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**ORIGINAL/ORIGINAL**

**CMD : 22-H106**

**Date signed/Signé le : 14 OCTOBER 2022**

Issue Required Approval(s) for

Délivrer l'approbation requise pour

**Nordion (Canada) Inc.  
Financial Guarantee**

**Garantie financière pour  
Nordion (Canada) Inc.**

Hearing in writing based solely on  
written submissions

Audience par écrit fondée uniquement  
sur des mémoires

Scheduled for:  
December 2022

Prévue pour :  
Décembre 2022

Submitted by:  
CNSC Staff

Soumise par :  
Le personnel de la CCSN

**Summary**

This CMD pertains to a request for a decision regarding:

- Revision to the financial guarantee for Nordion (Canada) Inc.

The following action is requested of the Commission:

- Accept CNSC staff's recommendation for the proposed revision to Nordion's financial guarantee.

The following item is attached:

- Current licence NSPFOL-11A.01/2025

**Résumé**

Le présent CMD concerne une demande de décision au sujet de :

- Une révision à la garantie financière de Nordion (Canada) Inc. (Nordion).

La Commission pourrait considérer prendre les mesures suivantes :


- Accepter la recommandation du personnel de la CCSN au sujet de la révision proposée à la garantie financière de Nordion.

Les pièces suivantes sont jointes :

- Licence actuelle NSPFOL-11A.01/2025

**Signed/signé le**

14 October 2022



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Patrick Burton

**Director General (Acting)**

Directorate of Nuclear Cycle and Facilities Regulation

**Directeur général (Intérimaire) de la**

Direction de la réglementation du cycle et des installations nucléaires

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## EXECUTIVE SUMMARY

CNSC staff would like to acknowledge that the Nordion facility is located on the traditional unceded territory of the Algonquin Anishnaabeg peoples.

In accordance with subsection 24(5) of the [Nuclear Safety and Control Act](#) (NSCA), a licence may contain a condition that the applicant provide a financial guarantee in a form that is acceptable to the Commission. Accordingly, licence condition 1.3 of Nordion's current licence NSPFOL-11A.01/2025 requires "*The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission*" and 12.2 requires "*The licensee shall implement and maintain a decommissioning strategy*". [Regulatory Guide G-206](#), *Financial Guarantees for the Decommissioning of Licensed Activities* provides guidance regarding the establishment and maintenance of measures to fund the decommissioning of activities licensed by the CNSC. The financial guarantee must be reviewed and updated every five years, or when there are material changes to the licensee's operational activities.

In March 2022, Nordion (Canada) Inc. (Nordion) submitted a revised preliminary decommissioning plan (PDP), SE-LIC-009 (Rev. 6), *Preliminary Decommissioning Plan for Class 1B Facility* (Kanata Operations Building). The cost estimate in the revised PDP is \$35,003,046.00 CAD, which is a reduction of \$10,121,702 CAD from the existing financial guarantee amount of \$45,124,748 CAD. The reduction is attributed primarily to the removal of decommissioning activities and costs for which BWXT Medical Ltd. (BWXT Medical; formerly BWXT ITG Canada) is now responsible under their licence NSPFL-15.00/2031. Nordion has proposed to amend the existing Letter of Credit for the revised amount of \$6,342,685, the estimated costs of the Safe State of Shutdown Activities in the PDP, and a Surety Bond for the remaining \$28,660,361 of the PDP cost estimate.

CNSC staff assessed the Nordion submission and conclude that Nordion's submission meets the regulatory criteria of Regulatory Guide G-206, *Financial Guarantees for the Decommissioning of Licensed Activities*, and provides an adequate cost estimate for the future decommissioning activities.

CNSC staff recommend that the Commission accept the revised financial guarantee proposed by Nordion. The only changes to the financial instruments currently in place are the dollar amounts.

Referenced documents in this CMD are available to the public upon request.

# 1 OVERVIEW

## 1.1 Background

Nordion (Canada) Inc. (Nordion) operates a Nuclear Substance Processing facility under a Class 1B operating licence, NSPFOL-11A.01/2025 [1]. The facility is in an industrial area approximately 20 km west of downtown Ottawa, Ontario, 447 March Road. Nordion provides cobalt-60 (Co-60) sealed sources and gamma irradiation systems for medical devices, food safety and health care industries, and innovative applications. Operations, including handling, storage, encapsulation, measurement, and shipping of Co-60 sealed sources, take place in the Cobalt Operations Facility of the Kanata Operations Building (KOB), which is a shared building with BWXT Medical. BWXT Medical holds a Class 1B operating licence for a Nuclear Substance Processing facility [2].

**Figure 1: Aerial view of Nordion’s Cobalt Operations Facility (outlined in orange)** (Source: Nordion (Canada) Inc.)



In 2015, the Commission renewed Nordion’s operating licence for a ten-year period, valid from November 1, 2015, until October 31, 2025 [3].

Licence condition 12.2 of Nordion’s operating licence requires Nordion to maintain a decommissioning strategy. To meet this licence condition, Nordion maintains a preliminary decommissioning plan (PDP) that includes the expected costs associated with decommissioning the Nordion Cobalt Operations Facility (COF). The COF (Figure 2) houses facilities for the handling, (hot cells, pools), storage, encapsulation, measurement, and shipping of high activity level cobalt 60 (Co-60) sealed sources and receiving depleted sealed sources for re-use.

Licence condition 1.3 requires Nordion to maintain a financial guarantee for decommissioning that is acceptable to the Commission, to ensure that the financial guarantee remains valid and in effect, and adequate to fund the PDP.



**Figure 2:** First row: a hot cell and storage pool, second row: Co-60 containers and containers with depleted sealed sources. (*Source: Nordion (Canada) Inc.*)



The financial guarantee for decommissioning is to be reviewed and revised by Nordion every five years, when the Commission requires, or following a revision of the PDP.

Nordion submitted a revised PDP and cost estimate to the CNSC in 2015, which was accepted by the Commission as part of Nordion's licence renewal decision.

A proposed financial guarantee was submitted in 2020, but it was decided not to bring it to the Commission because: the financial guarantee amount did not change substantially; and to await a decision from the Commission on BWXT Medical's licence application, which, if granted, would allow removal of relevant components from the Nordion financial guarantee and result in a significant change. BWXT Medical was granted a Class IB licence by the Commission in October 2021.

In early 2022, Nordion submitted a PDP, SE-LIC-009 (Rev.6), *Preliminary Decommissioning Plan for Class 1B Facility* (Kanata Operations Building) [4]. The cost estimate in the revised PDP is \$35,003,046.00 CAD, which is a reduction of \$10,121,702 CAD from the existing financial guarantee amount of \$45,124,748 CAD. The reduction is attributed primarily to the removal of decommissioning activities and costs for which BWXT Medical is now responsible under their licence NSPFL-15.00/2031 [2].

## 1.2 Highlights

- Nordion’s preferred decommissioning strategy is the “Prompt decommissioning strategy” as outlined in CSA standard N294 *Decommissioning of facilities containing nuclear substances*. The updated PDP follows the same general approach and methodology as the current Nordion PDP which was accepted by the Commission in September 2015 [3].
- In 2018, BWXT Medical became the owner of Nordion’s former medical isotope business, including the radiochemical manufacturing operations in Ottawa, Ontario. In October 2021, BWXT Medical was granted a Class IB licence for these operations in Ottawa [5].
- The cost estimate in the revised Nordion PDP is \$35,003,046.00 CAD, which is a reduction of \$10,121,702 CAD from the existing financial guarantee amount of \$45,124,748 CAD. The reduction is attributed primarily to the removal of decommissioning activities and costs for which BWXT Medical is now responsible under their licence NSPFL-15.00/2031.
- The proposed financial instruments remain the same as current [6]– a letter of credit and a surety bond [7].
- The revised Nordion PDP continues to include decommissioning cost estimates associated with the remaining SLOWPOKE (Safe LOW Power (K) Critical Experiment) Reactor components.
- Best Theratronics Ltd. has in place a decommissioning plan that includes any remaining materials at Nordion. As such, the disposal of Best Theratronics’s source materials are no longer included in Nordion’s decommissioning cost estimates.

## 1.3 Overall Conclusions

CNSC staff have concluded that Nordion’s revised preliminary decommissioning plan provides an acceptable strategy and credible cost estimate.

The revised PDP and changes to the cost estimate meet regulatory requirements [8, 9] as specified in:

- CSA N294 *Decommissioning of Facilities Containing Nuclear Substances* [10]; and
- [CNSC Regulatory Guide G-219 \*Decommissioning Planning for Licensed Activities\*](#).

Nordion’s proposed financial guarantee is acceptable and adequate for future decommissioning of its facility, and is consistent with

- [CNSC Regulatory Guide G-206 \*Financial Guarantees for the Decommissioning of Licensed Activities\*](#)

CNSC staff recommend the Commission to accept the proposed:

- financial guarantee in the amount of \$35,003,046.00 CAD, and
- instruments of financial guarantee in the form of Letter of Credit and surety bond.

On Commission's acceptance of the financial guarantee Nordion will put in place the amended financial instruments. The final executed (signed) instruments will be delivered within a reasonable period upon the acceptance of the Commission.

Once the amount and financial instruments are submitted and accepted, CNSC staff will make an administrative change to the licence conditions handbook (LCH) [11].

## 1.4 Overall Recommendations

CNSC staff recommend the following:

That the Commission accept the proposed financial guarantee for Nordion in the amount of \$35,003,046.00 CAD.

## 2 MATTERS FOR CONSIDERATION

### 2.1 Background Information

In accordance with subsection 24(5) of the *Nuclear Safety and Control Act* (NSCA), a licence may contain a condition that the applicant provide a financial guarantee in a form that is acceptable to the Commission.

Accordingly, licence conditions 1.3 and 12.2 of Nordion's current licence NSPFOL-11A.01/2025 [1] require "*The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission*" and "*The licensee shall implement and maintain a decommissioning strategy*", respectively.

[Regulatory Guide G-206, \*Financial Guarantees for the Decommissioning of Licensed Activities\*](#) provides guidance regarding the establishment and maintenance of measures to fund the decommissioning of activities licensed by the CNSC.

Nordion currently maintains a financial guarantee of \$45,124,748 CAD. This financial instrument and amount were accepted by the Commission during the 2015 Nordion licence renewal [3].

On July 30, 2018, Sotera Health, Nordion's parent company, sold the medical isotopes segment of Nordion's business to BWXT Medical. With the sale, BWXT Medical became the owner of Nordion's former medical isotope business, including the radiochemical manufacturing operations in Ottawa, Ontario. BWXT Medical was subsequently issued a Class 1B operating licence for a Nuclear Substance Processing facility by the Commission after a public hearing process, specifically for the Nuclear Medicine Production Facility (NMPF) and Kanata Radiopharmaceutical Manufacturing Facility (KRMF) within the KOB.

BWXT Medical is responsible for the decommissioning of the NMPF and KRMF and as part of the Record of Decision [5] the Commission accepted BWXT Medical's proposed financial guarantee to do so.

As such, Nordion submitted a revised PDP and financial guarantee reflecting the removal of the costs associated with the decommissioning of the BWXT Medical facilities.

Acceptance of the proposed financial guarantee by the Commission does not require an amendment to the terms and conditions set out in Nordion's operating licence (NSPFOL-11A.01/2025).

Regulatory documents [REGDOC-2.11.2](#), *Decommissioning*, and [REGDOC-3.3.1](#), *Financial Guarantees for the Decommissioning of Nuclear Facilities and Termination of Licensed Activities*, were published in January 2021. Nordion had started preparing the updated financial guarantee before the publication of these regulatory documents [12]. As of today, Nordion has not formally implemented REGDOC-2.11.2 and REGDOC-3.3.1. CNSC staff, however, have assessed the updated financial guarantee submission against the requirements of REGDOC-3.3.1 and determined that Nordion's submissions meet the regulatory criteria set in the document. CNSC staff expect the next revision of Nordion's PDP to incorporate the requirements of these new regulatory documents in its submission.

## 2.2 Preliminary Decommissioning Plan

Pursuant to Nordion's licence condition 12.2 "*The licensee shall implement and maintain a decommissioning strategy*". Nordion submitted a revised PDP, SE-LIC-009 (Rev.6), *Preliminary Decommissioning Plan for Class 1B Facility (KOB)* [4].

The updated PDP follows a prompt decommissioning strategy, the same general approach and methodology as the current Nordion PDP which was accepted by the CNSC staff 2015 [3].

The initial activities required to remove radioactive and hazardous material inventories are all considered to be those required for placing the facility in a Safe State of Shutdown. The work packages are sequenced in order to allow for decay of short-lived radioisotopes to facilitate removal of some systems and components with minimum dose exposures. Decommissioning and revocation of the operating license will ensue the above preparation tasks. The PDP conservatively considers full material inventories at the time of the unforeseen cessation of normal operations.

The end-state objective of the PDP is to decommission the COF for unrestricted usage. The building and labs will remain largely intact, except for the removal of contaminated ductwork, concrete floors, walls, ceilings, and equipment. All radioactive material, any contaminated equipment and surfaces will be decontaminated for unrestricted disposal or disposed of at a licensed radioactive waste disposal facility.

Proposed decommissioning operations encompass:

- Active areas where radioactive materials are processed or handled in the COF including COF active ventilation.
- The decommissioning of the remaining components of the partially decommissioned SLOWPOKE Reactor; all that remains of the SLOWPOKE are activated components stored in the pool. The reactor and fuel were removed during earlier decommissioning activities, in the mid-1990s.
- The management and disposal of all wastes.

The NMPF, KRMF and COF buildings have independent ventilation systems and services that can be isolated and operated independently, making it possible to decommission each facility independently of the other.

Cobalt-60 raw material present at the time of cessation of operations will be encapsulated and manufactured into sealed source products with the profits from the sale of these sealed sources conservatively excluded from the decommissioning cost-estimate.

Appendix L of SE-LIC-009 (Rev.6), (PDP) gives the conceptual decommissioning schedule, anticipating completion of decommissioning in approximately 12 months. The schedule has five key milestones:

1. Commercial operations cease (start of PDP scope)
2. Detailed Decommissioning Planning
3. Radioactive and Hazardous Material Inventory Minimization
4. Decommissioning Operations
5. Terminate CNSC Licence

CNSC staff reviewed Nordion's PDP document, SE-LIC-009 (Rev. 6.) and found that it meets the review criteria based on CNSC Regulatory Guide G-219 and CSA N294-09 [8, 9].

### **2.3 Financial Guarantee Proposal**

Financial guarantees are intended to ensure that funding is available to make adequate provision for the health and safety of current and future generations and licensees establish adequate funds to pay for the decommissioning and termination of their licensed activities. Financial guarantees must be sufficient to cover the cost of decommissioning of nuclear facilities or termination of licensed activities authorized by the current licence.

Nordion Operating Licence NSPFOL-11A.01/2025 conditions 1.3 and 12.2 dictates that the licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission and the licensee shall implement and maintain a decommissioning strategy.

If the preliminary decommissioning plan is revised and significantly impacts the cost estimate for the financial guarantee, the expectation is that the financial guarantee is revised and submitted to the Commission for acceptance. In addition,

the financial guarantee for decommissioning is to be reviewed and revised by Nordion every five years [11], and when the Commission requires.

Nordion submitted a revised financial guarantee reflecting the removal of the costs associated with the decommissioning of the BWXT Medical Ltd., estimating the decommissioning cost at \$35,003,046.00 CAD. The financial guarantee will be fully funded with a Letter of Credit for \$6,342,685 CAD (the estimated costs of the Safe State of Shutdown) and a Surety Bond (the estimated cost of remaining decommissioning activities) for \$28,660,361 CAD. Overall, this reflects a reduction of \$10,121,702 CAD from the existing financial guarantee amount of \$45,124,748 CAD.

The same instruments and their associated terms and conditions currently in place, are proposed [6, 7]. The only aspect that has changed is the amounts associated with each instrument, as described above.

The break-down of the cost estimate for decommissioning is provided in **Table 1** covering the activities to safely decommission the COF and remaining SLOWPOKE- Reactor components.

The removal of the costs associated with the disposal of sealed source materials owned by Best Theratronics but stored at Nordion’s facility is no longer included in the cost estimates. Best Theratronics now has in place a Commission-approved decommissioning plan and associated financial guarantee that includes any remaining materials [13].

**Table 1: Breakdown of the decommissioning activities and costs**

<b>Item</b>	<b>Cost</b>
Property Tax	\$363,825
Electrical	\$435,833
Natural Gas	\$47,106
Water	\$17,071
Insurance	\$1,607,375
CNSC Fees	\$614,460
Administrative Sub-Total	\$3,085,670
Labor	\$15,191,807
Decommissioning Cobalt Operations	\$12,642,049
Decommissioning Remaining SLOWPOKE Reactor Components	\$783,810
Subtotal	\$31,703,337
Inflation (2% annually for 5 years)	\$3,299,709
<b>Total</b>	<b>\$35,003,046</b>

Nordion adopted a “decommission tomorrow” which means decommissioning will occur immediately following the cessation of operational activities. The cost estimate does not assume any reduction of nuclear substances or chemical hazardous waste during operations prior to decommissioning. The cost estimate

assumes that the work scope will be completed by (local) third party contractors. Appendices of SE-LIC-009 (Rev. 6.0), *Preliminary Decommissioning Plan for Class 1B Facility* (Kanata Operations Building) provide detailed information for the cost estimation, as well as supporting information for cost estimates and contingencies.

According to the PDP, when costs are based on firm quotations or existing fees/costs a contingency of 10% has been used. If there is more uncertainty as to existing conditions or decommissioning methods, such as for waste volumes, contamination levels and labor time requirement estimates, a contingency of 25% has been used.

CNSC staff reviewed Nordion's above amount and the form of the financial guarantee and conclude that they meet the criteria for financial instruments in CNSC Regulatory Guide G-206 [8, 9].

### **3 INDIGENOUS CONSULTATION AND ENGAGEMENT**

The common law duty to consult with Indigenous peoples applies when the Crown contemplates actions that may adversely impact potential or established Indigenous and/or treaty rights. Based on the information reviewed, including the information received in Nordion's revised PDP, CNSC staff have determined that the request is an administrative change and is not likely to cause any new adverse impacts to Indigenous and/or treaty rights. Therefore, the duty to consult is not triggered in relation to this request.

### **4 OTHER MATTERS OF REGULATORY INTEREST**

#### **4.1 Environmental Assessment**

CNSC staff have reviewed the application under the NSCA and concluded that there are no impacts to the environment because of this request.

## 5 OVERALL CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Overall Conclusions

CNSC staff have concluded that:

- The revised preliminary decommissioning plan provides a credible cost estimate for the future decommissioning of the Nordion COF, and is consistent with CNSC Regulatory Guide G-219, *Decommissioning Planning for Licensed Activities* and CSA standard N294-09, *Decommissioning of Facilities Containing Nuclear Substances* [10].
- The proposed financial guarantee is adequate for the future decommissioning of the Nordion COF and is consistent with CNSC Regulatory Guide G-206, *Financial Guarantees for the Decommissioning of Licensed Activities*.

### 5.2 Overall Recommendations

CNSC staff recommend the following:

- That the Commission accept the proposed financial guarantee for Nordion in the amount of \$35,003,046.



## REFERENCES

1. Nordion (Canada) Inc. Class IB Nuclear Substance Processing Facility Operating Licence, NSPFOL-11A.01/2025 February 26, 2019 (e-Doc 5784149)
2. BWXT Medical Ltd, Class IB Nuclear Substance Processing Facility Licence, October 8, 2021 (e-Doc 6438142)
3. Record of Proceedings, including Reasons for Decision, *Application to Renew the Nuclear Substance Processing Facility Operating Licence for Nordion (Canada) Inc.*, August 19, 2015 (e-Doc 4850980)
4. *Preliminary Decommissioning Plan for Class 1B Facility* (Kanata Operations Building), SE-LIC-009, Rev. 6.0, January 13, 2022, (e-Doc 6767574)
5. Record of Decision BWXT Medical Ltd, *Application for the Issuance of a Class IB Nuclear Substance Processing Facility Operating Licence* October 8, 2021 (e-Doc 6650722)
6. Nordion Letter of Credit and Surety Bond (e-Docs, 4824178, 4872340), August 25, 2015 and October 29, 2015.
7. Updated surety bond and LC, (e-Doc 6872722), September 15, 2022.
8. Memo, G. Steedman to J. Duhaime, WDD Review of Nordion Inc. Preliminary Decommissioning Plan and Financial Guarantee, December 7, 2021 (e-Doc 6693954)
9. Correspondence, G. Steedman to I. Erdebil, Nordion Decommissioning Plan – Response to CNSC Comments and Update to Remove BWXT Activities, January 17, 2022 (e-Doc 6862988)
10. CSA Group, N294-09, Decommissioning of Facilities Containing Nuclear Substances, 2009.
11. Licence Conditions Handbook, Nordion Nuclear Substance Processing Facility, March 8, 2017, (e-Doc 5784160)
12. Update of SE-LIC-009 (Rev. 5), Preliminary Decommissioning Plan for (Nordion) Class 1B Facility (KOB), December 2020 (e-Doc 6452132)
13. Record of Decision in the Matter of Best Theratronics Limited, July 14, 217 (e-Doc 5298155)

## GLOSSARY

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

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

Glossary Term	Glossary Definition
CAD	Canadian Dollar
CMD	Commission Member Document
Co-60	Cobalt-60
CNSC	Canadian Nuclear Safety Commission
COF	Cobalt Operations Facility
NMPF	Nuclear Medicine Production Facility
KRMF	Kanata Radiopharmaceutical Manufacturing Facility
KOB	Kanata Operations Building
NSCA	Nuclear Safety and Control Act
PDP	Preliminary Decommissioning Plan
SLOWPOKE	Safe LOW Power (K)Critical Experiment

## **A. BASIS FOR THE RECOMMENDATIONS(S)**

### **A.1 Regulatory Basis**

The regulatory basis for the recommendations presented in this CMD is as follows:

#### ***Nuclear Safety and Control Act***

Subsection 24(5) of the *Nuclear Safety and Control Act* provides that a licence may contain any term or condition that the Commission considers necessary for the purposes of the Act, including a condition that the applicant provide a financial guarantee in a form that is acceptable to the Commission.

Subsection 24(6) of the *Nuclear Safety and Control Act* provides that the Commission may authorize the application of the proceeds of any financial guarantee referred to in subsection (5) in such manner as it considers appropriate for the purposes of this Act.

Subsection 24(7) of the *Nuclear Safety and Control Act* provides for the means by which a refund may be granted for any funds that have not been spent.

#### ***General Nuclear Safety and Control Regulations***

The *General Nuclear Safety and Control Regulations* requires under paragraph 3(1)(1) that a licence application contains a description of any proposed financial guarantee relating to the activity to be licensed.

#### ***Class I Nuclear Facilities Regulations***

Paragraph 3(k) of the *Class I Nuclear Facilities Regulations* required that an application for a licence in respect of a Class I nuclear facility, other than a licence to abandon, shall contain the proposed plan for the decommissioning of the nuclear facility or of the site.

#### ***Licence Condition 12.2 of the Nordion (Canada) Inc. licence NSPFOL-11A.01/2025***

The licensee shall implement and maintain a decommissioning strategy

#### ***Licence condition 1.3 of the Nordion (Canada) Inc. licence NSPFOL-11A.01/2025***

The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

## A.2 Technical Basis

The technical basis for the recommendation presented in this CMD is compared against the following:

- CNSC Regulatory Guide G-206, [\*Financial Guarantees for the Decommissioning of Licensed Activities\*](#)
- CNSC Regulatory Guide G-219, [\*Decommissioning Planning for Licensed Activities\*](#)
- CSA Standard N294-09, Decommissioning of Facilities Containing Nuclear Substances

# CURRENT LICENCE



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

PDF Ref: e-Doc 5784149  
Word Ref: e-Doc 5743436  
File / Dossier: 2.02

## CLASS IB NUCLEAR SUBSTANCE PROCESSING FACILITY OPERATING LICENCE

NORDION (CANADA) INC.

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- I) LICENCE NUMBER:** NSPFOL-11A.01/2025
- II) LICENSEE:** Pursuant to section 24 of the *Nuclear Safety and Control Act*, this licence is issued to:
- Nordion (Canada) Incorporated**  
**1115250-5**  
**447 March Road**  
**Ottawa, Ontario**  
**K2K 1X8**
- III) LICENCE PERIOD:** This licence is valid from the date signed and remains in effect until **October 31, 2025**, unless otherwise suspended, amended, revoked, replaced, or transferred.
- IV) LICENSED ACTIVITIES:**
- This licence authorizes the licensee to:
- operate the Nordion Nuclear Substance Processing Facility, at the location referred to in Section II of this licence (hereinafter “the processing facility”), for the purpose of processing and manufacturing nuclear substances and sealed sources used in health sciences and industrial applications;
  - possess, transfer, use, process, import, manage, store, or dispose, of nuclear substances that are required for, associated with, or arise from the activity described in a);

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e-Doc 5784149 (PDF)

- c) possess, transfer, use, import, or service prescribed equipment that are required for, associated with, or arise from the activity described in a);
- d) possess, transfer, use, service, or import prescribed equipment from clients; and
- e) possess and use prescribed information that is required for, associated with, or arise from the activity described in a).

**V) EXPLANATORY NOTES:**

- (a) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the [Nuclear Safety and Control Act](#) and associated Regulations.
- (b) The “[NORDION LICENCE CONDITIONS HANDBOOK \(LCH\)](#)” provides:
  - (i) compliance verification criteria in order to meet the conditions listed in the licence; and
  - (ii) applicable versions of documents and a process for version control of codes, standards or other documents that are used as compliance verification criteria in order to meet the conditions listed in the licence.

**VI) CONDITIONS:**

**1. GENERAL**

- 1.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:
- (i) the regulatory requirements set out in the applicable laws and regulations;
  - (ii) the conditions and safety and control measures described in the facility’s or activity’s licence and the documents directly referenced in that licence;
  - (iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

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

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Nordion (Canada) Inc.  
Nuclear Substance Processing Facility Operating Licence

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- 1.2 The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.
- 1.3 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.
- 1.4 The licensee shall implement and maintain a public information and disclosure program.

## **2. MANAGEMENT SYSTEM**

- 2.1 The licensee shall implement and maintain a management system.

## **3. HUMAN PERFORMANCE MANAGEMENT**

- 3.1 The licensee shall implement and maintain a training program.

## **4. OPERATING PERFORMANCE**

- 4.1 The licensee shall implement and maintain an operating program, which includes a set of operating limits.
- 4.2 The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

## **5. SAFETY ANALYSIS**

- 5.1 The licensee shall implement and maintain a safety analysis program.

## **6. PHYSICAL DESIGN**

- 6.1 The licensee shall implement and maintain a design program.

## **7. FITNESS FOR SERVICE**

- 7.1 The licensee shall implement and maintain a fitness for service program.

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**8. RADIATION PROTECTION**

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

**9. CONVENTIONAL HEALTH AND SAFETY**

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

**10. ENVIRONMENTAL PROTECTION**

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

**11. EMERGENCY MANAGEMENT AND FIRE PROTECTION**

- 11.1 The licensee shall implement and maintain an emergency preparedness program.
- 11.2 The licensee shall implement and maintain a fire protection program.

**12. WASTE MANAGEMENT**

- 12.1 The licensee shall implement and maintain a waste management program.
- 12.2 The licensee shall implement and maintain a decommissioning strategy.

**13. SECURITY**

- 13.1 The licensee shall implement and maintain a security program.



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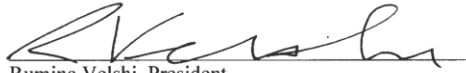
**14. SAFEGUARDS AND NON-PROLIFERATION**

14.1 The licensee shall implement and maintain a safeguards program.

**15. PACKAGING AND TRANSPORT**

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

SIGNED at OTTAWA, this 26 day of Feb, 2019



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

e-Doc 5743436 (Word)  
e-Doc 5784149 (PDF)