



Record of Decision

DEC 23-H2

In the Matter of

Applicant	Corporation de l'École Polytechnique de Montréal
Subject	Application to Renew the Non-Power Reactor Operating Licence of École Polytechnique de Montréal
Date of Decision	June 20, 2023

RECORD OF DECISION – DEC 23-H2

Applicant: Corporation de l'École Polytechnique de Montréal

Address/Location: PO Box 6079, succursale Centre-ville, Montréal, Quebec,
H3C 3A7

Purpose: Application to Renew the Non-Power Reactor Operating Licence
of École Polytechnique de Montréal

Application received: March 15, 2022

Hearing: Public hearing in writing

Panel of the Commission: M. Lacroix

Licence: Renewed

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1.0 INTRODUCTION

1. The Corporation de l'École Polytechnique de Montréal (ÉPM) applied to the Canadian Nuclear Safety Commission¹ (CNSC), under subsection 24(2) of the Nuclear Safety and Control Act² (NSCA), for a 10-year renewal of the operating licence for its SLOWPOKE-2 (Safe LOW-POwer Kritical Experiment) non-power reactor. ÉPM's current licence, PERFP-9A.01/2023, expires on June 30, 2023, and authorizes ÉPM to operate the SLOWPOKE-2 reactor and ÉPM's subcritical nuclear assembly and related facilities. The ÉPM facility is located in Montréal, Quebec, in the Kanien'keha:ka (Mohawk) traditional Indigenous territory.
2. The ÉPM SLOWPOKE-2 reactor is a non-power research reactor located in the institution's main building. The 20 kW thermal reactor is contained in a sealed chamber and submerged in a storage pool. The reactor has been in operation since 1976 and is used for research, teaching, neutron activation and isotope production.

Issues

3. The Commission is required to determine whether and what requirements the [*Impact Assessment Act*](#)³ imposes in relation to the activities included in ÉPM's application to renew the operating licence for a SLOWPOKE-2 non-power reactor. Satisfying any such requirements can be a prerequisite to licensing.
4. Pursuant to paragraphs 24(4)(a) and (b) of the NSCA, the Commission must be satisfied that:
 - a) ÉPM is qualified to carry on the activity that the licence would authorize; and
 - b) in carrying on that activity, ÉPM would 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.
5. As an agent of the Crown, the Commission recognizes its role in fulfilling the Crown's constitutional obligations, along with advancing reconciliation with Canada's Indigenous peoples. The Commission's responsibilities include the duty to consult⁴ and, where appropriate, accommodate Indigenous interests where the Crown contemplates conduct that may adversely impact potential or established Aboriginal or

¹ The *Canadian Nuclear Safety Commission* is referred to as the "CNSC" when referring to the organization and its staff in general, and as the "Commission" when referring to the tribunal component.

² S.C. 1997, c. 9.

³ S.C. 2019, c. 28, s. 1.

⁴ "Aboriginal is the term used in this document when referring to the Crown's duty to consult as that is the term used in s. 35 of the *Constitution Act, 1982*. In all other cases, "Indigenous" is the preferred terminology and used accordingly.

treaty rights.⁵ As a result, the Commission must determine what engagement and consultation steps and accommodation measures are called for, respecting Indigenous interests.

Public Hearing in Writing

6. On June 6, 2022, the Commission published a [Notice of Public Hearing and Participant Funding](#) stating that the Commission would hold a virtual public hearing regarding the renewal of ÉPM's operating licence for the SLOWPOKE-2 reactor. Because of the Public Service Alliance of Canada strike, the Commission decided to change the hearing format. The Commission published a [revised notice](#) on April 18, 2023, to notify the public of the change in format.
7. Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission, made up of Commission Member M. Lacroix, to decide on the application. The Commission, in making its decision, considered all the information submitted for the hearing in writing. The hearing was conducted in accordance with the [Canadian Nuclear Safety Commission Rules of Procedure](#).⁶ During the public hearing, the Commission considered written submissions from ÉPM ([CMD 23-H2.1](#), [CMD 23-H2.1A](#) and [CMD 23-H2.1B](#)) and CNSC staff ([CMD 23-H2](#), [CMD 23-H2.A](#), [CMD-23-H2.B](#), [CMD 23-H2.C](#)). The Commission also considered a submission from one intervenor, D. J. Winfield ([CMD 23-H2.2](#)).
8. In making its decision, the Commission sent questions to CNSC staff and ÉPM through [CMD 23-H2Q](#). The Commission requested that CNSC staff provide information on the transfer of the licence's operating limits and conditions to the Licence Conditions Handbook, on aging management of the facilities, and on the particular concerns raised in D. Winfield's submission. The Commission requested information from ÉPM about student training, safety analysis, and radiation protection. The Commission is satisfied with the completeness of the responses provided by CNSC staff ([CMD 23-H2.C](#)) and ÉPM ([CMD 23-H2.1B](#)).

Participant Funding Program

9. Pursuant to paragraph 21(1)(b.1) of the NSCA, the Commission has established a [Participant Funding Program](#) (PFP) to facilitate the participation of Indigenous Nations and communities, members of the public and stakeholders in Commission proceedings. In [June 2022](#), up to \$15,000 in funding was made available through the CNSC's PFP to review ÉPM's licence renewal application and associated documents, and to provide the Commission with value-added information through topic-specific interventions. A Funding Review Committee (FRC), independent of the CNSC, reviewed the funding applications received and [made recommendations on the allocation of funds](#). Based on

⁵ *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73; *Taku River Tlingit First Nation v. British Columbia (Project Assessment Director)*, 2004 SCC 74.

⁶ SOR/2000-211.

the recommendations from the FRC, the CNSC awarded a total of \$500 to the following applicant:

- David Winfield – up to \$500

2.0 DECISION

10. Based on its consideration of the matter, as described in more detail in the following sections of this Record of Decision, the Commission concludes the following:
 - no requirements under the [Impact Assessment Act](#) (IAA) are imposed on the Commission in this matter
 - the contemplated activities do not present any novel adverse impact on any potential or established Aboriginal claim or right
 - the Commission's responsibility to uphold the honour of the Crown and its constitutional obligations with regard to consultation respecting Indigenous interests has been satisfied
 - ÉPM is qualified to carry on the activity that the licence will authorize
 - ÉPM, in carrying on that activity, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed

Therefore,

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, renews the non-power reactor operating licence issued to the Corporation de l'École Polytechnique de Montréal for its SLOWPOKE-2 facility located in Montréal, Quebec. The renewed operating licence, PERFP-9A.00/2033, is valid from July 1, 2023, to June 30, 2033, unless suspended, amended, revoked or replaced.

11. The Commission includes in the licence the conditions as recommended by CNSC staff in [CMD 23-H2](#). The Commission also delegates authority for the purposes of licence condition 3.2, as recommended by CNSC staff. Licence conditions and the delegation of authority are further discussed in section 4.5 of this Record of Decision.
12. With this decision, the Commission directs CNSC staff to report on the performance of ÉPM and its processing facility, as part of the *Regulatory Oversight Report for Nuclear Research Reactors and Particle Accelerator Facilities*. CNSC staff shall present that report at a public proceeding of the Commission, where members of the public will be able to participate. The Commission directs CNSC staff to notify it of any changes made to the Licence Conditions Handbook through the regulatory oversight report. CNSC staff may bring any matter to the Commission's attention, as required.

3.0 APPLICABILITY OF THE *IMPACT ASSESSMENT ACT*

13. In coming to its decision, the Commission must first determine whether any requirement under the [Impact Assessment Act](#) applies to the licence renewal application and whether an impact assessment is required.
14. The [Impact Assessment Act](#) came into force on August 28, 2019. Pursuant to the [Impact Assessment Act](#) and the [Physical Activities Regulations](#)⁷ made under it, impact assessments are to be conducted in respect of projects identified as having the greatest potential for adverse environmental effects in areas of federal jurisdiction. A licence renewal is not a project designated under the [Physical Activities Regulations](#).
15. The Commission is satisfied that there is no requirement under the [Impact Assessment Act](#) for an impact assessment to be completed. The Commission is also satisfied that there are no other applicable requirements of the [Impact Assessment Act](#) to be addressed in this matter.⁸ The Commission notes that the NSCA provides a strong regulatory framework for the protection of the environment and the health and safety of persons. Environmental protection is further discussed in section 4.2.9 of this Record of Decision.

4.0 ISSUES AND COMMISSION FINDINGS

16. In making its licensing decision, the Commission considered a number of issues and submissions relating to ÉPM's qualification to carry out the licensed activities. The Commission also considered the adequacy of the proposed measures for protecting the environment, the health and safety of persons, national security and international obligations to which Canada has agreed.
17. The Commission decision focuses on the issues relevant for this application, specifically:
 - completeness of the licence application
 - ÉPM's performance in all relevant [safety and control areas](#) during the current licence period
 - Indigenous engagement and consultation
 - other matters of regulatory importance
 - licence length and conditions, including the delegation of authority

⁷ SOR/2019-285.

⁸ The [Impact Assessment Act](#) can impose other requirements on federal authorities in respect of authorizing projects that are not designated as requiring an impact assessment, including projects that are to be carried out on federal lands, or projects outside of Canada. This licence renewal does not engage any such applicable requirements under the [Impact Assessment Act](#).

4.1 Completeness of Licence Application

18. On [March 15, 2022](#), ÉPM submitted an application to renew its operating licence for the SLOWPOKE-2 non-power reactor for a period of 10 years. In its consideration of this matter, the Commission examined the completeness of the application and the adequacy of the information submitted by ÉPM, as required by the NSCA, the [General Nuclear Safety and Control Regulations](#),⁹ the [Class I Nuclear Facilities Regulations](#)¹⁰ and other applicable regulations made under the NSCA, including the [Radiation Protection Regulations](#),¹¹ the [Nuclear Security Regulations](#)¹² and the [Packaging and Transport of Nuclear Substances Regulations](#).¹³

19. The [General Nuclear Safety and Control Regulations](#) call on an applicant for a licence renewal to provide information regarding any changes in information to the CNSC as part of its application. Section 5 provides as follows:

An application for the renewal of a licence shall contain

- (a) the information required to be contained in an application for that licence by the applicable regulations made under the Act; and
- (b) a statement identifying the changes in the information that was previously submitted.

Section 7 of the [General Nuclear Safety and Control Regulations](#) states the following:

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

Section 3 of the [Class I Nuclear Facilities Regulations](#) sets out the information that must be included in a licence application for a Class I nuclear facility, and section 6 sets out the information required for an application for a licence to operate a Class I nuclear facility. Given that the SLOWPOKE reactors are considered Class I nuclear facilities, ÉPM's licence renewal application must comply with those regulatory requirements.

20. As set out in section 1.4 of CMD 23-H2, CNSC staff concluded that the information submitted in ÉPM's application is sufficient to demonstrate that appropriate safety and control measures are in place to meet CNSC regulatory requirements, and that ÉPM is qualified to operate the SLOWPOKE-2 reactor.

21. Based on the evidence presented, the Commission concludes that ÉPM's licence renewal application is complete and complies with the regulatory requirements respecting an application for licence renewal set out in the [General Nuclear Safety and Control Regulations](#) and the [Class I Nuclear Facilities Regulations](#). ÉPM's application and supporting documents identify how ÉPM will meet the regulatory requirements.

⁹ SOR/2000-202.

¹⁰ SOR/2000-204.

¹¹ SOR-2000-203.

¹² SOR/2000-209.

¹³ SOR/2015-145.

Moreover, CNSC staff's assessment demonstrates to the Commission's satisfaction how ÉPM has adequately addressed the licence renewal application requirements.

4.2 Safety and Control Areas

22. The Commission examined CNSC staff's assessment of ÉPM's performance in all 14 [safety and control areas](#) for the purpose of evaluating this licence renewal application. The Commission considered ÉPM's performance over the current licence period beginning on July 1, 2013. Throughout this licence period, CNSC staff rated ÉPM's performance in all [safety and control areas](#) as "satisfactory".

4.2.1 Management System

23. ÉPM's management system covers the framework that establishes the processes and programs required to ensure that ÉPM achieves its safety objectives, continuously monitors its performance against these objectives, and fosters a healthy safety culture. Paragraph 3(1)(k) of the [General Nuclear Safety and Control Regulations](#) states that an application for a licence shall contain information on "the applicant's organizational management structure insofar as it may bear on the applicant's compliance with the Act and the regulations made under the Act, including the internal allocation of functions, responsibilities and authority". Paragraph 3(d) of the [Class I Nuclear Facilities Regulations](#) states that an application for a licence to operate a Class I nuclear facility shall contain information on "the proposed management system for the activity to be licensed, including measures to promote and support safety culture".
24. Regulatory document [REGDOC-2.1.1, Management System](#),¹⁴ covers the development and implementation of sound management practices and controls, and regulatory document [REGDOC-2.1.2, Safety Culture](#),¹⁵ establishes requirements and guidance for fostering and assessing safety culture. CSA Group standard N286:12 (R2017), *Management System Requirements for Nuclear Facilities*,¹⁶ integrates the management system requirements for health, safety, environment, security, economics and quality.
25. In section 2.1 of CMD 23-H2.1, ÉPM described its management system, including the administrative structure of the SLOWPOKE facilities. The *Manuel d'assurance de la qualité des installations SLOWPOKE de Polytechnique Montréal* [French only], which applies to all activities and all systems, structures and components related to operating the SLOWPOKE-2 reactor, is routinely updated. ÉPM has also implemented measures to ensure business continuity, in particular in the event of a natural disaster, sabotage, labour dispute or loss of electrical power supply. ÉPM specified that its management system is compliant with CSA standard N286:12, *Management System Requirements*

¹⁴ CNSC, REGDOC-2.1.1, *Management System*, May 2019.

¹⁵ CNSC, REGDOC-2.1.2, *Safety Culture*, April 2018.

¹⁶ CSA Group, N286:12 (R2017), *Management System Requirements for Nuclear Facilities*, 2012 (reaffirmed in 2017).

for Nuclear Facilities, and with the CNSC's [REGDOC-2.1.1, Management System](#), and [REGDOC-2.1.2, Safety Culture](#).

26. In section 3.1 of document CMD 23-H2, CNSC staff recommended that ÉPM implement a management system that complies with regulatory requirements, in accordance with CSA standard N286:12 (R2017), *Management System Requirements for Nuclear Facilities*, [REGDOC-2.1.1, Management System](#), and [REGDOC-2.1.2, Safety Culture](#). CNSC staff indicated that they had assessed ÉPM's performance in this safety and control area through compliance verification activities, including 3 onsite inspections. CNSC staff noted that these inspections produced 6 management system–related notices of non-compliance¹⁷ concerning the periodic review of all programs, supplier qualification, control of outdated documents, audit schedule, updated procedures, and compliance with the regulatory commitments timeline. CNSC staff indicated that ÉPM had developed corrective action plans and had implemented its action plans in a satisfactory manner, albeit with a few delays.
27. Taking into consideration all the evidence submitted by ÉPM and assessed by CNSC staff, the Commission concludes that ÉPM has appropriate organization and management structures in place to carry on the licensed activities. The Commission finds that the information provided by ÉPM and CNSC staff demonstrates that ÉPM has acceptable programs in place to ensure that its facility achieves its safety objectives and fosters a healthy safety culture, and that an appropriate reporting process applicable to all events on which ÉPM is required to report is in place. The Commission comes to this conclusion on the following basis:
- The Commission agrees with CNSC staff's assessment that ÉPM has implemented and maintained a management system to operate the facility, and that the management system meets the requirements of CSA standard N286:12 (R2017), *Management System Requirements for Nuclear Facilities*, and [REGDOC-2.1.1, Management System](#).
 - The Commission is of the opinion that the evidence presented by ÉPM demonstrates that ÉPM has made a continued commitment to maintaining and improving its management system in accordance with regulatory requirements.
 - The Commission is of the opinion that the evidence presented by ÉPM demonstrates that it has an acceptable safety culture and a process in place to monitor safety culture in the organization, in accordance with [REGDOC-2.1.2, Safety Culture](#).
 - The Commission is satisfied with the corrective action plans developed by ÉPM and their satisfactory implementation. However, the Commission requests that ÉPM respect the timelines for implementing its action plans.

¹⁷ A non-compliance is a regulatory requirement that has not been met. When a non-compliance is identified, CNSC staff assess the significance of the non-compliance and determine appropriate enforcement action, based on the CNSC's gradual approach to enforcement.

4.2.2 Human Performance Management

28. Human performance management encompasses activities that ensure that ÉPM staff are sufficient in number in all relevant job areas and have the necessary knowledge, skills, procedures and tools in place to safely carry out their duties. As stipulated in paragraphs 12(1)(a) and (b) of the [General Nuclear Safety and Control Regulations](#), licensees shall “ensure the presence of a sufficient number of qualified workers to carry on the licensed activity safely and in accordance with the Act, the regulations made under the Act and the licence” and “train the workers to carry on the licensed activity in accordance with the Act, the regulations made under the Act and the licence”.
29. Paragraph 3(d.1) of the [Class I Nuclear Facilities Regulations](#) states that a licence application must include information on “the proposed human performance program for the activity to be licensed, including measures to ensure workers’ fitness for duty.” Paragraphs 6(m) and 6(n) state that an application for a licence to operate a Class I nuclear facility must include information on “the proposed responsibilities of and qualification requirements and training program for workers, including the procedures for the requalification of workers” and “the results that have been achieved in implementing the program for recruiting, training and qualifying workers in respect of the operation and maintenance of the nuclear facility.”
30. [REGDOC-2.2.2, Personnel Training](#),¹⁸ sets out requirements and guidance for the analysis, design, development, implementation, evaluation, documentation and management of training at nuclear facilities within Canada, including the essential principles and elements of an effective training system.
31. In section 2.2 of CMD 23-H2.1, ÉPM submitted that it has implemented a systematic approach to training for all licensed activities, in compliance with the requirements of [REGDOC-2.2.2, Personnel Training](#). These activities include providing radiation protection training to all personnel and specialized training for reactor operators, nuclear engineers and nuclear technicians, as well as organizing the work and conceptualizing the duties of reactor operators. ÉPM also stated that it had implemented programs and procedures to address human resources issues and ensure that employees are fit for duty, including with respect to fatigue management and the use of drugs or alcohol. ÉPM added that its SLOWPOKE facilities comply with the CNSC’s regulatory documents on human performance management such as [REGDOC-2.2.5, Minimum Staff Complement](#),¹⁹ [REGDOC-2.5.1, General Design Considerations: Human Factors](#),²⁰ [REGDOC-2.2.4, Fitness for Duty: Managing Worker Fatigue](#),²¹ and [REGDOC-2.2.4, Fitness for Duty, Volume II: Managing Drug and Alcohol Use](#).²²

¹⁸ CNSC, [REGDOC-2.2.2, Personnel Training](#), December 2016.

¹⁹ CNSC, [REGDOC-2.2.5, Minimum Staff Complement](#), April 2019.

²⁰ CNSC, [REGDOC-2.5.1, General Design Considerations: Human Factors](#), March 2019.

²¹ CNSC, [REGDOC-2.2.4, Fitness for Duty: Managing Worker Fatigue](#), March 2017.

²² CNSC, [REGDOC-2.2.4, Fitness for Duty, Volume II: Managing Alcohol and Drug Use](#), January 2021.

32. In section 3.2 of CMD 23-H2, CNSC staff indicated that ÉPM maintains training documents and a training program based on a systematic approach to training that are fully compliant with the requirements of [REGDOC-2.2.2, Personnel Training](#). This training program ensures that ÉPM personnel remain qualified to safely perform their duties. CNSC staff reported that, during the current licence period, they conducted 3 inspections focused on ÉPM's training program. CNSC staff reported 3 non-compliances related to the training program, for operation in manual mode, the analysis of laboratory workers' training needs, and training procedures. CNSC staff noted that these non-compliances are of minimal significance to safety and that ÉPM has implemented the necessary corrective actions.
33. CNSC staff stated that ÉPM's performance related to staff certification and the number of certified reactor operators currently employed at the SLOWPOKE-2 nuclear facility meets all regulatory requirements.
34. The Commission asked ÉPM whether temporary staff, such as students, follow health and safety and radiation protection training. ÉPM reported that all staff working in the laboratory on a regular or temporary basis, such as students, research assistants, research associates and technicians, follow health and safety and radiation protection training.
35. Taking into consideration all the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM has implemented and continues to maintain an adequate staff training program for the facility, and that ÉPM's staff are appropriately trained and qualified in accordance with CNSC requirements. The Commission comes to this conclusion on the following basis:
 - The Commission agrees with CNSC staff's assessment that ÉPM has implemented a training program, using a systematic approach to training, that satisfies regulatory requirements, including [REGDOC-2.2.2, Personnel Training](#).
 - The Commission agrees with CNSC staff's assessment that ÉPM has effectively implemented the regulatory requirements.
 - The Commission is of the opinion that ÉPM has adequately addressed all inspection findings related to this safety and control area.

4.2.3 Operating Performance

36. Operating performance includes an overall review of the conduct of the licensed activities and the activities that enable effective performance, as well as improvement plans and significant future activities at the ÉPM facility. Paragraph 6(d) of the [Class I Nuclear Facilities Regulations](#) stipulates that an application for a licence to operate a Class I nuclear facility shall contain information on "the proposed measures, policies, methods and procedures for operating and maintaining the nuclear facility." [REGDOC-3.1.2, Reporting Requirements, Volume 1: Non-Power Reactor Class I Nuclear](#)

[Facilities and Uranium Mines and Mills](#),²³ sets out the requirements and guidance for reports and notifications that Class I nuclear facility licensees must submit to the CNSC.

37. In section 2.3 of CMD 23-H2.1, ÉPM provided information on how it ensures that licensed activities are conducted safely. ÉPM submitted information on its operation and maintenance procedure documents, its ongoing monitoring and maintenance activities and its issues-tracking database. ÉPM noted that its operations program monitors, measures and tracks operational parameters to ensure that its facility is operated in a manner consistent with regulatory requirements. ÉPM reported that its operating performance program includes operating limits for the site and that it has robust systems in place to ensure that operating performance is maintained and continuously improved.
38. ÉPM noted that its annual compliance reports are drafted in accordance with the guidelines in [REGDOC-3.1.2, Reporting Requirements, Volume 1: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills](#). ÉPM added that the annual compliance reports contain all operational parameters and notifications for its facilities.
39. CNSC staff reported in section 3.3 of CMD 23-H2 that ÉPM operates its facility in compliance with CNSC regulatory requirements. CNSC staff assessed ÉPM's performance over the current licence period through compliance verification activities, including 4 inspections. CNSC staff did not identify any non-compliances in this area. CNSC staff also reported that ÉPM continued to provide updates on operating performance via the submission of annual compliance reports in accordance with [REGDOC-3.1.2 Reporting Requirements, Volume 1: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills](#), but that some of these reports were submitted after the established deadlines. CNSC staff noted that only one incident was reported to CNSC during the current licence period – in August 2020, ÉPM operated the SLOWPOKE reactor while a reactor operator's certification had expired.
40. CNSC staff concluded that ÉPM continues to implement and maintain an effective operating program that is in compliance with regulatory requirements. CNSC staff stated that this finding is based on the analysis and assessment of ÉPM's application, the documents submitted in support of the application, and ÉPM's performance throughout the current licence period.
41. The Commission requested information on the automatic emergency shutdown system for the SLOWPOKE-2 reactor. ÉPM explained that the SLOWPOKE-2 reactor does not have such a system, given its built-in safety features. ÉPM also explained that the reactor can be shut down by the control system and the auxiliary shutdown system.

²³ CNSC, [REGDOC-3.1.2, Reporting Requirements, Volume 1: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills](#), July 2022.

42. With respect to the intervention by D. Winfield (CMD 23-H2.2), the Commission asked whether there is a maximum authorized number of simultaneous irradiated samples. CNSC staff explained that there is no specific limit for the number of samples authorized simultaneously. However, CNSC staff added that the irradiated samples constitute an insertion of negative reactivity²⁴ and that it is therefore impractical to load the system with a larger number of samples.
43. Again with respect to the intervention by D. Winfield (CMD 23-H2.2), the Commission asked whether there is a limit to the mass of irradiated fissile samples. CNSC staff explained that ÉPM's safety analysis specifies that the amount of fissile material that can be irradiated is 100 mg of U-235, based on the samples' reactivity. CNSC staff stated that they agreed with including such limits in the operational limits and conditions, specifying a limit of 10 mg of U-235 per sample because of the heat generated and the potential melting of the sample capsules.
44. Taking into consideration all of the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM remains qualified to carry on the activities under the proposed renewed licence. The evidence presented demonstrates that ÉPM has operated the facility in accordance with regulatory requirements over the current licence period and that its programs and procedures meet regulatory requirements. The Commission is of the opinion that ÉPM will continue to ensure that the appropriate programs are in place at the facility to provide for the protection of the health and safety of persons and the environment. The Commission comes to this conclusion on the following basis:
- The Commission is satisfied that ÉPM has operated its facility in accordance with regulatory requirements over the current licence period.
 - The Commission agrees with CNSC staff's assessment that ÉPM has maintained a reporting program in compliance with [REGDOC-3.1.2, Reporting Requirements, Volume 1: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills](#).
 - The Commission agrees with CNSC staff's assessment that ÉPM has appropriate measures in place for reporting, investigating, and implementing corrective actions for events, and is satisfied by the evidence provided by ÉPM that it will follow those measures.

4.2.4 Safety Analysis

45. Safety analysis, which supports the overall safety case for the facility, includes a systematic evaluation of the potential hazards associated with the conduct of the licensed activity or the operation of a facility. The safety analysis considers the effectiveness of preventive measures and strategies in reducing the effects of such hazards. Paragraph 6(c) of the [Class I Nuclear Facilities Regulations](#) provides that an application for a licence to operate a Class I nuclear facility shall contain "a final safety analysis report demonstrating the adequacy of the design of the nuclear facility".

²⁴ Decrease in reactivity caused either by devices designed for that purpose or by physical phenomena.

[REGDOC-2.4.1, *Deterministic Safety Analysis*](#),²⁵ sets out requirements and guidance for the preparation and presentation of a safety analysis that demonstrates the safety of a nuclear facility. [REGDOC-2.4.3, *Nuclear Criticality Safety*](#),²⁶ sets out requirements for nuclear criticality safety and provides guidance on how those requirements may be met.

46. ÉPM described its safety analysis program in section 2.4 of CMD 23-H2.1. ÉPM indicated that its safety analysis report describes the conditions, safe boundaries and hazard controls for its operations. ÉPM added that this analysis covers the operation of the reactor and related equipment, and both internal and external risks. ÉPM has assessed the hazards and their potential consequences to determine potentially hazardous scenarios in terms of safety, the environment and facility operability. ÉPM informed the Commission that its safety report complies with [REGDOC-2.4.1, *Deterministic Safety Analysis*](#), and [REGDOC-2.4.3, *Nuclear Criticality Safety*](#).
47. In section 3.4 of CMD 23-H2, CNSC staff confirmed that, based on the results of desktop reviews and compliance inspections, ÉPM's safety analysis program meets regulatory requirements. CNSC staff submitted that safety was demonstrated in credible scenarios using deterministic approaches consistent with the provisions of [REGDOC-2.4.1, *Deterministic Safety Analysis*](#). CNSC staff evaluated the information provided in ÉPM's application and determined that ÉPM has adequately assessed the hazards associated with the licensed activities and demonstrated an adequate level of protection for the full range of operating conditions.
48. CNSC staff found that ÉPM has a nuclear criticality safety program in place that is sufficient to meet the basic requirements of [REGDOC-2.4.3, *Nuclear Criticality Safety*](#). CNSC staff noted that ÉPM does not handle nuclear substances or fuel that are outside the reactor core and that may impact criticality.
49. In CMD 23-H2Q, the Commission asked ÉPM whether the safety analysis conducted in 1998 for ÉPM's facilities was still valid. In CMD 23-H2.1B, ÉPM stated that the 1998 safety analysis is still valid because there have not been any changes to the reactor or its nuclear safety structures, systems and components. In CMD 23-H2.C, CNSC staff stated that they had found that the conclusions from the safety analysis conducted in 1998 remain valid and that the document complies with the provisions of [REGDOC-2.4.1, *Deterministic Safety Analysis*](#).
50. CNSC staff stated that ÉPM's safety analysis provides an assessment of the potential consequences and demonstrates the safety of the facility using a defence-in-depth strategy, in accordance with the requirements of [REGDOC-2.4.1, *Deterministic Safety Analysis*](#).

²⁵ CNSC, [REGDOC-2.4.1, *Deterministic Safety Analysis*](#), May 2014.

²⁶ CNSC, [REGDOC-2.4.3, *Nuclear Criticality Safety*](#), September 2020. REGDOC-2.4.3 replaced RD-327: *Nuclear Criticality Safety* (2014).

51. Taking into consideration all of the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM's safety analysis program for its facility meets regulatory requirements. Furthermore, the Commission is of the opinion that all operations involving fissile material are carried out in accordance with the requirements set out in [REGDOC-2.4.3, Nuclear Criticality Safety](#). On the basis of the information presented by ÉPM and CNSC staff, the Commission concludes that the systematic evaluation of the potential hazards and the preparedness for reducing the effects of such hazards is adequate for the operation of the facility and the activities under the proposed licence. The Commission comes to this conclusion on the following basis:
- The Commission is of the opinion that the evidence submitted by ÉPM and CNSC staff sufficiently demonstrates that the design of ÉPM's facility will remain adequate throughout the proposed licence period.
 - The Commission agrees with CNSC staff's assessment that ÉPM's facility safety analysis report is adequate.
 - The Commission considers that the evidence submitted by ÉPM and CNSC staff sufficiently demonstrates that ÉPM meets the requirements of [REGDOC-2.4.1, Deterministic Safety Analysis](#), and [REGDOC-2.4.3, Nuclear Criticality Safety](#).

4.2.5 Physical Design

52. Physical design relates to activities that affect the ability of systems, structures and components to meet and maintain the design basis of a facility. The design basis is the range of conditions, according to established criteria, that the facility must withstand without exceeding authorized limits for the planned operation of safety systems. Paragraph 3(1)(d) of the [General Nuclear Safety and Control Regulations](#) stipulates that an application for a licence shall contain "a description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence". Paragraphs 3(a) and (b) of the [Class I Nuclear Facilities Regulations](#) state that a licence application for a Class I nuclear facility shall contain "a description of the site of the activity to be licensed" and "plans showing the location, perimeter, areas, structures and systems of the nuclear facility". Paragraphs 6(a) and (b) of the [Class I Nuclear Facilities Regulations](#) state that an application for a licence to operate a Class I nuclear facility shall contain a description of the structures, systems and equipment at the nuclear facility, including their design and their design operating conditions.
53. In section 2.5 of CMD 23-H2-1, ÉPM described its physical design program, which includes design governance, facility design, and system and component design. ÉPM stated that it had implemented a number of improvements over the current licence period, including changing the ventilation and air conditioning systems in 2013. ÉPM stated that it was not planning any changes to the reactor's equipment or operating procedures that would require an additional safety analysis for the proposed licence period of 2023 to 2033.

54. As set out in section 3.5 of CMD 23-H2, CNSC staff confirmed that ÉPM meets the regulatory requirements for the physical design safety and control area. Through desktop reviews and inspections conducted over the current licence period, CNSC staff confirmed that ÉPM has appropriately implemented and maintained a physical design program that meets regulatory requirements, namely by ensuring that all changes are carried out safely and within the limits of what is authorized under the licence.
55. Taking into consideration all of the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM continues to implement and maintain an effective physical design program at its facility, and that the design is adequate for the proposed licence period. The information provided demonstrates that ÉPM has adequate resources in place to safely manage and implement design changes that are within the licensing basis and that ÉPM meets regulatory requirements. The Commission comes to this conclusion on the following basis:
- The Commission is of the opinion that ÉPM has an adequate process in place to safely manage and implement design changes that are within the licensing basis.
 - The Commission agrees with CNSC staff's assessment that ÉPM's physical design program meets regulatory requirements.

4.2.6 *Fitness for Service*

56. Fitness for service covers activities that are performed to ensure that systems, structures and components at ÉPM's facility continue to effectively fulfill their intended purpose.
57. Pursuant to paragraph 6(d) of the *Class I Nuclear Facilities Regulations*, an application for a licence to operate a Class I nuclear facility shall contain "the proposed measures, policies, methods and procedures for operating and maintaining the nuclear facility". [REGDOC-2.6.3, *Aging Management, Fitness for Service*](#),²⁷ sets out the requirements and guidance for managing the aging of the structures, systems and components in reactor facilities. Specific aspects of CSA standard N393:13, *Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances*,²⁸ also apply to this safety and control area.
58. In section 2.6 of CMD 23-H2.1, ÉPM described its programs and activities related to fitness for service, including details on the programs in place for monitoring the performance of structures, systems and components and ensuring sufficient reliability in compliance with REGDOC-2.6.3. ÉPM stated that it had implemented a maintenance program, an aging management program, and periodic inspection and testing programs. ÉPM noted that one of the aging management measures it had taken was the acquisition of parts and equipment from the structures, systems and components of the

²⁷REGDOC-2.6.3, *Aging Management*, CNSC, March 2014.

²⁸N393:13, *Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances*, CSA Group, 2013 (R2018). This standard sets out the minimum fire protection requirements for the design, construction, commissioning, operation and decommissioning of facilities that process, handle or store nuclear substances and other hazardous substances that directly relate to the nuclear substances being regulated.

decommissioned SLOWPOKE-2 reactors at Dalhousie University in 2011, the University of Alberta in 2017, and the Saskatchewan Research Council in 2020.

59. In response to questions from the Commission in CMD 23-H2Q about the aging of the reactor vessel and its components, CNSC staff described in CMD 23-H2.C that the reactor vessel is subject to periodic inspections by ÉPM and by Canadian Nuclear Laboratories²⁹ during reactivity adjustments every 5 to 8 years. CNSC staff stated that no visible degradation had been observed and that these inspections provide assurance that the components are fit for service.
60. In section 3.6 of CMD 23-H2, CNSC staff indicated that ÉPM has adequate preventive maintenance and continuous inspection programs in place at its facility to ensure structures, systems and components remain effective over time. CNSC staff assessed ÉPM's fitness for service program and confirmed that it meets regulatory requirements. CNSC staff stated that they had conducted 2 inspections with checkpoints related to fitness for service over the current licence period and that no non-compliances were identified. CNSC staff also stated that ÉPM performs and logs the maintenance of structures, systems and components and performs equipment testing and calibrations as scheduled or as required.
61. The Commission notes that, as set out in the Licence Conditions Handbook proposed by CNSC staff, ÉPM is planning to implement CSA standard N393:13 by January 2024. The Commission expects to be informed of the progress of implementation.
62. Taking into consideration all of the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM has implemented and maintained an equipment maintenance program at its facility in order to conduct the licensed activities. The Commission comes to this conclusion on the following basis:
 - The Commission is satisfied that the maintenance performed on the structures, systems and components meets regulatory requirements, including REGDOC-2.6.3, *Aging Management*.
 - The Commission agrees with CNSC staff's assessment that ÉPM implemented and maintained a program for periodic inspection and testing for the facility.
 - The Commission agrees with CNSC staff's assessment that ÉPM's fitness for service program meets regulatory requirements.

4.2.7 *Radiation Protection*

63. As part of its evaluation of the adequacy of the measures for protecting the health and safety of persons, the Commission considered the past performance of ÉPM in radiation protection. The Commission considered the information provided by ÉPM and CNSC staff to assess whether the ÉPM facility's radiation protection program satisfies the requirements of the [Radiation Protection Regulations](#). The Commission

²⁹ The authority for making changes and reactivity adjustments is Canadian Nuclear Laboratories (CNL).

also considered whether ÉPM's radiation protection program ensures that radiation doses to persons and contamination are monitored, controlled and kept as low as reasonably achievable, with social and economic factors taken into consideration.

64. Section 4 of the [Radiation Protection Regulations](#) requires licensees to implement a radiation protection program. As part of that program, the licensee must “keep the effective dose and equivalent dose received by and committed to persons as low as reasonably achievable” and “ascertain the quantity and concentration of any nuclear substance released as a result of the licensed activity”. [REGDOC-2.7.1, Radiation Protection](#),³⁰ provides requirements and guidance on the topics of radiation protection programs, the principles of worker dose control and the principles of radiological hazard control to ensure the protection of workers and members of the public.
65. In section 2.7 of CMD 23-H2.1, ÉPM indicated that doses to ÉPM workers remained low over the current licence period. ÉPM listed its controls and programs for worker protection, which include dosimetry and radiation control. ÉPM stated that no staff members had been appointed as nuclear energy workers over the current licence period³¹ and that no incidents had occurred in which a person could have been exposed to radiation of an unusual nature or intensity. ÉPM stated that from 2012 to 2022, the average annual dose received by its staff had decreased from 0.12 mSv to 0.09 mSv.
66. ÉPM stated that it maintains programs for radiation protection, radiological surveys and hazardous materials storage in accordance with regulatory document [REGDOC-2.7.1, Radiation Protection](#). ÉPM added that it often calls upon external organizations to provide support for these programs, in particular for radiation protection courses, dosimeter readings, verification of radioactive contamination, and elimination of toxic waste. In CMD 23-H2, CNSC staff confirmed that no workers or members of the public received a radiation dose in excess of the CNSC's regulatory limits during the current licence period.
67. In CMD 23-H2, CNSC staff stated that ÉPM's radiation protection program meets regulatory requirements and confirmed that ÉPM's effective dose trends have been maintained well below regulatory dose limits. Over the current licence period, CNSC staff assessed the compliance of ÉPM's radiation protection program through various verification activities, including desktop reviews of annual compliance reports and 4 inspections with radiation protection criteria. CNSC staff stated that no non-compliances had been identified but that 2 recommendations had been made. CNSC staff added that ÉPM satisfactorily responded to the recommendations and implemented corrective actions. CNSC staff determined that ÉPM's radiation protection program meets the requirements of the [Radiation Protection Regulations](#).
68. Taking into consideration all of the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM has implemented and maintained an adequate radiation protection program to protect the environment and the health and safety of

³⁰ CNSC, [REGDOC-2.7.1, Radiation Protection](#), July 2021.

³¹ The regulatory dose limit for members of the public is 1 mSv in one calendar year.

persons from radiation hazards associated with the ÉPM facility. The Commission comes to this conclusion on the following basis:

- The Commission agrees with CNSC staff's assessment that ÉPM has implemented a radiation protection program that meets the requirements of the [Radiation Protection Regulations](#).
- The Commission is satisfied that the effective and equivalent doses to ÉPM staff are below regulatory limits.
- The Commission is satisfied with ÉPM's implementation of corrective actions in response to radiation protection recommendations.

4.2.8 Conventional Health and Safety

69. The conventional health and safety program covers the management of workplace safety hazards. The conventional health and safety program's objective is to minimize risk to the health and safety of workers posed by conventional (non-radiological) hazards in the workplace. This program includes compliance with applicable labour codes and conventional safety training.
70. The *Nuclear Safety and Control Act* states that the Commission must ensure that the applicant makes adequate provision to protect the health of persons. Pursuant to paragraph 3(f) of the [Class I Nuclear Facilities Regulations](#), an application for a licence in respect of a Class I nuclear facility must contain a description of the proposed worker health and safety policies and procedures. [REGDOC-2.8.1, Conventional Health and Safety](#),³² sets out requirements and guidance concerning conventional health and safety and the implementation and maintenance of a conventional health and safety program.
71. In section 2.8 of CMD 23-H2.1, ÉPM provided information on its conventional health and safety program, including information on departmental responsibilities for onsite health and safety, on health and safety sub-committees, on routine health and safety inspections, and on mandatory training. ÉPM stated that its occupational health and safety program meets the requirements of the Quebec [Act respecting occupational health and safety](#)³³ and the requirements set out in [REGDOC-2.8.1, Conventional Health and Safety](#). ÉPM reported that there have been no injuries or accidents to facility staff involving hazardous, nuclear or chemical substances since the year the SLOWPOKE-2 reactor was commissioned.
72. In section 3.8 of CMD 23-H2, CNSC staff reported that ÉPM is required to implement and maintain a conventional health and safety program, in accordance with the [Canada Labour Code, Part II](#),³⁴ and the associated [Canada Occupational Health and Safety Regulations](#),³⁵ which apply to all work performed by ÉPM employees and contractors.

³² CNSC, REGDOC-2.8.1, *Conventional Health and Safety*, July 2019.

³³ CQLR, c. S-2.1.

³⁴ R.S.C. 1985, c. L-2.

³⁵ SOR/86-304.

CNSC staff stated that ÉPM has implemented a health and safety policy that meets or exceeds the requirements imposed by Quebec occupational health and safety regulations, which state that employers and workers must work together to eliminate risks to workers' health, safety and physical well-being.

73. CNSC staff noted that they had routinely verified ÉPM's conventional health and safety program over the current licence period. CNSC staff assessed the compliance of ÉPM's conventional health and safety program during 4 inspections that included elements of the conventional health and safety program. CNSC staff also noted that no non-compliances had been identified during those inspections. CNSC staff indicated that ÉPM continues to implement and maintain an effective conventional health and safety program in accordance with regulatory requirements and CNSC expectations.
74. Taking into consideration all of the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM's conventional health and safety program meets regulatory requirements. The Commission is of the opinion that ÉPM has taken and will continue to take adequate measures to protect the health and safety of persons, with respect to the conventional hazards resulting from the operation of the SLOWPOKE-2 facility over the proposed licence period. The Commission comes to this conclusion on the following basis:
- The Commission agrees with CNSC staff's assessment that ÉPM's conventional health and safety program meets regulatory requirements, such as REGDOC-2.8.1, *Conventional Health and Safety*.
 - The Commission is satisfied that no conventional health and safety incidents were reported to CNSC staff during the current licence period.

4.2.9 Environmental Protection

75. Environmental protection programs are intended to identify, control and monitor all releases of radioactive and hazardous substances, and aim to minimize the effects on the environment which may result from the licensed activities. These programs include effluent and emissions control, environmental monitoring and estimated doses to the public.
76. Pursuant to the *Nuclear Safety and Control Act*, licensees must have adequate provision for the protection of the environment. Paragraphs 12(1)(c) and (f) of the [General Nuclear Safety and Control Regulations](#) require that every licensee take all reasonable precautions to protect the environment and the health and safety of persons, and to control the release of radioactive nuclear substances or hazardous substances within the site of the licensed activity and into the environment. The [Radiation Protection Regulations](#) prescribe dose limits for the general public, which, under subsection 1(3), is 1 mSv per calendar year. [REGDOC-2.9.1, Environmental Principles, Assessments and Protection Measures](#),³⁶ describes the CNSC's principles regarding environmental

³⁶ CNSC, REGDOC-2.9.1, *Environmental Principles, Assessments and Protection Measures*, September 2020.

protection, the scope of an environmental assessment and the roles and responsibilities associated with an environmental review, and the CNSC's requirements and guidance for the implementation of environmental protection measures.

77. In section 2.9 of CMD 23-H2.1, ÉPM provided the Commission with detailed information on its environmental protection and monitoring program. ÉPM indicated that its facility produces 2 types of releases of radioactive substances as radioactive gases, namely, releases to the atmosphere of radioactive argon from the irradiation systems and releases to the atmosphere of fission products, and described the emissions control mechanisms in place. ÉPM pointed out that its SLOWPOKE-2 facility reduced releases of radioactive substances into the environment by more than 30% as a result of improved management of reactor operation time.
78. ÉPM is not required to implement an environmental monitoring program because the estimated dose to the public is much lower than the regulatory dose limit for the public, and the dose rates to other ecological receptors are several orders of magnitude lower than conservative reference values. ÉPM stated that its environmental risk assessment report, submitted to the CNSC in November 2022, meets the requirements of [REGDOC-2.9.1, *Environmental Principles, Assessments and Protection Measures*](#), and complies with CSA standard N288.6-12, *Environmental Risk Assessments at Class I Nuclear Facilities and Uranium Mines and Mills*.³⁷ ÉPM maintained that the preliminary analysis of operational data from the SLOWPOKE-2 reactor collected over 46 years of operation indicates that ÉPM's SLOWPOKE-2 facilities have a minimal impact on the environment.
79. In section 3.9 of CMD 23-H2, CNSC staff specified that they had verified ÉPM's environmental protection performance through compliance verification activities, such as onsite inspections, reviews of annual compliance reports and desktop reviews. CNSC staff informed the Commission that they had conducted 4 inspections with environmental protection checkpoints. Staff stated that no non-compliances were identified during those inspections.
80. However, CNSC staff stated that they had issued comments requesting a review of ÉPM's environmental risk assessment. CNSC staff specified that their comments do not challenge the document's overall conclusions; they are primarily intended to clarify and justify certain assumptions. CNSC staff added that once ÉPM has submitted a revised version of the environmental risk assessment, it will have met the requirements of [REGDOC-2.9.1, *Environmental Principles, Assessments and Protection Measures*](#), and CSA standard N288.6-12, *Environmental Risk Assessments at Class I Nuclear Facilities and Uranium Mines and Mills*.

³⁷ CSA Group, CSA N288.6-12, *Environmental Risk Assessments at Class I Nuclear Facilities and Uranium Mines and Mills*, 2012.

81. CNSC staff confirmed that the atmospheric releases over the current licence period have been low enough that the effects on people and the environment are considered minor, and action levels are not required. CNSC staff added that ÉPM's SLOWPOKE-2 facility does not release any radioactive liquid effluent.
82. CNSC staff indicated that ÉPM's implementation of the environmental protection program meets CNSC regulatory requirements and expectations and that the design and implementation of the environmental protection program at the ÉPM facility complies with [REGDOC 2.9.1, *Environmental Principles, Assessments and Protection Measures*](#).
83. Taking into consideration all of the evidence submitted by ÉPM and CNSC staff, the Commission concludes that, based on the results and information provided, and given the mitigation measures and programs that are in place to control hazards, ÉPM has provided, and will continue to provide, adequate protection for the health and safety of persons and the environment. The Commission is satisfied that the measures implemented at the ÉPM facility are adequate for the purposes of environmental protection under the *Nuclear Safety and Control Act*. The Commission comes to this conclusion on the following basis:
- The Commission is satisfied that releases to the environment from the ÉPM facility during the current licence period were well below licence limits.
 - The Commission agrees with CNSC staff's assessment that ÉPM's environmental monitoring program meets regulatory requirements, including CSA standard N288.6-12, *Environmental Risk Assessments at Class I Nuclear Facilities and Uranium Mines and Mills*.
 - The Commission is satisfied that environmental monitoring data have shown that public dose remained well below the regulatory limit throughout the current licence period.
 - The Commission is satisfied that ÉPM's environmental management system will meet the requirements of [REGDOC-2.9.1, *Environmental Principles, Assessments and Protection Measures*](#).

The Commission notes that ÉPM's compliance report is currently under review and requests that CNSC staff provide an update on the document's progress in a future regulatory oversight report.

4.2.10 Emergency Management and Fire Protection

84. The emergency management and fire protection programs cover the measures for preparedness and response capabilities implemented by ÉPM in the event of emergencies and non-routine conditions at its facility. These measures include nuclear emergency management, conventional emergency response, and fire protection and response.

85. Pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*, the applicant must, in carrying on the proposed 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. Paragraph 12(1)(c) of the [General Nuclear Safety and Control Regulations](#) states that every licensee shall “take all reasonable precautions to protect the environment and the health and safety of persons and to maintain ... security” and paragraph 12(1)(f) states that every licensee shall “take all reasonable precautions to control the release of radioactive nuclear substances or hazardous substances within the site of the licensed activity and into the environment”. Paragraph 6(k) of the [Class I Nuclear Facilities Regulations](#) requires that a licence application contain information on the licensee’s “proposed measures to prevent or mitigate the effects of accidental releases of nuclear substances and hazardous substances on the environment, the health and safety of persons and the maintenance of national security”.
86. [REGDOC-2.10.1, Nuclear Emergency Preparedness and Response](#),³⁸ sets out the CNSC’s emergency preparedness requirements and guidance for licensees and licence applicants of Class I nuclear facilities and uranium mines and mills, including ÉPM.
87. In section 2.10 of CMD 23-H2.1, ÉPM provided information on its emergency management procedures and stated that nuclear emergency management at its facilities meets the requirements of [REGDOC-2.10.1, Nuclear Emergency Preparedness and Response](#). ÉPM also indicated that emergency management is performed in accordance with ÉPM’s corporate policy, the [Politique opérationnelle en matière de gestion des mesures d’urgence et de gestion de crise](#) [French only]. ÉPM also stated that it implemented the emergency response procedure for SLOWPOKE nuclear reactors, which includes response procedures for radioactive alarms, intruder alarms and fire alarms.
88. ÉPM reported that its facility has multiple layers of support to ensure that any emergencies are dealt with appropriately. ÉPM explained that the Service de Police de la Ville de Montréal and fire fighters from the Outremont borough fire station familiarized themselves with ÉPM’s facilities through visits organized by ÉPM’s institutional security service.
89. In section 3.10 of CMD 23-H2, CCSN staff stated that ÉPM’s SLOWPOKE facilities are characterized by a low level of nuclear or radiological risk and that ÉPM has an acceptable emergency preparedness and fire response plan. CNSC staff stated that ÉPM meets CNSC requirements for this safety and control area, including the requirements of [REGDOC-2.10.1, Nuclear Emergency Preparedness and Response](#). CNSC staff noted that they considered ÉPM’s performance as satisfactory over the current licence period, with a stable trend. CNSC staff indicated that their assessment was based on a review of annual reports and other documents related to this safety and control area.

³⁸ CNSC, [REGDOC-2.10.1, Nuclear Emergency Preparedness and Response](#), February 2016.

90. Taking into consideration all of the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM's nuclear and conventional emergency management program and the fire protection measures in place at its facility are adequate to protect the environment and the health and safety of persons. The Commission comes to this conclusion on the following basis:
- The Commission agrees with CNSC staff's assessment that ÉPM's emergency preparedness program complies with regulatory requirements, including the requirements of [REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response*](#).
 - The Commission agrees with CNSC staff's assessment that ÉPM's fire protection program meets regulatory requirements.

4.2.11 Waste Management

91. Waste management covers waste-related programs that form part of a facility's operations up to the point where the waste is removed from the licensed site for storage, treatment, or disposal at another licensed location, and includes waste minimization, segregation, characterization, and storage programs.
92. Paragraph (3)(1)(j) of the [General Nuclear Safety and Control Regulations](#) requires all licence applications to contain "the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste". [REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada*](#),³⁹ provides an overview of the governance and regulatory framework for radioactive waste management and decommissioning in Canada, and [REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*](#),⁴⁰ sets out the requirements and guidance for radioactive waste management.
93. In section 2.11 of CMD 23-H2.1, ÉPM described its waste management program, which includes conventional waste management and policies, regulations and procedures for the management of irradiated samples and the handling of nuclear substances. ÉPM stated that waste management is conducted in accordance with the requirements set out in [REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada*](#) and [REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*](#). ÉPM pointed out that the samples it irradiates are placed in a radioactive-waste drum and are collected and processed by a licensed service provider. ÉPM also stated that the SLOWPOKE facilities have a policy to minimize the volume of radioactive waste through sound experimental design.

³⁹ CNSC, REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada*, March 2021.

⁴⁰ CNSC, REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*, January 2021.

94. In section 3.11 of CMD 23-H2, CNSC staff stated that ÉPM maintains a waste management program that complies with the requirements of [REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada*](#), and [REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*](#), and the applicable CSA Group standards, that is, N292.0:19, *General Principles for the Management of Radioactive Waste and Irradiated Fuel*⁴¹ and N292.3-14, *Management of Low- and Intermediate-Level Radioactive Waste*.⁴² CNSC staff added that their assessment of ÉPM's waste management program and associated supporting documentation confirmed that ÉPM's waste management program meets regulatory requirements. CNSC staff stated that no spent fuel is produced on a regular basis as ÉPM does not anticipate changing the existing fuel load until the reactor is decommissioned.
95. CNSC staff conducted 2 compliance inspections with verification points related to waste management at ÉPM during the current licence period. CNSC staff stated that no non-compliances were identified.
96. Taking into consideration all the evidence submitted by ÉPM and CNSC staff, the Commission is satisfied that ÉPM has implemented and continues to maintain an acceptable waste management program to safely manage waste at the ÉPM facility. The Commission comes to this conclusion on the following basis:
- The Commission agrees with CNSC staff's assessment that ÉPM has implemented a waste management program that meets regulatory requirements.
 - The Commission is of the opinion that ÉPM has a waste management program in place that is founded on principles of sound radioactive waste management.

4.2.12 Security

97. ÉPM's security program must comply with the applicable provisions of the [General Nuclear Safety and Control Regulations](#) and the [Nuclear Security Regulations, Part 2](#).⁴³ Paragraph 12(1)(c) of the [General Nuclear Safety and Control Regulations](#) states that every licensee shall "take all reasonable precautions to protect the environment and the health and safety of persons and to maintain the security of nuclear facilities and of nuclear substances". Paragraphs 12(1)(g) and 12(1)(h) state that every licensee shall "implement measures for alerting the licensee to the illegal use or removal of a nuclear substance, prescribed equipment or prescribed information, or the illegal use of a nuclear facility" and "implement measures for alerting the licensee to acts of sabotage or attempted sabotage anywhere at the site of the licensed activity". Paragraph 12(1)(j) requires the licensee to "instruct the workers on the physical security program at the site of the licensed activity and on their obligations under that program".

⁴¹ CSA Group, N292.0-14, *General Principles for the Management of Radioactive Waste and Irradiated Fuel*, 2019.

⁴² CSA Group, N292.3-14, *Management of Low- and Intermediate-Level Radioactive Waste*, 2014.

⁴³ SOR/2000-209.

98. In addition, sections 21 to 23 of the *General Nuclear Safety and Control Regulations* set out obligations for all licensees with respect to requirements for the identification, storage, handling and transfer of information designated as “prescribed information.” [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material](#),⁴⁴ provides regulatory expectations and guidance to licensees on security pursuant to the *General Nuclear Safety and Control Regulations*. [REGDOC-2.12.2, Site Access Security Clearance](#),⁴⁵ sets out CNSC requirements and guidance for granting, denying or revoking a site access security clearance for authorized unescorted entry to a protected area at a high-security site.
99. In section 2.12 of CMD 23-H2.1, ÉPM stated that it has implemented and maintains a security program at its facility to ensure restricted access to the SLOWPOKE-2 reactor, in accordance with [REGDOC-2.12.2, Site Access Security Clearance](#), and [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material](#). ÉPM noted that its institutional security service monitors the SLOWPOKE facility at all times through patrols, access control and visual observation.
100. In section 3.12 of CMD 23-H2, CNSC staff confirmed that ÉPM has implemented and maintained a security program that meets the regulatory requirements of the *General Nuclear Safety and Control Regulations*, the *Nuclear Security Regulations, Part 2* and [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material](#), to prevent the loss, unauthorized removal and sabotage of nuclear substances, nuclear materials, and prescribed equipment or information. CNSC staff also stated that, during the current licence period, they conducted 2 inspections with verification criteria related to this safety and control area, in addition to a security inspection, and that 3 non-compliances identified as a result of those inspections were reported to ÉPM. CNSC staff reported that all non-compliances identified were of low safety significance and have been satisfactorily addressed by ÉPM.
101. Taking into consideration all the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM has the appropriate measures and programs in place to ensure the physical security of its facility. The evidence shows that ÉPM’s performance with respect to maintaining security at the ÉPM facility has been acceptable over the current licence period and that ÉPM meets CNSC regulatory requirements. The Commission comes to this conclusion on the following basis:
- The Commission agrees with CNSC staff’s assessment that the security program at the ÉPM facility meets regulatory requirements, including the *General Nuclear Safety and Control Regulations*, the *Nuclear Security Regulations, Part 2* and [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material](#).
 - The Commission is of the opinion that ÉPM has adequately adopted measures to respond to the non-compliances identified in CNSC staff inspections in this [safety and control area](#), to staff’s satisfaction.

⁴⁴ CNSC, [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material](#), September 2020.

⁴⁵ CNSC, [REGDOC-2.12.2, Site Access Security Clearance](#), April 2013.

4.2.13 Safeguards and Non-Proliferation

102. The CNSC's mandate includes ensuring compliance with Canada's international obligations under the [Treaty on the Non-Proliferation of Nuclear Weapons](#).⁴⁶ Pursuant to the Treaty, Canada has entered into a [Comprehensive Safeguards Agreement](#)⁴⁷ and an [Additional Protocol](#)⁴⁸ (safeguards agreements) with the International Atomic Energy Agency (IAEA). The Safeguards Agreement sets out the safeguards system to which Canada must adhere, including what materials are subject to safeguards and what information must be reported to the IAEA, while the Additional Protocol contains further requirements for reporting information and providing access to nuclear facilities.
103. [REGDOC-2.13.1, Safeguards and Nuclear Material Accountancy](#),⁴⁹ sets out requirements and guidance for safeguards programs for applicants and licensees who possess nuclear material, operate uranium or thorium mines, carry out specified types of nuclear fuel-cycle related research and development work, or carry out specified types of nuclear-related manufacturing activities.
104. In section 2.13 of CMD 23-H2.1, ÉPM described its safeguards and non-proliferation program, which includes checks such as taking inventory of physical stock and assessing and verifying physical stock with the IAEA. ÉPM stated that it was in compliance with the obligations on safeguards and non-proliferation under the *Nuclear Safety and Control Act* and [REGDOC-2.13.1, Safeguards and Nuclear Material Accountancy](#). ÉPM explained that the last verification was conducted by IAEA staff on October 31, 2020, which confirmed that there is no undisclosed, produced or transformed nuclear material. ÉPM added that it sends annual inventory reports to the CNSC.
105. In section 3.13 of CMD 23-H2, CNSC staff stated that based on their desktop review, ÉPM meets regulatory requirements. CNSC staff also noted that the IAEA conducted inspections and verifications throughout the current licence period. CNSC staff reported that in all cases, ÉPM provided the IAEA with the necessary access and assistance to perform the activities and complied with all regulatory requirements.
106. CNSC staff noted that ÉPM submitted the annual operational program and the annual update to the additional protocol as required, although both were submitted late in several cases. CNSC staff stated that they had informed ÉPM of their expectations regarding expected improvements in timeliness. The Commission expects CNSC staff to notify the Commission through the regulatory oversight report if the issues persist.
107. Taking into consideration all of the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM has implemented and maintains a satisfactory safeguards program that provides for, and will continue to provide for, the implementation of measures that are necessary for maintaining national security and for

⁴⁶ INFCIRC/140.

⁴⁷ INFCIRC/164.

⁴⁸ INFCIRC/164/Add.1

⁴⁹ CNSC, REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*, February 2018.

implementing international agreements to which Canada has agreed. The Commission comes to this conclusion on the following basis:

- The Commission agrees with CNSC staff's assessment that ÉPM's safeguards and non-proliferation program meets regulatory requirements, including [REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*](#).
- The Commission is satisfied that ÉPM has provided the IAEA with the necessary access and assistance to perform activities and has complied with all regulatory requirements.

4.2.14 Packaging and Transport

108. Packaging and transport covers the safe packaging and transport of nuclear substances and radiation devices to and from the licensed facility. ÉPM must adhere to the [Packaging and Transport of Nuclear Substances Regulations, 2015](#),⁵⁰ and Transport Canada's [Transportation of Dangerous Goods Regulations](#)⁵¹ for all shipments. These regulations apply to the packaging and transport of nuclear substances at ÉPM, including the design, production, use, inspection, maintenance and repair of packages, as well as the preparation, shipping, handling, loading, transport and unloading of packages. [REGDOC-2.14.1, *Packaging and Transport, Volume II: Radiation Protection Program Design for the Transport of Nuclear Substances*](#),⁵² contains directives for the implementation of a radiation protection program for the transport of nuclear substances in accordance with the *Nuclear Safety and Control Act* and the regulations made under the Act.
109. In section 2.14 of CMD 23-H2.1, ÉPM submitted information on its packaging and transport program, including information on the training program for shipping and receiving radioactive materials and the procedures established with those responsible for receiving merchandise on how to handle hazardous materials. ÉPM specified that radioactive materials are transported in accordance with the requirements of the [Transportation of Dangerous Goods Regulations](#) and [REGDOC-2.14.1, *Packaging and Transport, Volume II: Radiation Protection Program Design for the Transport of Nuclear Substances*](#). ÉPM stated that, since 2013, it has not shipped any Type A packages⁵³ outside of Montréal.
110. In section 3.14 of CMD 23-H2, CNSC staff stated that ÉPM's packaging and transport program applies to the packaging and transport of nuclear substances, including the design, production, use, inspection, maintenance and repair of packages, as well as the preparation, shipping, handling, loading, transport and unloading of packages, and that it complies with the [Packaging and Transport of Nuclear Substances Regulations, 2015](#), and the [Transportation of Dangerous Goods Regulations](#) for all shipments.

⁵⁰ SOR/2015-145.

⁵¹ SOR/2001-286.

⁵² CNSC REGDOC-2.14.1, *Packaging and Transport, Volume II: Radiation Protection Program Design for the Transport of Nuclear Substances*, November 2018.

⁵³ Type A packages are suitable for transporting radioactive materials in moderate quantities (packages in the Exempt category are suitable for small quantities and Type B packages are suitable for large quantities).

CNSC staff also stated that they had verified that ÉPM maintains a program to supervise staff who handle nuclear substances for packaging and transport, and that staff training activities were verified during inspections related to the human performance management safety and control area. CNSC staff added that because ÉPM only carries out a limited number of radioactive material transport activities, compliance verification activities were limited to the review of documents, book entries, transport licence applications and annual reports. CNSC staff indicated that no issues were identified during the verifications and that no packaging and transport related incidents were reported during the current licensing period.

111. Taking into consideration all the evidence submitted by ÉPM and CNSC staff, the Commission concludes that ÉPM has appropriate measures and programs in place to comply with packaging and transport regulatory requirements. The Commission comes to this conclusion on the following basis:
- The Commission agrees with CNSC staff's assessment that ÉPM's packaging and transport program complies with regulatory requirements, including the [Packaging and Transport of Nuclear Substances Regulations, 2015](#), and the [Transportation of Dangerous Goods Regulations](#).
 - The Commission is satisfied that there were no packaging and transport related incidents reported during the current licensing period.

4.2.15 Conclusions on Safety and Control Areas

112. Based on the above information, the Commission is satisfied that ÉPM is qualified to carry on the licensed activities under the proposed renewed licence and that it has adequate programs and measures in place with respect to the 14 [safety and control areas](#) to ensure that the health and safety of workers, the public and the environment will be protected. The Commission is further satisfied that ÉPM has measures in place to provide for the maintenance of national security and to implement international obligations to which Canada has agreed.

4.3 Indigenous Engagement and Consultation

113. The Commission considered the information provided by CNSC staff and ÉPM regarding Indigenous consultation and engagement activities in respect of this application. Indigenous consultation refers to the common law duty to consult with Indigenous Nations and communities pursuant to section 35 of the [Constitution Act, 1982](#).⁵⁴
114. The common law duty to consult with Indigenous Nations and communities is engaged when the Crown contemplates action that may adversely affect established or potential Aboriginal and/or treaty rights. The CNSC, as an agent of the Crown and as Canada's nuclear regulator, recognizes and understands the importance of building relationships

⁵⁴ Schedule B to the *Canada Act, 1982* (U.K.), 1982, c. 11.

and engaging with Canada's Indigenous Nations and communities. The CNSC ensures that its licensing decisions under the *Nuclear Safety and Control Act* uphold the honour of the Crown and consider potential impacts to claimed or established Aboriginal and/or treaty rights pursuant to section 35 of the *Constitution Act, 1982*.

115. The duty to consult is engaged wherever the Crown has “knowledge, real or constructive, of the potential existence of the Aboriginal right or title and contemplates conduct that might adversely affect it”.⁵⁵ Licensing decisions of the Commission, where Indigenous interests may be adversely impacted, can engage the duty to consult, and the Commission must be satisfied that it has met the duty prior to making the relevant licensing decision.

Indigenous Engagement by CNSC Staff

116. In section 4.1 of CMD 23-H2, CNSC staff provided information about their engagement activities with the Indigenous Nations and communities that were identified as having a potential interest in the ÉPM licence renewal. CNSC staff identified these Indigenous Nations and communities based on the proximity of their communities, treaty areas, and/or traditional territories and homelands to the ÉPM facility, or based on a previously expressed interest in being kept informed. These communities included:
- Mohawks of Kanesatake
 - Mohawks of Kahnawake
 - Mohawks of Akwesasne
117. CNSC staff noted that participant funding was available to facilitate participation in the licence application review process. CNSC staff also noted that all the identified Indigenous Nations and communities were encouraged to participate in the regulatory review process so that they could bring directly to the Commission any of their concerns about this licence renewal application.
118. CNSC staff pointed out that they were not informed of any specific concerns from the identified Nations and communities with regard to the ÉPM facility.
119. CNSC staff indicated that the licence renewal application was not expected to cause any new adverse impacts to potential or established Aboriginal and/or treaty rights. CNSC staff noted that they had not been made aware of any concerns about potential new impacts on rights specific to the licence renewal application expressed by Indigenous Nations and communities through ÉPM's engagement activities.

⁵⁵ *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73, para. 35.

ÉPM Indigenous Engagement

120. In section 3.2 of CMD 23-H2.1, ÉPM provided information on its ongoing engagement with Indigenous Nations and communities near the ÉPM facility. ÉPM stated that its equity, diversity and inclusion policies comply with [REGDOC-3.2.2, *Indigenous Engagement*](#),⁵⁶ which sets out requirements and guidance for licensees whose proposed projects may raise the Crown's duty to consult.

4.3.1 Conclusion on Indigenous Consultation and Engagement

121. The Commission concludes that it has met its responsibility to uphold the honour of the Crown and its constitutional obligations with regard to the duty to consult and, if applicable, accommodate Indigenous groups. The renewal of ÉPM's licence does not include any new activities that could cause new impacts on the environment or changes in the ongoing licensed activities at the ÉPM facility site, and therefore, will not cause any new adverse impacts to any potential or established Aboriginal and/or treaty rights.⁵⁷
122. The Commission acknowledges the current efforts and commitments made by ÉPM in relation to Indigenous engagement and CNSC staff's efforts in this regard on behalf of the Commission. The Commission is satisfied with CNSC staff's efforts to engage with Indigenous Nations and communities who may have interest in the ÉPM facility. The efforts made by CNSC staff in this regard are key to the important work of the Commission toward reconciliation and relationship-building with Canada's Indigenous Nations and communities. The Commission expects CNSC staff to continue to build meaningful long-term relationships with Indigenous Nations and communities as part of the CNSC's reconciliation efforts.
123. Furthermore, the Commission acknowledges ÉPM's ongoing engagement efforts with Indigenous Nations and communities. The Commission expects that ÉPM will make best efforts to establish relationship agreements with interested Indigenous Nations and communities for the discussion of issues and concerns regarding the ÉPM facility.

4.4 Other Matters of Regulatory Importance

4.4.1 Public Engagement

124. A public information and disclosure program (PIDP) is a regulatory requirement for licence applicants and licensed operators of Class I nuclear facilities. The purpose of [REGDOC-3.2.1, *Public Information and Disclosure*](#),⁵⁸ is to set out, for licensees and applicants, the CNSC's regulatory requirements for public information and disclosure.

⁵⁶ CNSC, REGDOC-3.2.2, *Indigenous Engagement*, February 2022.

⁵⁷ *Rio Tinto Alcan Inc. v. Carrier Sekani Tribal Council*, 2010 SCC 43, [2010] 2 SCR 650, paras. 45 and 49.

⁵⁸ CNSC, REGDOC-3.2.1, *Public Information and Disclosure*, May 2018.

125. In section 3.1 of CMD 23-H2.1, ÉPM explained that its PIDP was designed to build and maintain the trust of local communities by demonstrating that its operations are safe and by providing the public with accurate and transparent reporting of environmental practices and performance. ÉPM stated that it has implemented and maintained a PIDP to meet the requirements of [REGDOC-3.2.1, *Public Information and Disclosure*](#). ÉPM noted that information on nuclear reactors and their importance in the current energy context, and on radiation protection and the applications of radiation, can be found on its [website](#) [French only].
126. In section 4.3 of CMD 23-H2, CNSC staff confirmed that ÉPM's PIDP meets the criteria of [REGDOC-3.2.1, *Public Information and Disclosure*](#). CNSC staff reported that, during the current licence period, they monitored the implementation of the PIDP to verify that ÉPM was communicating effectively with its target audiences. Furthermore, CNSC staff stated that ÉPM had satisfactorily updated its PIDP in 2022 following new recommendations issued by CNSC staff.
127. The Commission is of the opinion that ÉPM will continue to communicate to the public information about the health, safety and security of persons and the environment and other issues related to its facility. The Commission comes to this conclusion on the following basis:
- The Commission is satisfied that ÉPM met its public disclosure and reporting obligations throughout the current licence period.
 - The Commission agrees with CNSC staff's assessment that ÉPM's PIDP meets the requirements of [REGDOC-3.2.1, *Public Information and Disclosure*](#).

4.4.2 *Decommissioning Plans and Financial Guarantee*

128. The *Nuclear Safety and Control Act* and its regulations require licensees to make adequate provision for the safe decommissioning of their facilities and for the long-term management of waste produced during the lifespan of those facilities. In order to ensure that adequate resources are available for safe and secure future decommissioning of the ÉPM facilities, the Commission requires that an adequate financial guarantee for the realization of planned activities be put in place and maintained in a form acceptable to the Commission throughout the licence period.
129. [REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*](#),⁵⁹ sets out requirements and guidance for applicants and licensees regarding the establishment and maintenance of funding for the decommissioning of facilities and termination of activities licensed by the CNSC. [REGDOC-2.11.2, *Decommissioning*](#),⁶⁰ sets out requirements and guidance regarding the planning and preparation for, as well as the execution and completion of, decommissioning.

⁵⁹ CNSC, REGDOC-3.3.1, *Financial Guaranties for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*, January 2021.

⁶⁰ CNSC, REGDOC-2.11.2, *Decommissioning*, January 2021.

130. In sections 2.11 and 3.5 of CMD 23-H2.1, ÉPM reported that it continues to manage and maintain an acceptable preliminary decommissioning plan and financial guarantee. ÉPM stated that its preliminary decommissioning plan is currently under review. ÉPM also stated that it had reviewed its decommissioning plan twice in 2022 in order to update its financial security agreement with the CNSC, in accordance with [REGDOC-3.3.1 Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities](#).
131. In CMD 23-H2.A, CNSC staff stated that the decommissioning plan and related cost estimate submitted by ÉPM are a credible basis for the financial guarantee. CNSC staff added that while some details have yet to be settled in order to meet all of the requirements of [REGDOC-2.11.2, Decommissioning](#), they are of the opinion that the proposed financial guarantee is adequate to cover the costs of decommissioning ÉPM's SLOWPOKE-2 facility.
132. CNSC staff noted that institutions that operate research reactors, such as SLOWPOKE-2 reactors, should maintain sufficient financial guarantees in a form other than expressed commitments to bring the facility to a safe state, including removal of fuel and radioactive and hazardous materials from the site. The remaining cost for completing the decommissioning of the facility may be covered by a letter of commitment acknowledging the responsibility and liability of decommissioning. CNSC staff noted that the financial guarantee for the period from 2023 to 2028 comprises:
- a bank account, with a current balance of \$750,000, which ÉPM will increase by \$50,000 a year
 - a letter of credit in the amount of \$1.5 million to the CNSC
 - a letter of commitment from ÉPM acknowledging ÉPM's responsibility and liability for decommissioning and assuming sole financial responsibility for the decommissioning of the SLOWPOKE reactor

CNSC staff reported that the financial guarantee proposed by ÉPM meets the requirements of [REGDOC-3.3.1 Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities](#), especially in terms of liquidity, certainty of value, and term.

133. The Commission is satisfied that the preliminary decommissioning plan and amount and form of the financial guarantee for decommissioning ÉPM's facility are in place and are acceptable for the purpose of this licence renewal.

4.4.3 Cost Recovery

134. Pursuant to the [Canadian Nuclear Safety Commission Cost Recovery Fees Regulations](#),⁶¹ ÉPM's SLOWPOKE facility is exempt from the recovery of costs incurred by the CNSC's compliance activities.

⁶¹ SOR/2003-212.

4.4.4 Nuclear Liability Insurance

135. The ÉPM facilities are identified as a nuclear installation in Schedule 2 to the [Nuclear Liability and Compensation Regulations](#)⁶² and ÉPM is required to maintain valid insurance for the liability amount defined in those regulations, in accordance with the [Nuclear Liability and Compensation Act](#).⁶³ While this statutory requirement is administered by Natural Resources Canada, the CNSC is responsible for ensuring compliance with the [Nuclear Liability and Compensation Act](#) where its licensees are designated nuclear facilities. CNSC staff confirmed that ÉPM has nuclear liability insurance in place for its facility.
136. Based on the information provided on the record for this hearing, the Commission is satisfied that ÉPM continues to satisfy the requirements for the maintenance of nuclear liability insurance under the [Nuclear Liability and Compensation Act](#).

4.5 Licence Length and Conditions

137. The Commission considered ÉPM's application to renew its licence for a period of 10 years. ÉPM's current licence, PERFP-9A.01/2023, expires on June 30, 2023.

4.5.1 Licence Length

138. ÉPM is requesting a 10-year term for the renewed licence. Based on its performance and continuous improvements, ÉPM is of the opinion that it is qualified to carry on the licensed activities planned for the proposed 10-year licence term and that it will continue to make adequate provision for the protection of the environment and the health and safety of workers and the public.
139. CNSC staff stated that they saw no issues with the 10-year licence period proposed by ÉPM and recommended that the licence be renewed for a period of 10 years, identical to the current licence period, until June 30, 2033. CNSC staff maintained that ÉPM is qualified to carry on the activities that the licence will authorize, considering its satisfactory performance over the current licence period, the low level of risk related to the facility, the continuous compliance verification by CNSC staff, and the routine updates to the Commission through regulatory oversight reports.
140. Based on the information examined by the Commission, the Commission is satisfied that a 10-year licence term is appropriate. The Commission's decision is based on the following:
- The Commission agrees with CNSC staff's assessment of ÉPM's satisfactory performance over the current licence period.

⁶² SOR/2016-88.

⁶³ S.C. 2015, c. 4, s. 120.

- The Commission considers that the risks associated with the operation of the ÉPM facility are well characterized and their impacts well predicted.
- The Commission considers that ÉPM has a mature and effective management system and programs in place.
- The Commission is satisfied with ÉPM's performance and transparency with respect to sharing information with the public.

The Commission notes that CNSC staff's, as well as the Commission's, oversight of licensed activities is independent of the length of a licence and is based on a robust regulatory framework. The licence and Licence Conditions Handbook structure is well-crafted to contemplate continuous improvement of the licensing basis over time, including changes managed under ÉPM's management system and updated CSA Group standards and regulatory documents. The Commission is satisfied that, under this structure, ÉPM's programs and procedures will continue to be updated and will remain adequate over the proposed 10-year licence period. The Commission also emphasizes that, as per subsection 43(3) of the *Nuclear Safety and Control Act*, it may at any time, on its own initiative, redetermine any decision or order made by it. Therefore, the Commission considers that the proposed licence period does not in any way affect the robust regulatory oversight that the *Nuclear Safety and Control Act* both enables and mandates.

4.5.2 Licence Conditions

141. Part 2 of CMD 23-H2 from CNSC staff includes a proposed draft licence with a format that incorporates the CNSC's standardized licence conditions applicable to the ÉPM facility. CNSC staff reported that ÉPM has not requested any changes to the licensed activities, aside from the fact that the subcritical nuclear assembly is no longer part of the facility or activities.
142. In CMD 23-H2Q, the Commission asked why the operating limits and conditions appearing in the current licence were moved to the "Operating Performance" heading in the Licence Conditions Handbook. In CMD 23-H2.C, CNSC staff explained that the CNSC now uses an approach based on standard licence conditions with additional details, including relevant limits, in a Licence Conditions Handbook. CNSC staff stated that this approach facilitates licence updates.
143. With respect to the intervention by D. Winfield (CMD 23-H2.2), the Commission supports the imposition of a limit of 10 mg of U-235 per sample due to the heat generation and potential melting of the sample capsules.
144. The Commission accepts the proposed licence, as submitted by CNSC staff in CMD 23-H2.

4.5.3 Delegation of Authority

145. In order to provide adequate regulatory oversight of changes that are administrative in nature and that do not require a licence amendment or Commission approval, CNSC

staff recommended that the Commission delegate authority for certain approval or consent, as contemplated in licence conditions that contain the phrase “a person authorized by the Commission,” to the following CNSC staff:

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

CNSC staff recommended that the Commission delegate authority for licence condition 3.2, Reporting Requirements.

146. The Commission delegates its authority for the purpose of licence condition 3.2 to the CNSC staff members listed above, as recommended. The Commission is satisfied that this approach is reasonable and consistent with the current licence.

4.5.4 Conclusion on Licence Length and Conditions

147. Based on the information examined by the Commission, the Commission is satisfied that a 10-year licence is appropriate for ÉPM. The Commission accepts the licence conditions as recommended by CNSC staff, and the standardized licence and Licence Conditions Handbook. The Commission also accepts CNSC staff’s recommendation regarding the delegation of authority for the purpose of licence condition 3.2. The Commission notes that CNSC staff can bring any matter to the Commission as required.

5.0 CONCLUSION

148. The Commission has considered the application for licence renewal submitted by ÉPM for its licence to operate a SLOWPOKE-2 non-power nuclear reactor. The Commission has considered the information and submissions of ÉPM, CNSC staff and the intervenor as set out in the material available for reference on the record.
149. Based on its consideration of the evidence on the record of this hearing, the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, renews the operating licence for a SLOWPOKE-2 non-power nuclear reactor issued to the Corporation de l’École Polytechnique de Montréal for its facility located in Montréal, Quebec. The renewed licence, PERFP-9A.00/2033, is valid from July 1, 2023, to June 30, 2033.

Original document in French is signed by – e-Doc 7069692

June 21, 2023

Marcel Lacroix

Date

Member

Canadian Nuclear Safety Commission

Appendix A – Intervenor

Intervenor – Written Submission	Document Number
David Winfield	CMD 23-H2.2