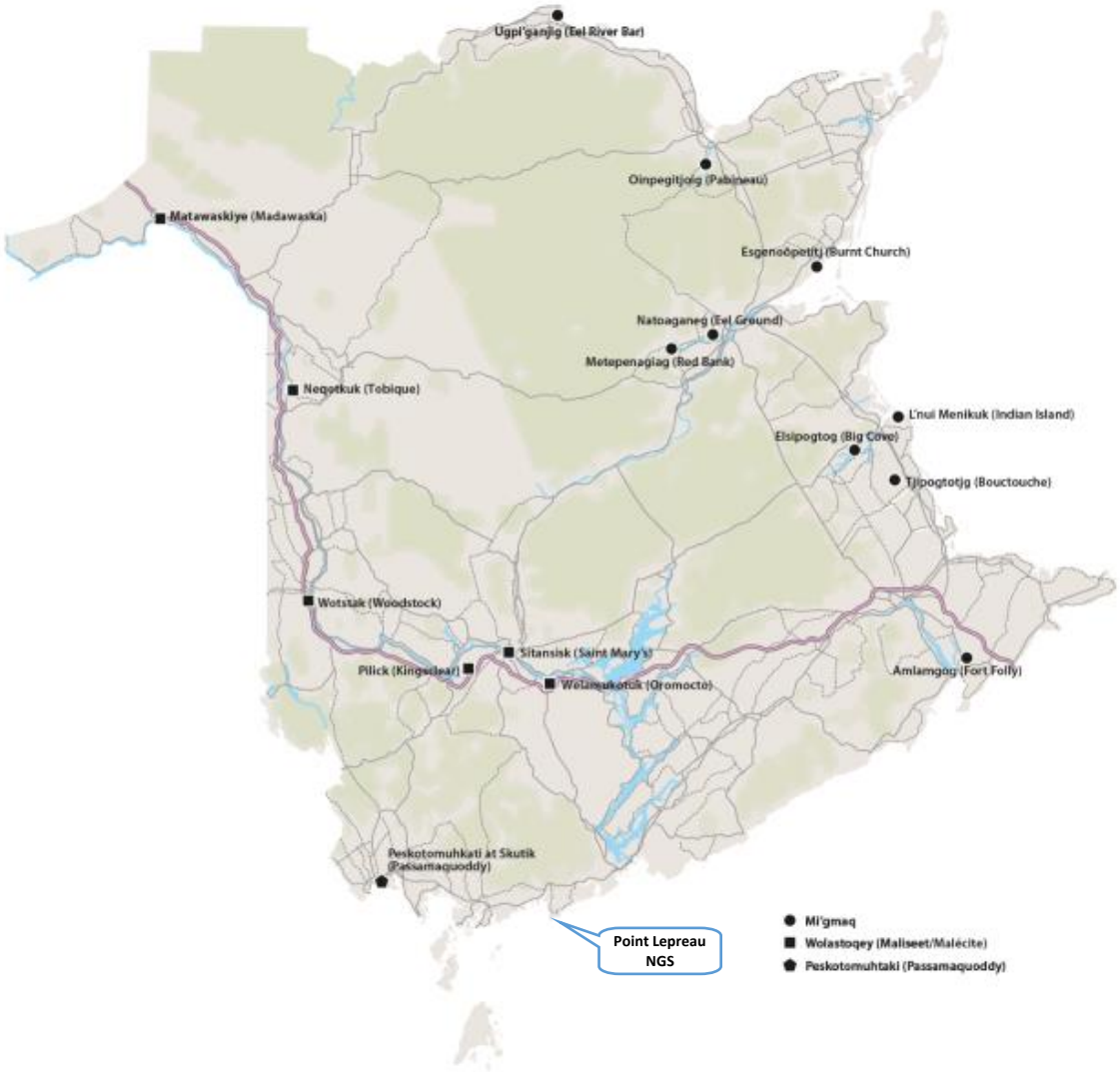


Table 2: Consultative Representative Organizations for each New Brunswick Indigenous Community

Kopit Lodge	MTI	Passamaquoddy Recognition Group Inc.	WNNB
Elsipogtog	Ugpi'ganjig	Peskotomuhkati Nation at Skutik	Welamukotuk
	Oinpegitjoig		Sitansisk
	Esgenoôpetitj		Pilick
	Metepenagiag		Wotstak
	Natoaganeg		Neqotkuk
	L'nui Menikuk		Matawaskiye
	Tjipogtotjg		
	Amlamgog		

Additionally, the Sipekne'katik First Nation in Nova Scotia and the Kwilmu'kw Maw-klusuaqn (KMK), who represent the Mi'gmaq at the provincial level in Nova Scotia, have expressed an interest in being informed of the ongoing activities at the Point Lepreau NGS.

Following the 2017 licence renewal of the Point Lepreau NGS, CNSC staff continued to meet with MTI, WNNB, and the Peskotomuhkati Nation at least twice per year, and more if requested. During these meetings, knowledge is shared with each other and CNSC staff listen and respond to concerns and questions. Where there is an interest in a particular area, CNSC specialists are invited to speak on the topic. The meeting agendas are flexible and can be tailored to the specific interests and concerns. CNSC staff routinely provide high level information about the CNSC, regulatory oversight at Point Lepreau NGS, and results from the CNSC Independent Environmental Monitoring Program (IEMP) sampling around the Point Lepreau NGS. More specific topics of interest that have been requested by the representative organizations include information on transportation of radioactive materials, small modular reactors (SMR), environmental assessments, and waste management, for which CNSC specialists were invited to share information and answer questions.

Additionally, during routine meetings CNSC staff discuss recent and upcoming inspections or activities. Also, if there is interest, CNSC staff work with the Indigenous Nations to tailor the topics being discussed and the activities being conducted. As described in CNS paper '*Including Indigenous Observers on Regulatory Inspections'* [4]:

> During routine engagement meetings with the Indigenous Nations in New Brunswick, one of the Nations expressed interest in an Environmental Monitoring inspection. CNSC staff invited the Nation to participate in the next Environmental Monitoring inspection as an observer. The Nation was able to observe the regulator's inspection process, the criteria used to assess the licensee on a given topic and observe the results as they apply to the licensee's licence requirements. As Environmental Monitoring is a meaningful topic to the Nation, CNSC staff view the inclusion of the Nation as a progressive step to establishing trust.

This inspection is seen as a pilot for representatives of Indigenous Nations and communities to participate, as observers, in CNSC inspections. A similar observed inspection was conducted at the Bruce NGS. The feedback from this pilot, will be used to inform future similar activities as they come up and "*…it is hoped that their participation has helped to build trust in the regulatory oversight process and the CNSC's role in ensuring the safe operations of nuclear facilities in their territories*" [4].

For the licence renewal application, CNSC staff sent letters of notification in July 2021 to the Indigenous Nations and communities, and to representative organizations who have expressed interest in receiving information. The letters provided information regarding the proposed licence renewal application, the

availability of participant funding to facilitate participation in the licence renewal process, and details on how to participate in the Commission's public hearing process in both January and May 2022.

Since the finalization of CNSC staff CMD 22-H2, CNSC staff have reached out to all interested representative organizations and have since met with members of Wolastoqey Nation in New Brunswick, Peskotomuhkati Nation, Mi'gmawe'l Tplu'taqnn Inc. and Kopit Lodge. During these meetings discussions continued on the Point Lepreau NGS licence renewal application and the related regulatory review process. Each meeting was tailored to provide more information on specific areas of interest identified by the particular representative organization, including the CNSC staff Environmental Protection Review (EPR) report on Point Lepreau NGS, the CNSC's IEMP, the gathering and inclusion of Indigenous Knowledge, and further information on the CNSC's role with regards to regulating potential SMR projects in New Brunswick. During the most recent meetings, CNSC staff confirmed with the Indigenous representative organizations that the frequency and format of the meetings are presently adequate and CNSC staff agreed that these can be adjusted as required in the future.

During the engagement sessions, CNSC staff were made aware of specific concerns related to the licence duration and the potential for a reduced opportunity to voice concerns to the Commission. CNSC staff responded to these concerns and provided information on the rationale for the recommended licence duration. CNSC staff indicated that providing opportunities for Indigenous Nations, communities and representative organizations and the public to communicate with the Commission was a priority.

CNSC staff are committed to ongoing engagement and collaboration with interested Indigenous Nations, communities and representative organizations in New Brunswick and will continue to provide opportunities for meaningful long-term engagement. CNSC staff remain willing to establish a formalized approach through a Terms of Reference and engagement work plan with any interested Indigenous Nation, community and organization with interests related to the Point Lepreau NGS. CNSC staff also remain flexible and open to changing the format and frequency of engagement meetings and discussions so that they can be tailored to the needs of the Indigenous Nations, communities, and representative organizations.

As a result of the continued engagement effort, there is greater interest and understanding in the CNSC's regulatory activities. This can enable further trust in CNSC's regulatory processes [5].

3.2 CNSC Staff - Public Engagement

A part of the CNSC's mandate is to disseminate scientific, technical, and regulatory information to the public. To this objective, CNSC staff routinely engage with the public and interested stakeholders in various ways.

CNSC staff develop plain language content to build public awareness of CNSC activities, to promote the work CNSC does as Canada's nuclear regulator and to

ensure specific audiences are aware and have an opportunity to engage in Commission proceedings.

Based on the work of the subject matter experts within the organization, CNSC staff develop communication methods to help achieve its objective of disseminating information and building awareness among specific audiences while following Government of Canada requirements for accessibility and official languages.

Some of the communications methods, dependent on the audience, include:

- web content updates and accompanying social media promotion
- social media awareness and education campaigns
- video production and promotion through various platforms
- direct mail outs
- recorded webinar presentations
- virtual and in-person open house sessions
- engagement with the media through editorial submissions, letters to the editor, media technical briefings, regular media advisories and targeted media pitches

CNSC staff engagement has included hosting four webinars in November 2021 and March 2022, which focused on NB Power's Point Lepreau licence renewal application. CNSC staff presented an overview of the role of the nuclear regulator, the independence of Commission, an overview of NB Power's application, how staff assessed the application, and information on how interested parties can be involved in the Part 2 Commission hearing through the CNSC intervention process. Staff ensure ample time is available to answer questions during the sessions so that all voices are heard. Any questions that are unanswered publicly are followed-up on by means relevant to the requestor.

These webinars were promoted through direct mail campaigns to over 80,000 New Brunswick residents living within an 80-kilometre radius from the Point Lepreau NGS. The webinars were also solicited on the CNSC website, through email to subscribers, and on various social media platforms. In addition, a media advisory was published on canada.ca and CNSC staff also directly reached out to numerous Atlantic Canadian media outlets.

In total, out of 122 participants who registered, 77 participants attended the webinars. For the English sessions held on November 16, 2021, and March 2, 2022, 39 and 37 participants, respectively, attended. For the French webinar sessions held on the same dates as the English sessions one (1) participant attended in November and no one (0) was present for the March session.

From the polling that was conducted during the sessions, notable results include:

- the majority of participants heard about the webinar through the email list and through a flyer in their mailbox

- observations that the majority of participants were not too familiar with a power reactor operating licence
- that some participants were neutral, and the majority polled were satisfied and very satisfied with how questions were answered during the sessions

Notable information acquired from surveys conducted at the end of each webinar indicated the following observations:

- that the sessions are helpful in providing more information on small modular reactors
- that the information presented was well organized and presented well
- that the CNSC could have gone into more detail on a few items
- that the questions posed by participants should not be anonymous
- that the recording of the webinar should be publicly available
- that more documentation should be available on the CNSC website
- that there was a willingness by CNSC staff to answer all the questions
- that there was good interaction between CNSC and participants
- that some of the material was presented too quickly

CNSC staff also participated in NB Power Open Houses held in local communities including Dipper Harbour, Saint John, and Saint George. During these sessions, staff were available to answer questions and provide information on the licence renewal. CNSC staff routinely attend NB Power Community Liaison meetings where they are available to answer any questions the public may have in relation to NB Power's station updates and any topics of interest from the participants on regulatory matters. As well, CNSC staff provide updates with regards to CNSC activities, such as, compliance, surveillance, and licensing.

Prior to the Part 1 hearing CNSC staff were interviewed by the media to discuss a variety of topics related to licence renewal. The media asked questions about the daily operations at Point Lepreau NGS, the CNSC participant funding program, the proposed 20-year CNSC staff licence duration, and the intervention process.

CNSC participates in the Privy Council Office public opinion research survey, conducted yearly to measure public perception of the nuclear regulator and industry. While generic in nature, the survey results indicate very little fluctuation in levels of familiarity with the nuclear industry or its safety among Canadians.

CNSC staff collect and implement feedback from various specific audiences including intervenors, participants in public consultation, and Indigenous Nations and communities and host communities. This is done through seeking feedback in meetings, entrance and exit surveys, survey of intervenors through the Participant Funding Program, and regular analysis of social and traditional media, web analytics and surveys.

CNSC staff are committed to continue to build relationships with key stakeholders with an interest in the CNSC's regulatory oversight of the Point Lepreau NGS. Building off existing efforts, CNSC staff will meet with interested stakeholders and members of the public and solicit their feedback on how these groups would like to be engaged and strive to better understand their interests, concerns, and values. CNSC staff commit to continuing engagement activities and to adjust these activities to suit the interests of the public and stakeholders around the Point Lepreau NGS community.

3.3 Commission Engagement

NB Power's request for a longer-term PROL has led to Indigenous Nations, communities and representative organizations, members of the public, and other stakeholders expressing concern that they may lose the opportunity to voice their opinions directly to the Commission if licence periods are extended too far into the future.

In addition to a licence hearing, there are several other types of commission proceedings, as outlined in Table 3: Commission Proceedings participation below. Many of these proceedings facilitate participation in person and/or online via live video webcast. Some of these proceedings currently provide opportunities for Indigenous Nations, communities and representative organizations, members of the public, and stakeholders to engage with the Commission through the intervention process. The Commission can adjust the level of engagement in Commission Proceedings at their discretion. At the time of writing this CMD, the check marks under Intervenors indicates the current practice as established by the commission.

Table 3: Commission Proceedings participation

Commission Proceedings	CNSC Staff	Licensees	Intervenors	
			Written	Oral
Annual Regulatory Oversight Report	☑	☑	☑	☑*
Specific Commission Request	☑	☑	**	**
Status Report on Power Reactors	☑	☑	☐	☐
Event Initial Reports	☑	☑	☐	☐
Deviations from the Licensing Basis	☑	☑	☐	☐
Review of Orders and Appeals of Administrative Monetary Policies	☑	☑	☐	☐

* Indigenous intervenors can request to present orally
** At the discretion of the Commission

The Commission, irrespective of the duration of any licence can amend, suspend in whole or in part, or revoke a licence at any time, on its own initiative, should it not be satisfied with a licensee's performance. CNSC staff will continue to inform the Commission on licensee performance as outlined in the following sections.

3.3.1 Routine Reporting to the Commission

Status Report on Power Reactors

CNSC staff update the Commission on the status of NPPs in Canada through the *Status Report on Power Reactors* at every Commission Meeting. The CMD includes information on operations, licensing, event notifications, station updates, updates on any previous Commission actions, and any other relevant information.

Regulatory Oversight Reports for Nuclear Power Generating Sites

CNSC staff summarize the outcomes of regulatory oversight and highlights of the safety performance of Canadian NPPs, and their associated waste management facilities in the annual Regulatory Oversight Report (ROR) for Nuclear Power Generating Sites (NPGS). The NPGS ROR is presented to the Commission on an annual basis and provides CNSC staff with the opportunity to report on annual licensee performance. The ROR also allows licensees to provide additional information and engage with the Commission. The ROR process includes written interventions from members of the public and Indigenous Nations and communities. In addition, Indigenous intervenors can request to present orally. Participant funding is available to support interventions.

3.3.2 Non-Routine Reporting to the Commission

Event Initial Reports

CNSC staff's event initial reports (EIR) inform the Commission of potential issues, including those that require a Commission decision. This reporting mechanism provides notification of significant events to the Commission and informs on the situation, the impact, and the status of controls in place to assure safety and security.

Deviations from the Licensing Basis

The licensing basis sets the boundary conditions for a regulated activity and is defined as a set of requirements and documents for a regulated activity comprising the following:

- the regulatory requirements set out in the applicable laws and regulations
- the conditions and safety and control measures described in the licence, and the documents directly referenced in that licence
- the safety and control measures described in the licence application and the documents needed to support that licence application

All licensees are required to conduct their activities in accordance with the licensing basis. Requests for deviations from the licensing basis will be brought to the Commission for decision.

Review of Orders

Under the *Nuclear Safety and Control Act* a CNSC inspector or a CNSC designated officer can order a licensee to take measures to ensure that the

environment, health, safety and security of persons are protected or to ensure that Canada's international obligations are complied with. REGDOC-3.5.2, *Compliance and Enforcement, Volume II: Orders Under the Nuclear Safety and Control Act* describes the processes surrounding making, receiving, reviewing, appealing and redetermining orders under the NSCA. If such an order is issued, within 10 days of making an order, the inspector or designated officer will refer the order to the Commission for review. The process allows the person(s) subject to the order an opportunity to be heard and present information for consideration.

Appeal of Administrative Monetary Penalties

An administrative monetary penalty (AMP) is a monetary penalty imposed by the CNSC, without court involvement, for the violation of a regulatory requirement. An AMP can be applied against any individual or corporation subject to the NSCA. Under section 65.1 of the NSCA an AMP can be reviewed, upon request by the recipient, by submitting a request for review to the Commission within 30 days of receiving the notice of violation.

3.3.3 Potential Additional Reporting to the Commission

The Commission has the authority to call public proceedings on any matter of interest to the Commission, and to include intervenor participation and to make participant funding available in such proceedings. The Commission may consider including interventions when there are items that are of Indigenous and public interest. For example, the Commission may consider holding a proceeding on an environmental protection review (EPR) report and on outcomes of a periodic safety reviews (PSR), in a similar manner as the ROR.

EPR reports are published on the CNSC's website and on the Open Government platform on a regular cycle and are linked with a licensee's 5-year Environmental Risk Assessment. Members of the public and Indigenous Nations and communities may provide comments on the EPR report at any time during the licensing period including through written interventions as part of a Regulatory Oversight Report process.

3.4 Conclusion

The CNSC's regulatory program includes multiple and varied engagement activities that will continue to be implemented and adjusted to meet the needs of the audience regardless of the licence period. Opportunities currently exist for CNSC staff, licensees, and intervenors to engage directly with the Commission. Under the NSCA, the Commission has the authority to request, at any time, an update on any subject of concern throughout the proposed licensing period and involve intervenors in public proceedings.

4. MATTERS OF REGULATORY INTEREST

4.1 Periodic Safety Reviews

According to the Point Lepreau NGS Licence Renewal Part 1 Commission proceeding transcript, the Commission expressed interest in topics related to the periodic safety review.

CNSC regulatory document REGDOC-2.3.3, *Periodic Safety Reviews* was published in 2015 and states that the objectives of a periodic safety review (PSR) are to determine the following:

- the extent to which the facility conforms to modern codes, standards, and practices
- the extent to which the licensing basis remains valid for the next licensing period
- the adequacy and effectiveness of the programs and the systems, structures, and components (SSCs) for continued safe operation until the next PSR
- the improvements to be implemented to resolve any gaps identified in the review and timelines for their implementation

NB Power performed and implemented the initial PSR, also known as an Integrated Safety Review (PSR-1), for the Point Lepreau NGS refurbishment outage. PSR-1 was conducted between 2003 and 2012 and assessed the health of the reactor core assembly components, fuel channel management and fitness for service programs, among others. PSR-1 identified actions for major component replacements and design improvements which NB Power completed during the Point Lepreau NGS refurbishment outage.

PSRs completed after refurbishment outages do not typically identify the immediate need for major component replacements and design enhancements. These PSRs frequently identify areas for improvement that mainly consist of procedural updates and alignment with new regulatory documents and modern codes and standards.

The outcome of PSR-1 was valid for a 10-year period following the restart of the reactor after refurbishment in 2012. NB Power completed a PSR-2 that would cover the period from 2022 to 2032.

4.1.1 PSR-1 Major Design Changes During Refurbishment

According to pages 98 and 99 of the transcript from the January 26, 2022, Public Hearing, the Commission expressed interest in the details of the major refurbishment activities. Specifically what components were replaced or improved, what changed during these activities and the impact of the changes on the safety case.

The Point Lepreau NGS PSR-1 identified actions for several systems that required completion during refurbishment to extend the operating life of the plant for up to

30 years. CNSC staff confirmed that NB Power completed the identified actions during refurbishment to ensure continued safe operations. A comprehensive list of major modifications that were completed during refurbishment is outlined in Appendix J of the NB Power's PROL 17.11/2011 [1]. Some of the major design changes and improvements are listed in Table 4 below.

Table 4: Major design changes during PSR-1

System	Description of Change	Impact on Safety
Reactor core assembly components	• All 380 fuel channel assemblies, calandria tubes, and the entire length of connecting inlet and outlet feeder piping from the end fittings to the headers, were replaced. • Qualification testing of seamless calandria tube design was performed.	• To reduce the potential for pressure tube failures, consequential calandria tube failures and moderator drain following a pressure tube rupture.
Main generator and auxiliaries	• Main generator stator and rotor were rewound. • Dryer in the hydrogen system was replaced. • Automatic voltage regulators and stabilizers in the excitation auxiliary system were replaced with new digital units. • The existing excitation rectifier units were replaced.	• To ensure continued high reliability and to extend life of plant.
Turbine controls	• Turbine electro-hydraulic governor system, turbine supervisory system, and the turbine mechanical over-speed system were replaced with modern electronic systems.	• To ensure continued high reliability and to extend life of plant.
Shutdown systems programmable digital comparators	• New programmable digital comparator units were installed on shutdown system #1 (SDS1) and shutdown system #2 (SDS2).	• To maintain high reliability of safety systems.
Shutdown systems trip coverage	• Moderator high/low level trip was added to SDS1 and SDS2 to replace the previous moderator temperature trip. • SDS2 high pressure trip was added on Reactor Outlet	• To improve coverage for moderator events related to leaks, loss of circulation and loss of cooling. • To provide coverage

System	Description of Change	Impact on Safety
	Headers 3 and 7.	for loss of flow events in the heat transport system.
Moderator subcooling margin	• The moderator heat exchanger was upgraded to achieve 100% of the Recirculated Cooling Water (RCW) flow by incorporating additional sealing strips and rods.	• To improve the moderator sub-cooling margin. • To enhance confidence in crediting the moderator to act as a heat sink for loss of coolant accident scenarios.
Shield cooling system	• A rupture disk was installed on top of the existing inspection port of the calandria vault. • A remotely operated isolation valve was installed on the tank 3 outlet line (3W-6).	• To maintain the pressure within the design limits following a postulated severe accident with loss of moderator heat sink. • To eliminate a potential breach of containment via the expansion tank 3 under severe accident conditions.
Raw service water system	• The raw service water system components, re-circulated cooling water system components, and shutdown cooling system components were refurbished.	• To enhance the high reliability of heat sinks.
Primary heat transport system pumps	• A software design change to trip the main heat transport system pumps on high thrust bearing temperature was implemented.	• To ensure that the heat transport system pumps are tripped if two of the four resistance temperature detectors (RTD) detect high thrust bearing temperature. • To provide protection for the main heat transport pumps in case of loss of service water.

System	Description of Change	Impact on Safety
Main control room filter system	• A filtering system was installed in addition to the Main Control Room ventilation system.	• To protect the main control room's air supply from potential radioactive contaminants arising from an accidental release during a severe accident.
Start-up detectors	• Design change was implemented to ensure that there is independent movement of the three-startup boron trifluoride (BF_3) detector counters. The electrical cables were attached to each counter in separate compartments.	• To enhance reliability by enabling two BF_3 detectors to continue to function while one is being moved.
Safety related resistance temperature detector (RTD) cables	• Safety related RTD circuits located within the reactor building were removed from the existing PVC insulated cables and replaced with single and multi triad cables in dedicated junction boxes.	• To prevent a potential drift of RTD signals due to interactions with power cables under accident conditions of high temperature and humidity.
Emergency power system (EPS) fuel storage tank	• A new underground fuel storage tank for the EPS diesel generators was installed to meet the New Brunswick environmental standard for underground fuel storage tanks.	• To extend the life of the EPS diesel generators. • To meet the New Brunswick environmental standards for underground fuel storage tanks.
Moderator system gate valves	• The Main Moderator System Guelph Engineering Gate Valves were replaced with a qualified design of metal seated butterfly valves.	• To eliminate leakage and allow isolation valves to perform their function for the extended life of the station.
Uninterruptible power supply system inverters and rectifiers	• The uninterrupted Class I power rectifiers and the Class II inverters were replaced.	• To ensure continued high reliability and to extend life of plant.

System	Description of Change	Impact on Safety
Liner	• The D2O storage tank liner was removed and the NORMAC dousing tank liner was repaired.	• To extend the life for long-term safe operation.
Passive autocatalytic recombiner system (PARS)	• Nineteen hydrogen recombiners were installed in the reactor building.	• To control hydrogen produced during design basis accidents. • To support the control of hydrogen during severe accidents.
Containment filter and post-accident monitoring and sampling systems	• An emergency filtered containment venting system, post-accident sampling and monitoring were installed as severe accident enhancements.	• To ensure defence in depth is maintained. • To improve the overall containment system so that it is more robust and resilient to beyond design basis and severe accidents. • To control and monitor the containment environment.

4.1.2 Periodic Safety Review Integrated Implementation Plan

According to page 96 of the transcript from the January 26, 2022, Public Hearing, Commission members expressed interest in the difference between the approach for addressing Point Lepreau NGS IIP changes compared to the approach for other stations. For example, any changes to the Darlington NGS IIP, including the schedule and the timeline for completion, requires Commission approval.

Regulatory document, RD-360: *Life Extension of Nuclear Power Plants*, published in February 2008, outlined the requirements for extending the life of a nuclear power plant. Point Lepreau, Darlington, Pickering, and Bruce NGS, conducted integrated safety reviews in accordance with RD-360. As outlined in RD-360, any deviation from the integrated implementation plan (IIP) required Commission approval.

Operating experience revealed that any deviation irrespective of its safety significance had required a Commission proceeding thereby, introducing an administrative burden that took the focus away from safety. There are recent examples of administrative IIP updates from Bruce Power [6], and Ontario Power Generation (Darlington [7] and Pickering NGS [8]) that have required Commission Proceedings.

The modernization of the regulatory framework led to the development of REGDOC-2.3.3 which superseded RD-360. REGDOC-2.3.3 is consistent with the

International Atomic Energy Agency's Safety Standards Series, Specific Safety Guide No. SSG-25, *Periodic Safety Review for Nuclear Power Plants*. As approved by the Commission, REGDOC-2.3.3 was published in April 2015.

In contrast to RD-360, REGDOC-2.3.3 outlines that CNSC staff review and accept the PSR basis document and the IIP. NB Power conducted PSR-2 in accordance with REGDOC 2.3.3, and CNSC staff accepted the PSR basis document and the IIP.

The change in the CNSC regulatory framework resulted in the difference between the Point Lepreau NGS PSR-2 IIP and the previous approach applied to other NPPs in Canada.

CNSC staff will update the Commission on the status of the IIP annually, through the annual Regulatory Oversight Report (ROR) Commission Meeting. Changes that are neutral to safety will be addressed by staff, while changes that impact safety in the non-conservative direction and set Point Lepreau NGS outside of their licensing basis will be brought to the Commission's approval.

4.1.3 Periodic Safety Review #2 (PSR-2) Integrated Implementation Plan (IIP) Equipment Related Actions

According to page 107 of the transcript for the January 26, 2022, Public Hearing, Commission members requested a summary of the IIP actions from PSR-2 that identifies the actions that are equipment-related initiatives.

PSR-2 identified a total of 1285 IIP actions. Table 5 indicates the number of IIP actions that are process based and equipment based and their associated safety significance. All actions have been assigned one of four categories of safety significance ratings, which are explained in

Table 6.

Table 5: Summary of PSR-2 IIP actions

Type of Action	Category 1	Category 2	Category 3	Category 4
Process based upgrades	0	10	267	939
Equipment based upgrades	0	11	58	0

Table 6: Description of categories of PSR-2 IIP actions

Category	Description
1	A significant issue that results in a major reduction in the margin of safety to the public or to station personnel.
2	A significant issue that causes some reduction in the margin of safety to the public or to station personnel.
3	An adverse condition that has the potential to be more significant or may be a precursor to a more significant issue.
4	A condition not adverse to quality or is an improvement opportunity.

As per Table 5, there are no category 1 IIP actions identified by PSR-2. All category 4 actions relate to updating, modifying, and creating processes as opportunities for improvement and best practices.

There are 346 category 2 and category 3 IIP actions. Approximately 79% of the 346 actions relate to processes-based improvements. Approximately 21% of the 346 actions, that is, 69 actions, relate to work on equipment or software.

Table 7 outlines the category 2 equipment based IIP actions. These actions have mostly already been completed and CNSC staff have approved their closure except for the moderator water replacement (target completion date 2028) and foreign material in the Primary Heat Transport System (target completion date 2026)

Table 7: PSR-2 IIP equipment and software related actions

Actions	Category 2 IIP Action	Description
SF01F047 SF01F048	Emergency core cooling pump trip	To reduce the potential of a water hammer transient caused by a low-pressure emergency core cooling pump trip and restart.
SF01F018 SF04F005 SF04F048 SF04F049	NORMAC liner for containment and dousing tank	To assess and finalize the liner inspection campaign and maintenance strategies.
SF01F356	Moderator water replacement	To replace the existing moderator water with heavy water that has a lower tritium content.
SF02F010	Equipment reliability	To improve equipment reliability by considering industry Operating Experience (OPEX) and research findings.
SF02F012	Foreign material in the Primary Heat Transport System (PHTS) and associated fuel defects	To identify potential causes of fuel defects, focusing on sources of foreign material ingress in the PHTS.
SF05F014	Post-refurbishment operating range and trip parameters	To improve maintaining the integrity of the safe operating envelope (SOE) by identifying stakeholders who input into the safety analysis.
SF10F007	Plant configuration alignment with design requirements	To implement training for engineering and trade staff on design basis impacts that may result from field decision making.

4.1.4 Moderator Water Replacement

According to page 94 of the transcript from the January 26, 2022, Public Hearing, the Commission expressed interest in the IIP action for the replacement of tritiated moderator water.

NB Power committed, in the PSR-2 IIP, to replace the existing moderator water with heavy water that has a lower tritium content. The tritium content of the existing moderator water is still within the safety analysis limit but may pose an elevated radiation risk. This replacement will reduce the source term which would minimize the risk from potential tritium uptakes while working on the moderator system. This category 2 IIP action demonstrates the application of the As Low as Reasonably Achievable (ALARA) principle [9].

NB Power proposes to store the used moderator water in an on-site storage facility. CNSC staff have informed NB Power that the proposed project for the construction of the storage facility shall comply with all applicable safety and security control measures [10].

CNSC staff will perform regulatory oversight of the project as more details become available, including the specific location, design, and operation of the storage facility. The replacement of tritiated moderator water is scheduled for 2028.

4.1.5 Heat Transport Pump Replacement

According to page 99 of the transcript from the January 26, 2022, Public Hearing, the Commission expressed interest in detailed timelines and descriptions on heat transport pump replacements.

During PSR-2, NB Power identified the rewind or replacement of the PHT pump motors as a category 4 IIP item. NB Power addressed this item by incorporating it into the long-term asset management (LTAM) plan, according to REGDOC-2.6.3, *Fitness for Service – Aging Management*.

Through regular surveillance activities, CNSC staff maintain regulatory oversight of NB Power's LTAM plan which states that NB Power plans to rewind the PHT pump motors in upcoming planned maintenance outages, between 2022 and 2026.

4.2 Seismic Hazard

According to page 101 of the transcript from the January 26, 2022, Public Hearing, the Commission asked NRCan the following:

- *Concerning the updated PSA submitted by NB Power, has the seismic hazard assessment shown greater concern, reduced margin, or remained the same?*
- *What is the implication of NB Power operating without a formal seismic qualification program?*

At the last licensing hearing for Point Lepreau NGS in 2017 [11][12][13], there was extensive interest and discussion of seismic risk and probabilistic safety assessments (PSA). Point Lepreau NGS PSA has been recently updated and the Commission requested the perspective of National Resources Canada (NRCan) on the seismic risk in the PSA updates.

The following sections provide additional information.

4.2.1 Seismic PSA Assessment and Risk

Seismic Hazard

National Resources Canada (NRCan) was requested to review the Probabilistic Seismic Hazard Assessment (PSHA) for Point Lepreau NGS, considering the most up to date developments in seismic hazard assessments. NRCan's conclusion [14] was that the Point Lepreau NGS PSHA continues to provide a valid assessment of the seismic hazard for a 1 in 10,000 year return period and that the Point Lepreau NGS PSHA estimates are similar to NRCan's 2020 results.

2021 Seismic PSA Update

In the 2021 PSA update, Level 1 and 2 Seismic PSA continued to meet safety goals for Severe Core Damage Frequency (SCDF) and Large Release Frequency (LRF).

CNSC staff note that the seismic CDF is 9.93E-06 (per reactor year) and the seismic LRF is 2.50E-06 occ./yr. The estimated SCDF and LRF are well below NBP's safety goals (1E-04 for CDF and 1E-05 for LRF). Overall Staff are satisfied with NB Power submission as compliant with REGDOC-2.4.2, *Probabilistic Safety Assessment (PSA) for Nuclear Power Plants* and the accepted methodology.

4.2.2 Seismic Qualification Program

NB Power's management system is process based and as result, the elements of a seismic qualification program exist, and are documented, within various processes rather than in one governance program document.

CNSC staff have confirmed that there are no concerns regarding the existing seismic processes or seismic qualification of structures, systems, and components at Point Lepreau NGS due to the absence of a formal Seismic Qualification Program governance document.

In accordance with CSA N289.1-18; *General Requirements for Seismic Design and Qualification of Nuclear Power Plants*, NB Power is developing a seismic qualification governance document, by consolidating the seismic qualification elements for Point Lepreau NGS, as part of continuous improvement.

As outlined in the Part 1 CMD 22-H2, NB Power submitted an implementation plan and CNSC staff reviewed the submission and confirmed that there were no concerns.

4.3 Steam Generators

According to page 99 of the transcript from the January 26, 2022, Public Hearing, the Commission expressed interest in being provided information on:

- *boiler (steam generator) chemistry*
- *whether the boilers were replaced during refurbishment in 2012*
- *the intended lifespan of the boilers at this point*

Details of this request are given below in sections 4.3.1 and 4.3.2.

4.3.1 Steam Generator Chemistry

An effective chemistry program for the primary side and secondary side of the plant is an important mechanism for maintaining the integrity of steam generators.

CSA N286-12, *Management system requirements for nuclear facilities* requires a nuclear power plant operator to have a chemistry program in place. The main objectives of the program are to:

- minimize corrosion within the systems
- reduce deposition on fuel element surface
- prevent situations that pose an immediate risk to safety
- minimize worker radiation exposure caused by the activation of impurities in the core
- reduce the impact on the environment by lowering radioactive and chemical releases

In the primary heat transport system (PHTS), chemicals are used to control the pH of the water and remove oxygen to minimize corrosion, primarily the corrosion of the carbon steel, zirconium, and alloy surfaces. To reach that objective, the pH must be kept alkaline, that is, at a high pH, by adding lithium hydroxide. Also, hydrogen gas is added in the system to mitigate the production of oxidizing species, and further reduce the potential for corrosion. The purification system within the PHTS collects impurities and controls alkalinity.

In the secondary side of the heat transport system, the chemical, morpholine, is used to control pH and the chemical, hydrazine, is added to remove oxygen and hence prevent corrosion.

The materials in the steam generators must be protected by minimizing potential impurities. Iron can enter the steam generator as a corrosion product and can accumulate as “boiler sludge” which needs to be periodically removed through a physical or chemical procedure.

REGDOC 3.1.1, *Reporting Requirements for Nuclear Power Plants*, requires licensees to report on several chemistry parameters. They are divided in two safety performance indicators, chemistry index (CI) and chemistry compliance index (CCI). The CI is the percentage of time that the selected chemical

parameters are within specification. It quantifies the long-term control of important chemical parameters. The CI is used to determine long-term risks on safety-related systems, including corrosion. The CCI is the percentage of time that the selected chemical parameters are within the licensees' specifications for guaranteed shutdown state (GSS) and non-GSS conditions. The CCI parameters are selected based on potential immediate risks to safety if these parameters are out of specification.

Based on NB Power REGDOC 3.1.1 reports and CNSC compliance verification activities, CNSC staff confirm that NB Power has an acceptable chemistry control program that meets the specifications for determining long-term risks on safety-related systems, including corrosion, and for confirming that the steam generators are fit for service.

4.3.2 Steam Generator Refurbishment and Lifespan

CNSC staff confirmed that the steam generators (boilers) were not replaced during the refurbishment outage in 2012 since they were assessed as fit for service for the life extension period. The steam generators are currently fit for service and will continue to be fit for service until NB Power inspections show early signs of deterioration in the steam generator tubes. There is no prescribed lifespan of the steam generators, and its continued operation is dependent on the predicted fitness for service which is determined through periodic inspections during maintenance outages.

CNSC staff confirmed that NB Power maintains the integrity of the steam generators through effective chemistry control management of the primary heat transport system and the secondary side, as well as by performing preventative maintenance to remove deposits contributing to boiler tube stress corrosion cracking through boiler lancing.

The results from the most recent inspection and maintenance outages in 2016, 2018, and 2020, demonstrated that the condition of Point Lepreau NGS steam generators are acceptable for continued safe operations.

NB Power has a life cycle management plan in place for the steam generators that outlines the requirements for inspections and the associated frequency. During the current operating licence period, NB Power updated the steam generator life cycle management plan and inspected all four-steam generators. Those inspections found no evidence of stress corrosion cracking in Alloy 800 steam generator tubing. The results of these inspections confirm that the life cycle management program continues to be appropriate for maintaining fitness for service of the steam generators.

As required by CSA N285.4-14; *Periodic Inspection of CANDU Nuclear Power Plant Components*, NB Power has performed operational assessments for all active degradation mechanisms and determined that the steam generators are fit-for-service. NB Power's assessment of the inspection results demonstrated that the integrity of the tubes and support structures are adequate and that there are no

active degradation mechanisms that will challenge the integrity of the steam generators.

CNSC staff confirmed that operational assessment for all active degradation mechanisms, including straight leg and U-bend fretting showed that all four-steam generators remain fit for service.

4.4 Climate Change

According to page 72 of the transcript from the January 26, 2022, Public Hearing, Commission members mentioned that the climate is changing fairly radically. Commission wanted to know how climate change factors are considered with regards to long term operations.

CNSC staff evaluate whether licensees of NPPs have considered climate change impacts primarily through environmental and safety assessments. The review of climate change impacts has not been a specific consideration in recommendations regarding licence duration since the impacts of climate change are assessed at a regular frequency throughout the licence lifecycle, regardless of the licence duration.

Climate change is addressed through periodic assessments using various regulatory mechanisms. These periodic assessments include primarily, the PSRs that licensees are required to complete every 10 years as per REGDOC-2.3.3, *Periodic Safety Reviews*. The PSR includes a Safety Factor Report on Hazard Analysis to determine the adequacy of protection of the plant against internal and external hazards, with account taken of the plant design, site characteristics, the actual condition of the systems, structures, and components (SSC) important to safety. The Periodic Safety Review is forward-looking. Licensees are required to identify potentially lifetime-limiting features of the plant, and to determine reasonable and practical improvements to ensure safety until the next PSR or, where appropriate, until the end of commercial operation.

Furthermore, in accordance with REGDOC-2.4.2, *Probabilistic Safety Assessment (PSA) for Nuclear Power Plants*, licensees must update the PSA every five years. PSAs use the most up-to-date hazard information such as seismic, high wind, and flood hazard assessments. In parallel to updating the PSAs every 5 years, licensees submit a Hazards Screening Analysis which looks at the different internal and external hazards and their impact on the station.

In addition to this, licensees are required to conduct an environmental risk assessment (ERA) and update it every 5 years, in accordance with CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* and REGDOC 2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures*.

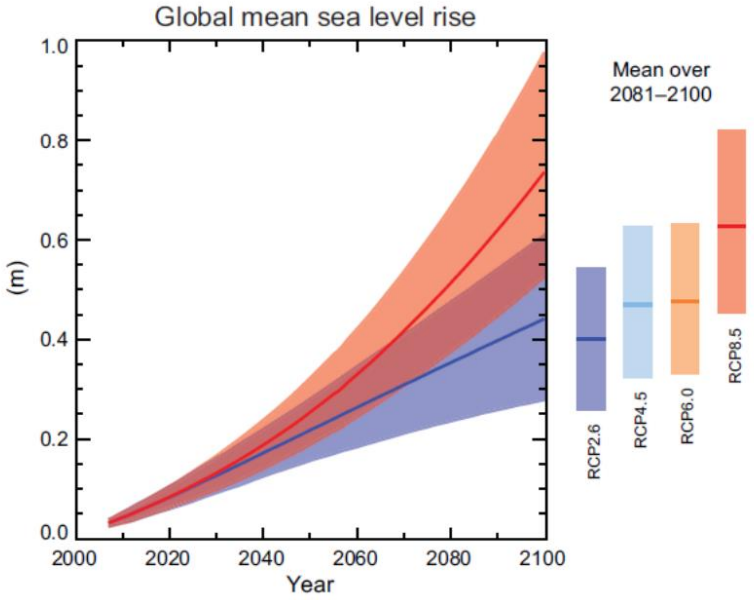
The ERA evaluates the facility's impact to the environment under normal operating conditions, but with each sequential update, it also factors in any changing environmental conditions that could be attributed to climate change. In this way, the ERA evaluates the evolving nature of the impact of the facility on the environment, with built-in conservativisms that enable ERA conclusions to

remain valid over the 5-year period before another review and update are required.

Specific to NB Power, CNSC staff examined the licensee's climate resilience. As an example of the conservativism in the assessment, the worst-case emission scenario climate model [15] projects that global mean sea level will likely rise by ~0.8 metres by 2100, as shown in Figure 2 below. CNSC staff conservatively assumed one (1) metre of sea water level rise at the Bay of Fundy when reviewing NB Power's tsunami flood hazard assessment for the Point Lepreau NGS. CNSC staff conservatively applied the 80-year projected climate change effects on tsunami flood to the proposed 20-year licence period and concluded that Point Lepreau NGS is protected from potential external flood hazards and is resilient to the current and projected climate change conditions.

Therefore, there are no expected safety impacts related to climate change over the proposed 20-year licence period.

Figure 2: Global mean sea-level rise estimates [16]



4.5 CANDU Safety Issues

According to page 102 of the transcript from the January 26, 2022, Public Hearing, Commission members expressed interest in the three remaining category three CANDU Safety Issues (CSI) and when they are likely to get resolved.

CSIs were safety issues developed using the IAEA TECDOC 1554, *Generic Safety Issues for Nuclear Power Plants with Pressurized Heavy Water Reactors and Measures for their Resolution* [17]. It was defined as "an issue related to the design or analysis of NPPs that has been identified as potentially challenging to safety functions, safety barriers, or both" [18]. These CSIs were classified into 3 categories as described in Table 8 below.

Table 8: Categorization of CANDU safety issues

Category	Description
1	The issue may be dropped if the issue does not meet the definition of a safety issue, or if the issue has been satisfactorily addressed in Canada.
2	The safety issue is a concern in Canada - appropriate measures are in place to maintain safety margins.
3	The issue is a concern in Canada - measures are in place to maintain safety margins, but the adequacy of these measures needs to be confirmed.

The three remaining category 3 CANDU Safety Issues (CSI) for NB Power are outlined below:

1. AA9 - analysis for void reactivity coefficient
2. PF9 - fuel behaviour in high temperature transients
3. PF10 - fuel behaviour in power pulse transients

The three CSIs were raised to the CANDU industry to specifically address the CANDU large break loss of coolant accident (LBLOCA) safety margin issues. The industry has chosen a Composite Analytical Approach (CAA) to address these issues.

A key aspect of the CAA is to reclassify a portion of LBLOCA scenarios from the design basis accident (DBA) category to the beyond design basis accident (BDBA) category. Such reclassification would justify the use of a realistic analysis approach, in lieu of the traditional conservative analysis approach, to estimate the BDBA-LBLOCA consequences. The LBLOCA reclassification is based on an argument that large breaks of large pipes are of very low probability.

The industry has made progress in developing the CAA, with Bruce Power leading the implementation of this approach. While the Bruce B new LBLOCA analysis using the CAA is still under regulatory assessment, CNSC staff accepted in 2020 Bruce Power's request to re-categorize the three LBLOCA related CSIs from Category 3 to Category 2, based on the estimated low likelihood of large breaks in large pipes. CNSC staff are prepared to consider similar requests from other licensees, on the technical merits of analyses supporting such requests.

CNSC staff understand that NB Power intends to follow the same approach, and to utilize aspects of the CAA in a future request for re-categorization of these Category-3 CSIs. NB Power plans to complete its pipe break frequency analysis by September 2022, followed by a final LBLOCA analysis in mid-2023.

CNSC staff will consider NB Power's request for re-categorization of these CSIs, upon NB Power's successful completion of the aforementioned analyses.

4.6 Pressure Boundary Authorized Inspection Agency

According to page 102 of the transcript from the January 26, 2022, Public Hearing, Commission members expressed interest in receiving an update on the authorized inspection agency not following the CSA standard.

In accordance with Licence Condition 5.2, NB Power maintains a pressure boundary program in compliance with CSA N285.0: *General Requirements For Pressure-Retaining Systems And Components In CANDU Nuclear Power Plants/Material Standards For Reactor Components For CANDU Nuclear Power Plants* and has in place a formal service agreement with an Authorized Inspection Agency (AIA) which is the Technical Inspection Services Branch of New Brunswick Department of Public Safety (NBDPS). NBDPS is also the jurisdictional authority for Boilers, Pressure Vessels, and Pressure Piping systems in the Province of New Brunswick.

NBDPS has recently developed and implemented a CSA N285.0-based AIA quality program to replace their former ASME-based program. The new program is specifically developed to address the AIA inspection activities for an operating CANDU NPP (e.g. for repairs, replacements, modifications of existing pressure boundary components) which must meet CSA N285.0 [19][20][21], whereas an ASME AIA program is developed for AIA inspection activities for the construction or fabrication of new components (e.g. valves, vessels, heat exchangers) that bear the "ASME" markings or symbols.

Jurisdictions which have ASME certified component fabrication shops in their province, can utilize their established ASME-based AIA program to cover the inspection activities at the CANDU NPPs in the province. The province of New Brunswick no longer has any active resident manufacturers of ASME components, such that it became impracticable for NBDPS to maintain an ASME AIA program. The CSA-based AIA quality program essentially replicates the ASME AIA program, including duties, qualifications, and program elements, with adaptations for the activities at an in-service CANDU NPP.

4.7 Primary Heat Transport System Foreign Material and Fuel Defects

According to pages 99, 100 and 103 of the transcript from the January 26, 2022, Public Hearing, Commission members expressed interest in being updated on the situation with the fuel defects, and in particular on the following:

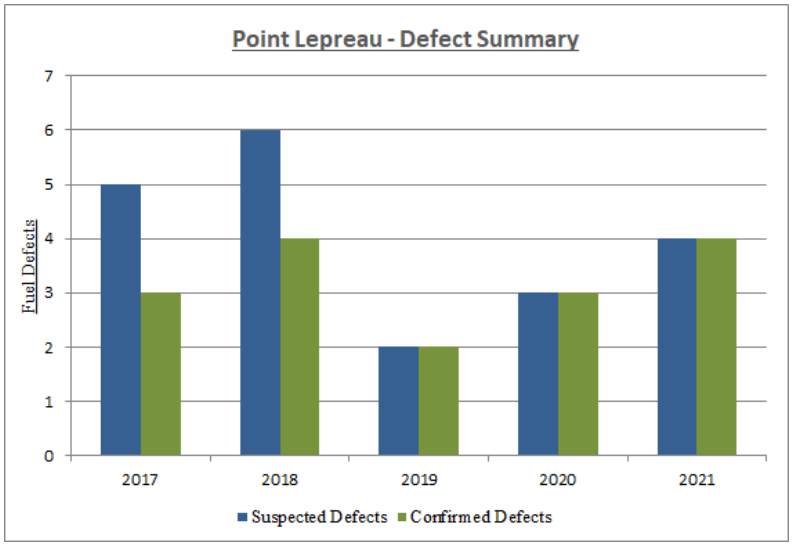
- *Foreign material in the Primary Heat Transport System.*
- *What NB Power is doing to mitigate the situation.*
- *The stability of the fuel defect situation given the presence of foreign material.*

CNSC staff reviewed the Point Lepreau NGS Report on Fuel Monitoring and Inspection each year and verified that fuel performance was adequate, and that NB Power complied with fuel operating limits.

CNSC staff requested that NB Power provide their strategy to address the elevated fuel defect rates at the Point Lepreau NGS, which had trended above the expected rate of 1 defect per unit per year as shown in Figure 3: Fuel defects during current licensing period. NB Power clarified that the fuel defects may have been caused by foreign material introduced by outage work on the primary heat transport system in loop 2. CNSC staff confirmed that NB Power has established a response strategy including increased fuel inspections and is working with a third party to address the root cause of the issue.

CNSC staff note that the fuel defects are normally located and discharged within 3 months of becoming defective. The defects are small, and the I-131 limits have not been exceeded. Figure 3: Fuel defects during current licensing period reflects the number of fuel defects which were detected by monitoring the PHT radionuclide concentrations (suspect defects) and the number of defects confirmed by fuel bay visual inspections (confirmed defects). Inspections in the fuel bay have observed some fuel bundles with small wire like pieces of debris trapped in them.

Figure 3: Fuel defects during current licensing period



Even though the defect rate is higher than the typical one per unit per year, it is still low. Historically, debris in the PHTS has not been "removed" by any dedicated means. Early industry attempts at using strainers failed because the strainers degraded and produced more debris. Over time, the PHT pumps will typically break up the debris into smaller pieces which will be less damaging to the fuel, with some debris settling out into low flow sections of the system, and some will be removed from the system through fueling actions. It typically takes 5-8 years for the system to "self-clean" and return to normal.

NB Power has implemented a number of strategies to address the elevated fuel defects including:

- an increased focus on foreign material exclusion (FME)

- increased awareness for inspecting for foreign material during maintenance activities
- development of enhanced in-bay spent fuel inspection capabilities
- enhanced monitoring and inspections of discharged fuel

CNSC staff have requested that an update on the FME strategy be included in the 2021 fuel report due in April 2022 from NB Power. CNSC staff will continue to monitor the frequency of defects and the efficacy of the corrective actions.

4.8 Reduction of Low and Intermediate Level Waste

According to page 103 of the transcript from the January 26, 2022, Public Hearing, Commission members expressed interest in receiving more details on what is being planned and implemented for waste management, in particular, reduction of low- and intermediate level waste.

NB Power is required to implement and maintain a program for waste management that includes strategies for waste minimization. This includes low- and intermediate-level waste which is required to be managed in accordance with CSA N292.3, *Management of Low and Intermediate-Level Radioactive Waste*. NB Power's waste management program objectives include characterization of its waste and minimizing the production of waste taking into consideration the health and safety of workers and the environment.

To reduce the volume of radioactive waste in storage at the Solid Radioactive Waste Management Facility (SRWMF), NB Power transports waste from Phase 1 (low and intermediate operational waste) off-site for processing and volume reduction activities (i.e., incineration, melting and compaction). The volume reduced waste is then returned to NB Power to be safely stored in the SRWMF. CNSC staff monitor waste management activities, including the transport of radioactive wastes, and verify SRWMF waste inventory through oversight activities including reviews of the SRWMF quarterly reports and inspections.

4.9 Potassium Iodide Pill Distribution Plan

According to page 98 of the transcript from the January 26, 2022, Public Hearing, Commission members expressed interest in the KI pill distribution plan for New Brunswick, given the interest in KI pill distribution in Ontario.

In the event of a nuclear emergency, potassium iodide (KI) is effective in reducing the risk of thyroid cancer to residents' potential of inhaling or ingesting radioactive iodine. CNSC regulatory document REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response* includes requirements for licensees to provide the necessary resources and support to provincial and regional authorities to ensure a sufficient quantity of iodine thyroid-blocking agents, such as KI pills, are pre-distributed to all residences, businesses, and institutions within the designated plume exposure planning zone (typically 8 to 16 km from the NPP). Regional, municipal, and provincial authorities responsible for emergency

management, such as New Brunswick Emergency Management Organization (NBEMO), facilitate the pre-distribution of KI pills.

NBEMO recently conducted a door-to-door campaign to update household information from the Demographic Public Safety Survey Database. Concurrently, NBEMO refreshed their Potassium Iodide inventory and redistributed pills and instructions to all residences within 20 km of the station. The NBEMO Warden Service provides a visible presence in the community and assists in disseminating safety information to the public. Within 20 km of the station, there is one school that was also provided with KI pills.

CNSC staff are satisfied with the availability of KI pills and the planning for KI distribution in the unlikely event of a nuclear emergency at Point Lepreau NGS.

4.10 Fisheries Act Authorization

According to page 89 of the transcript from the January 26, 2022, Public Hearing, Commission members expressed interest in the status of NB Power's Fisheries Act Authorization.

The purpose of the Fisheries Act is to provide a framework for the proper management and control of fisheries; and the conservation and protection of fish and fish habitat, including by preventing pollution. The process for obtaining a Fisheries Act Authorization (FAA) is separate from the CNSC licence renewal process, as they are covered by different legislation. The Fisheries Act uses a different test than the environmental protection requirements of the NSCA and federal environmental review legislation.

In a memorandum of understanding signed between CNSC and the Department of Fisheries and Oceans (DFO) outlining areas for cooperation and administration of the Fisheries Act, DFO remains accountable for issuing Fisheries Act authorizations including approving any offset measures.

NB Power's proposed authorization offset project underwent a provincial environmental impact assessment. On February 15, 2022, the New Brunswick Minister of Environment and Climate Change issued a Certificate of Determination for the Milltown Generating Station Decommissioning Project allowing the offset project to proceed subject to conditions.

Included among the 25 conditions of the Decision Statement are conditions involving timelines. For example, one condition states that the dam removal must start within three years of the date of the determination (i.e., February 25, 2022), and another condition requires NB Power to register, again, under the provincial environmental impact assessment regulations if the removal project becomes inactive for a period of 5 years or more.

DFO will consider the outcome of the provincial environmental impact assessment process and consult with interested Indigenous Nations and communities on NB Power's application for a Fisheries Act authorization. DFO's decision regarding the authorization will be made within 90 days following the completion of Indigenous consultation.

4.11 Compliance Verification Schedule

According to page 100 of the transcript from the January 26, 2022, Public Hearing, Commission members requested more details with regards to future compliance verification activities referenced by CNSC staff in CMD 22-H2. The Commission was also interested to know if there was a detailed schedule, details about it, and how it might be presented to the Commission and to the public.

CMD 22-H2 includes several references to future compliance activities including verifying the implementation of IIP actions, corrective actions, and new or updated regulatory requirements. CNSC staff perform compliance activities in accordance with the compliance program for NPPs. There are a number of compliance verification activities that can be utilized, including, but not limited to:

- type I, type II, field, and desktop inspections
- compliance assessments
- surveillance activities

CNSC staff have established a baseline compliance plan which consists of the set of compliance verification activities to be conducted on an operating nuclear power plant over a 5-year period. It is intended to collect sufficient data for CNSC staff to maintain confidence in the continued compliance of the licensee and to identify issues, if any, at an early stage. The baseline compliance plan focuses on the most risk significant areas across all 14 safety and control areas and includes a combination of type II and field inspections.

The CNSC annual planning process requires that the annual inspection plan is developed by including compliance verification activities from the 5-year baseline compliance plan and any additional inspections that may be deemed necessary. The inspection plan considers key inputs such as the licensing basis, licensee performance, events, major projects, follow up from compliance assessments and the implementation of new requirements. The annual inspection plans include baseline inspections such as type II and field inspections and additional inspections such as type I and desktop inspections if deemed necessary. Reactive compliance verification activities may be added at any time as necessary.

CNSC staff perform compliance assessments throughout the licensing period including planned periodic assessments and unplanned assessments. CMD 22-H2 refers to performing future compliance verification activities to assess the implementation of IIP actions. CNSC staff use compliance assessments to assess IIP actions once the licensee informs CNSC staff that the action is complete and submits a request for closure of the action.

NB Power has submitted a request to close 291 IIP actions to date. CNSC staff have reviewed and closed 195 actions and are currently assessing the remaining 96 actions. NB Power intends to provide an annual update on the status of the remaining IIP actions and will request closure for the completed actions. CNSC staff will perform compliance assessments once NB Power submits a request to

close the remaining IIP actions. CNSC staff will determine if additional compliance activities such as inspections are required based on their assessment.

The LCH can be updated throughout the licensing period to facilitate the incorporation of new or updated regulatory requirements, such as regulatory documents, when they are approved by the Commission. Licensees are typically required to implement the new or updated regulatory requirements within a specified timeframe. CNSC staff perform compliance verification activities to confirm implementation, such as inspections or compliance assessments.

CMD 22-H2 refers to some instances where CNSC staff will perform future compliance verification activities to confirm the implementation of the new or updated requirements. For example, NB Power is required to fully implement the regulatory document, REGDOC 2.2.4, *Fitness for Duty: Managing Worker Fatigue*. CNSC staff have planned a type I inspection to confirm the implementation as part of the annual inspection plan for fiscal year 2022-2023.

The annual inspection plan for NB Power for fiscal year 2022-2023, was developed in 2021 and provided to the licensees on February 3, 2022 [22].

Table 9 outlines the inspections planned for FY 2022-2023. The details of the annual plans can be made publicly available upon request. CNSC staff routinely share inspection information during engagement meetings with Indigenous Nations, communities and representative organizations, and members of the public.

The fiscal year 2022-2023 is the fifth year of the current 5-year baseline. As such, this annual inspection plan encompasses all of the remaining inspections on the 5-year baseline. It can also include additional inspections that are required to verify licensee performance in specific areas, corrective actions taken and the implementation of new or updated regulatory requirements. If reactive inspections are required to be added to the plan or inspections are removed or deferred, justifications will be documented and approved.

Presently, CNSC staff are in the process of developing the next 5-year baseline. The new baseline incorporates lessons learned from past baselines and will be used to develop the fiscal year 2023-2024 annual inspection plan. Future annual inspection plans take into consideration the inspections required by the 5-year baseline plan, licensee performance including results from past inspections, results from IIP assessments, and the implementation of new or updated regulatory requirements. Many of these elements may be captured within the scope of compliance verification activities on the 5-year baseline plan. Additional inspections may be conducted at any time.

Table 9: Point Lepreau Regulatory Program Annual Compliance Verification Plan FY 2022-2023

Title	Activity
Conventional Health and Safety	Field Inspection
Emergency Drills - Role Specific	Field Inspection
Emergency Mitigation Equipment Deployment	Field Inspection
Emergency Response Facilities and Equipment	Field Inspection
Fire Brigade Drills	Field Inspection
Fire Response Facilities and Equipment	Field Inspection
Offsite Support Equipment and Services - Facility Specific	Field Inspection
Effluent Control and Monitoring	Field Inspection
Effluent Control and Monitoring	Type II Inspection
Environmental Monitoring equipment/analysis	Field Inspection
Hazardous Waste	Field Inspection
Aging Management	Type II Inspection
Chemical Dosing Systems and On-line chemical analyzers	Field Inspection
Chemical Storage	Field Inspection
Instrumentation and Control Calibration	Field Inspection
Maintenance - SSC Monitoring	Field Inspection
Maintenance - Work Execution	Field Inspection
Periodic Inspection Program	Type II Inspection
System Inspections - Safety-related Systems & Special Safety Systems & Standby Support Systems	Type II Inspection
Certified Training Programs	Type II Inspection

Title	Activity
Design and Development of Knowledge-based Certification Examinations and Requalification Tests	Desktop Inspection
Design and Development of Simulator Examinations and Requalification Tests	Desktop Inspection
Human Factors in Design	Desktop Inspection
Human Performance Program	Field Inspection
Minimum Shift Complement Monitoring	Field Inspection
Minimum Shift Complement Verification	Field Inspection
Observation of training activities (OJT, oversight committees, training delivery, etc.)	Field Inspection
Programmatic review of implementation of REGDOC-2.2.4, *Fitness for Duty: Managing Worker Fatigue*	Type I Programmatic Inspection
SAT review of Training program for selected job family	Desktop Inspection
Simulator Examinations (conduct) and Requalification Tests (Conduct and grading)	Type II Inspection
Configuration Management	Field Inspection
Contractor Management	Field Inspection
Engineering Change Control	Field Inspection
Problem and Event Cause and Resolution Effectiveness Investigation and trend analysis	Type II Inspection
Self-assessment (Internal Audits, Self-Assessments) of CAP	Field Inspection
Supply Management	Field Inspection
Operational Field Inspections	Field Inspection
Outage Inspection (GSS, HS, Start-up, Maintenance, HP-TII-3A)	Type II Inspection
Procedure adherence and validation	Field Inspection
Quarterly Inspection Report	Type II Inspection

Title	Activity
Safe Operating Envelope (SOE) systems parameters or performance	Field Inspection
Packaging and Transport (documentation and shipping)	Field Inspection
Environmental Qualification	Type II Inspection
Fire Protection - code verification, fire safety shutdown assessment, fire safety analysis, fire equipment testing	Field Inspection
Seismic	Type II Inspection
ALARA - Engineering Controls	Field Inspection
ALARA - Post-Job Reviews	Field Inspection
Radiological Hazard Control	Type II Inspection
Radiological Hazard Control - Engineering Controls	Field Inspection
Radiological Hazard Control - Monitoring Equipment	Field Inspection
Radiological Hazard Control - Movement	Field Inspection
Radiological Hazard Control - Zones	Field Inspection
Worker Dose Control - Dosimetry	Field Inspection
Worker Dose Control - Practices	Field Inspection
Worker Dose Control - Qual On-Boarding	Field Inspection
Worker Dose Control - Work Planning	Field Inspection
Participation/Facilitation in announced IAEA inspections	Field Inspection
Site Security Facilities and equipment	Field Inspection
Site Security Practices	Field Inspection
Site Security Response Arrangements	Field Inspection
Waste Handling Practices	Field Inspection

4.12 Safety Culture Assessment

According to page 102 of the Point Lepreau NGS Licence Renewal Part 1 Commission Proceeding transcript, the Commission expressed interest in the recent NB Power safety culture assessment that occurred at Point Lepreau NGS.

CNSC regulatory document REGDOC-2.1.2, *Safety Culture* was published in 2018 and establishes requirements and guidance for licensees related to safety culture. Under REGDOC-2.1.2, licensees are to document their commitment to fostering safety culture and to conduct comprehensive, systematic and rigorous safety culture assessments at least every five years.

In May of 2019, NB Power committed to update its governing documents and conduct a safety culture self-assessment by the end of 2021 [23]. CNSC staff confirmed that NB Power met their commitment and is implementing corrective actions. The results of the safety culture assessment will be reviewed by CNSC staff in upcoming compliance verification activities. REGDOC 2.1.2 will be added to the Compliance Verification Criteria of the Licence Conditions Handbook (LCH) for licence condition 1.1, Management System and will be implemented as of July 1, 2022.

Throughout the proposed licensing period, CNSC staff will continue performing regulatory oversight including compliance verification activities to confirm that NB Power remains committed to fostering a healthy safety culture.

4.13 International Atomic Energy Agency Visits

According to page 98 of the transcript from the January 26, 2022, Public Hearing, Commission members requested more details with regards to IAEA visits to the Point Lepreau NGS and specifically:

- *How many IAEA visits they had during the present licensing period?*
- *What were the issues that were found and how were they mitigated?*

The International Atomic Energy Agency (IAEA) verifies all nuclear material inventories and nuclear material transfers at Point Lepreau NGS through an approach based on inspections and installed equipment. The IAEA performs four different types of inspections at the Point Lepreau NGS:

- short notice random inspection (SNRI)
- unannounced inspection (UI)
- design information verification (DIV)
- physical inventory verification (PIV)

These inspection types are differentiated by the type and intensity of activities and the notification provided under the safeguards agreements to the CNSC and to the operator. The total number of IAEA inspections at Point Lepreau NGS for the current licensing period are detailed in

Table 10.

Table 10: Total number of IAEA inspections during the licensing period

Year	SNRI	UI	DIV	PIV	*CA
2017 (Jul to Dec)	1	4	1	1	0
2018	1	4	1	1	1
2019	1	5	1	1	0
2020	1	0	1	1	0
2021	1	5	1	1	0

*CA - Complementary Access

In addition to these inspections, the IAEA may also perform complementary access (CA) on short notice. CA is an IAEA activity performed to assure the absence of undeclared nuclear material or activities. The IAEA may also conduct scheduled visits to perform maintenance of its installed and remotely monitored equipment (integrated fuel monitoring system, gamma detectors, and surveillance cameras). During the current licence period, the IAEA encountered issues on two UIs. The first issue was delayed access to the site, which did not negatively impact on the results of the inspection. The second issue was the IAEA's inability to appropriately implement UIs during June 2021 due to provincial COVID restrictions. To recover from this, follow-up verification is planned for July 2022, which is expected to resolve the issue. The IAEA also identified an error in the inventory list provided to the inspectors during a SNRI in 2020. The implicated items were subsequently verified and there was no negative impact on the results of the inspection.

4.14 Public Information Disclosure Program

According to pages 102 and 103 of the transcript from the January 26, 2022, Public Hearing, Commission members requested more information regarding CNSC staff perspectives on NB Power's public information and disclosure program. The Commission also wanted to know if:

- *NB Power has a program consistent with CNSC expectations*
- *there are any details around the latest public polling of NB Power's operations*

Responses to this request are given below in sections 4.14.1 and 4.14.2.

4.14.1 NB Power Public Information and Disclosure Program

A public information and disclosure program (PIDP) is a regulatory requirement for Class I nuclear facilities. In REGDOC-3.2.1, *Public Information and Disclosure*, the goal of the PIDP is to ensure that information related to the health, safety and security of persons and the environment, and other issues associated with the life cycle of nuclear facilities are effectively communicated to the public.

In 2017, CNSC staff conducted an inspection that resulted in one recommendation and two action notices [24]. The recommendation was to complete a self-assessment in 2019, which has since been completed, and feedback implemented in the revised program for 2020. One action notice required the implementation of a corrective action plan to improve process documentation associated with the PIDP. The second action notice required NB Power to develop a corrective action plan to document the results of engagement activity reviews to ensure continuous improvement of NB Power's PIDP. These actions were completed and CNSC is satisfied with the ongoing engagement with NB Power's target audiences [25].

CNSC staff continue to engage with NB Power on a regular basis for verbal updates on their engagement activities, themes identified from their audiences and implementation of new products developed with and for their key audiences. CNSC staff continue to ensure NB Power documents these updates for future planning and to ensure knowledge is not lost through succession of employees.

4.14.2 NB Power Public Polling

NB Power conducts annual public polling and incorporates the results in their public information and disclosure program.

As part of the annual program review, NB Power presents a summary of the independent public polling results to CNSC staff which confirm stable public confidence. NB Power's annual polling encompasses elements related to the utility as a whole and has evolved over the years to gain a better understanding of concerns and interests of diverse audiences in various facets of the electrical utility from electricity rates to hydro to nuclear.

The public survey covers the entire province including Indigenous Nations and communities. A new poll this year is targeting the immediate surrounding communities to validate their interests and potential concerns.

4.15 Conclusion

CNSC staff confirm that the topics discussed in this CMD were assessed, as part of the review of NB Power's licence renewal application for the Point Lepreau NGS. The assessment allowed CNSC staff to conclude that there are no safety concerns.

5. OVERALL CONCLUSION

In this CMD, CNSC staff provided information regarding the topics of interest raised by the Commission during the Part 1 Point Lepreau Nuclear Generating Station Licence Renewal Commission hearing, held on January 26, 2022.

CNSC staff's conclusions and recommendations remain unchanged (as documented in CMD 22-H2):

With respect to paragraphs 24(4)(*a*) and (*b*) of the NSCA, CNSC staff find that the applicant provided adequate evidence to demonstrate that NB Power:

1. is qualified to carry on the activity authorized by the licence
2. will, in carrying out that activity, make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed

CNSC staff recommend the Commission:

1. renew the Point Lepreau NGS PROL authorizing NB Power to carry out the licensed activities listed in Part IV of the proposed licence for twenty (20) years from July 1, 2022, to June 30, 2042
2. accept NB Power's proposed Financial Guarantee
3. delegate the authority to CNSC staff as set out in section 5.8 of CMD 22-H2

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GLOSSARY

For definitions of terms used in this document, see REGDOC-3.6, *Glossary of CNSC Terminology*, which includes terms and definitions used in the Nuclear Safety and Control Act and the Regulations made under it, and in CNSC regulatory documents and other publications.

Additional terms and acronyms used in this CMD are listed below.

Acronym	Term
AECB	Atomic Energy and Control Board
AFRPs	Aggregate Finding Resolution Plans
AIA	Authorized Inspection Agency
ALARA	As Low as Reasonably Achievable
ASME	American Society Mechanical Engineers
AVRs	Automatic Voltage Regulators
BDBA	Beyond Design Basis Accident
BF_3	Boron Trifluoride
BPVC	Boiler Pressure Vessels Code
CA	Complementary Access
CAA	Composite Analytical Approach
CCI	Chemistry Compliance Index
CI	Chemistry Index
CSIs	CANDU-Specific Issues
D2O	Deuterium Oxide (Heavy Water)
DBA	Design Basis Accident
DBE	Design Basis Earthquake
DFO	Department of Fisheries and Oceans
DIV	Design Information Verification
ECC	Emergency Core Cooling
EIR	Event Initial Reports
EME	Emergency Mitigating Equipment
EPR	Environmental Protection Review
EPS	Emergency Power System
EQ	Environmental Qualification
FAA	Fisheries Act Authorization
FGs	Financial Guarantees
FME	Foreign Material Exclusion
GSS	Guaranteed Shutdown State
HTS	Heat Transport System
HTT	Heat Transport Temperature
IAEA	International Atomic Energy Agency
IEMP	Independent Environmental Monitoring Program
IIP	Integrated Implementation Plan
KI	Potassium Iodide
KMK	Kwilmu’kw Maw-klusuaqn

LBLOCA	Large Break Loss of Coolant Accident
LOCA	Loss of Coolant Accident
LRF	Large Release Frequency
LTAM	Long-Term Asset Management
MTI	Mi'gmawe'l Tplu'taqnn Incorporated
NBDPS	New Brunswick Department of Public Safety
NBEMO	New Brunswick Emergency Management Organization
NB Power	New Brunswick Power Corporation
NGS	Nuclear Generating Station
NPP	Nuclear Power Plant
NRCan	National Resources Canada
OPEX	Operational Experience
PARS	Passive Autocatalytic Recombiner System
PCO	Privy Council Office
PDC	Programmable Digital Comparators
PDP	Preliminary Decommissioning Plans
PHT	Primary Heat Transport
PHTS	Primary Heat Transport System
PIDP	Public Information Disclosure Program
PIV	Physical Inventory Verification
PROL	Power Reactor Operating Licence
PSA	Probabilistic Safety Assessments
PSHA	Probabilistic Seismic Hazard Assessment
PSR	Periodic Safety Review
PSR-1	Periodic Safety Review #1
PSR-2	Periodic Safety Review #2
RCW	Recirculated Cooling Water
ROB	Regulatory Operations Branch
RTD	Resistance Temperature
SCA	Safety and Control Area
SCDF	Severe Core Damage Frequency
SDS	Shutdown System
SMR	Small Modular Reactors
SNRI	Short Notice Random Inspection
SRWMF	Solid Radioactive Waste Management Facility
TK	Tank
TSB	Technical Support Branch
UI	Unannounced Inspection
WNNB	Wolastoqey Nation in New Brunswick