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CMD : 24-H103

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/08 DÉCEMBRE 2023

Issue Required Approval(s) for

Délivrer l'approbation requise pour la

**Revision of Financial  
Guarantee for BWXT  
Nuclear Energy Canada Inc.**

**Révision à la garantie  
financière de BWXT  
Nuclear Energy Canada Inc.**

Hearing in writing based solely on  
written submissions

Audience par écrit fondée uniquement  
sur des mémoires

Submitted by:  
CNSC Staff

Soumis par :  
Le personnel de la CCSN

e-Doc 7163430 (WORD)  
e-Doc 7164174 (PDF)

**Summary**

This CMD pertains to a request for a decision regarding:

- Revision to the financial guarantee for BWXT Nuclear Energy Canada Inc.

The following actions are requested of the Commission:

- Accept CNSC staff's recommendation for the proposed revision to BWXT Nuclear Energy Canada Inc's financial guarantee.

The following items are attached:

- Current licence FFL-3620.00/2030
- Current licence FFL-3621.00/2030

**Résumé**

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

- La révision à la garantie financière de BWXT Nuclear Energy Canada Inc.

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 BWXT Nuclear Energy Canada Inc.

Les pièces suivantes sont jointes:

- Le permis actuel, FFL-3620.00/2030
- Le permis actuel, FFL-3621.00/2030

**Signed/signé le**

08 December 2023

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Kavita Murthy

**Director General**

Directorate of Nuclear Cycle and Facilities Regulation

**Directrice générale de la**

Direction de la réglementation du cycle et des installations nucléaires

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>1 OVERVIEW.....</b>	<b>2</b>
1.1 Background .....	2
1.2 Highlights.....	4
1.3 Overall Conclusions.....	4
1.4 Overall Recommendations .....	4
<b>2 MATTERS FOR CONSIDERATION .....</b>	<b>5</b>
2.1 Background Information .....	5
2.2 Preliminary Decommissioning Plan (PDP) .....	5
2.3 Financial Guarantee Proposal .....	6
<b>3 INDIGENOUS CONSULTATION AND ENGAGEMENT.....</b>	<b>7</b>
<b>4 OTHER MATTERS OF REGULATORY INTEREST.....</b>	<b>7</b>
4.1 Environmental Assessment .....	7
<b>5 OVERALL CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>8</b>
5.1 Overall Conclusions.....	8
5.2 Overall Recommendations .....	8
<b>REFERENCES .....</b>	<b>9</b>
<b>GLOSSARY.....</b>	<b>10</b>
<b>A. BASIS FOR THE RECOMMENDATIONS .....</b>	<b>11</b>
A.1 Regulatory Basis .....	11
A.2 Technical Basis .....	12
<b>CURRENT LICENCE - TORONTO.....</b>	<b>13</b>
<b>CURRENT LICENCE - PETERBOROUGH.....</b>	<b>17</b>

## EXECUTIVE SUMMARY

BWXT Nuclear Energy Canada Inc. (BWXT) operates nuclear fuel fabrication facilities in Toronto, Ontario and Peterborough, Ontario. These facilities are within the traditional territory of the Wendat, Anishinabek Nation, and the territory covered by the Williams Treaties with the Michi Saagiig and Chippewa Nations. Combined, the facilities process uranium-di-oxide to manufacture fuel bundles for the Darlington and Pickering Nuclear Generating Stations.

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. BWXT's licences for the Toronto and Peterborough facilities have such a condition, and the financial guarantee is required to be reviewed and updated every 5 years, or when there are material changes to the licensee's operational activities.

BWXT currently maintains a financial guarantee of ~C\$48.1 million for the safe decommissioning of existing operations at the Toronto and Peterborough facilities. To fulfill the 5-year update requirement, BWXT conducted a review and submitted a revised preliminary decommissioning plan (PDP) and associated cost estimate to the Canadian Nuclear Safety Commission (CNSC) in December 2022. BWXT's revised cost estimate for decommissioning is ~C\$30.5 million. This is a decrease of ~C\$17.5 million, due to the selection of an alternate waste processor/disposal site, reduced labor costs and lower administration costs.

CNSC staff reviewed BWXT's revised PDP and confirmed that the decommissioning strategy and facility end state remains the same as that proposed by BWXT as part of its 2020 licence renewal. In addition, the revised PDP meets regulatory requirements as specified in [CSA N294:19 Decommissioning of facilities containing nuclear substances](#) and [REGDOC-2.11.2, Decommissioning](#).

BWXT funds its current financial guarantee using a combination of an irrevocable letter of credit and a surety bond and has proposed to use the same type of financial instruments to fund the updated costs. CNSC staff recommend that the Commission accept the revised financial guarantee proposed by BWXT as its proposal meets the requirements specified in CNSC [REGDOC-3.3.1, Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities](#) for providing adequate funding towards decommissioning of its licensed facilities.

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

# 1 OVERVIEW

## 1.1 Background

BWXT Nuclear Energy Canada Inc. (BWXT) operates 2 Class IB nuclear facilities that together manufacture Canada Deuterium Uranium (CANDU) nuclear reactor fuel bundles for use at Ontario Power Generation's Pickering and Darlington nuclear power plants under 2 separate nuclear fuel facility licences, FFL-3621.00/2030 for Toronto [1] and FFL-3620.00/2030 for Peterborough [2].

### Toronto Facility

BWXT's Toronto facility is located at 1025 Lansdowne Avenue, Toronto, Ontario and produces natural and depleted uranium dioxide (UO<sub>2</sub>) fuel pellets that are shipped to Peterborough for further processing. This facility, which has been producing nuclear fuel pellets for nuclear reactors since 1965, consists of 2 buildings. The first building is used to conduct pellet production processes, and the second building is used to store, segregate, and ship waste arising from the licensed activities.

**Figure 1-1: Aerial view of the BWXT Toronto facility**

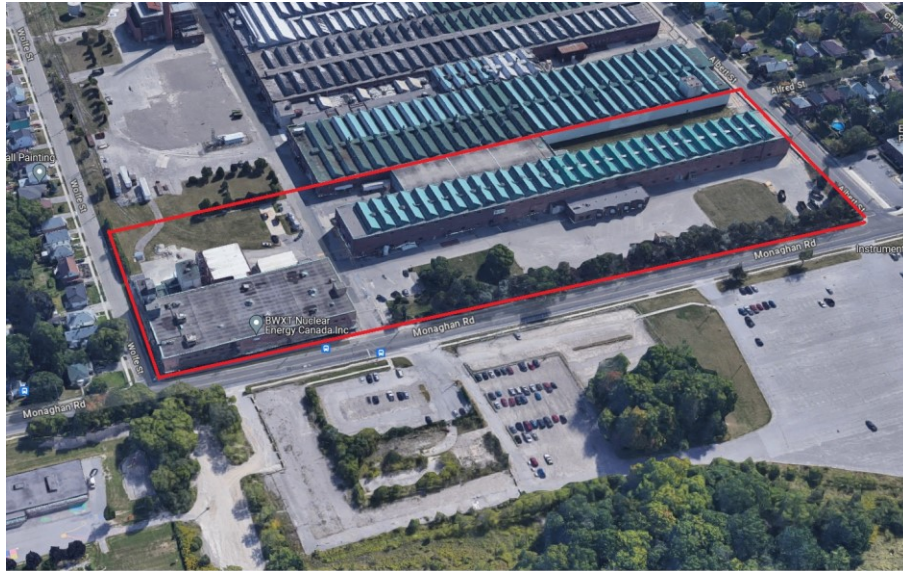


(Source: Google Maps)

### Peterborough Facility

BWXT's Peterborough facility is located at 1160 Monaghan Road, Peterborough, Ontario and manufactures nuclear fuel bundles using the natural and depleted UO<sub>2</sub> pellets shipped from BWXT's Toronto facility and zircalloy tubes manufactured in-house. Under the current licence, the Peterborough facility also operates a fuel services business involved with the manufacturing and maintenance of equipment for use in nuclear power plants.

**Figure 1-2: Aerial view of the BWXT Peterborough facility**



*(Source: Google Maps)*

In 2020, the Commission renewed BWXT’s operating licence for both the Toronto and Peterborough facilities for a 10-year period, expiring in December 2030 ([Record of Decision](#)). There have been no amendments to BWXT’s operating licences since their issuance.

BWXT’s Toronto and Peterborough licences (LC. 11.2) require the licensee to maintain a decommissioning plan. To meet this licence condition, BWXT maintains a preliminary decommissioning plan (PDP) that includes the expected costs associated with decommissioning the Toronto and Peterborough facilities. Licence condition G.3 present in the respective facility licences also requires BWXT to maintain a financial guarantee for decommissioning that is acceptable to the Commission.

BWXT’s current PDP was last submitted in March 2019. BWXT is required to conduct a review of its PDP every 5 years and a revised PDP was due by March 2024. However, BWXT conducted an early review of its PDP by a year for both the Toronto and Peterborough facilities and submitted a revised PDP [3, 4] and associated cost estimate to the CNSC.

## 1.2 Highlights

- BWXT’s decommissioning strategy calls for prompt removal and off-site disposal of radioactive contamination and beryllium waste in excess of established clearance levels. This approach aims to release the entire licensed operation from regulatory control for reuse or demolition of the structures. Because of this approach, there is no predicted requirement for long-term institutional controls. This strategy is unchanged from what was presented to the Commission previously in 2020 and aligns with [CSA N294:19 \*Decommissioning of facilities containing nuclear substances\*](#).
- The proposed financial guarantee to cover decommissioning costs is C\$ 30,498,884, which is a decrease of ~ C\$ 17.5 million for the Toronto and Peterborough facilities.
- The proposed financial instruments remain the same type as current – a combination of an irrevocable letter of credit and surety bond.
- Acceptance of the proposed financial guarantee by the Commission does not require an amendment to the terms and conditions set out in BWXT’s operating licences, FFL-3621.00/2030 for Toronto [1] and FFL-3620.00/2030 for Peterborough [2].

## 1.3 Overall Conclusions

CNSC staff have concluded that:

- BWXT’s revised preliminary decommissioning plan provides an acceptable strategy and credible cost estimate, and is consistent with CNSC [REGDOC-2.11.2, \*Decommissioning\*](#) and CSA N294:19 *Decommissioning of facilities containing nuclear substances*.
- BWXT’s proposed financial guarantee is acceptable and adequate for future decommissioning of its Toronto and Peterborough facilities and is consistent with CNSC [REGDOC-3.3.1, \*Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities\*](#).

## 1.4 Overall Recommendations

CNSC staff recommend the following:

- That the Commission accept CNSC staff’s recommendation for the proposed revision to BWXT’s financial guarantee in the amount of C\$30,498,884.



## 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 condition G.3 of the current licences, FFL-3621.00/2030 for Toronto [1] and FFL-3620.00/2030 for Peterborough [2] held by BWXT Nuclear Energy Canada Inc (BWXT) requires the licensee to maintain a financial guarantee acceptable to the Commission. The CNSC [REGDOC-3.3.1, Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities](#) sets out requirements and guidance for the establishment and maintenance of funding for the decommissioning of facilities and termination of activities.

BWXT currently maintains a financial guarantee of ~ C\$ 48.1 million to cover the decommissioning costs for its Toronto and Peterborough facilities. This financial guarantee was accepted by the Commission during the 2020 licence renewal ([Record of Decision](#)).

BWXT submitted a revised PDP [3, 4] for the Toronto and Peterborough facilities that were assessed by CNSC staff to meet the requirements under CNSC REGDOC-2.11.2, Decommissioning and CSA, N294-19, Decommissioning of facilities containing nuclear substances. Based on this assessment, BWXT has requested an update to their financial guarantee [5]. BWXT's revised PDP estimates the decommissioning cost of its Toronto and Peterborough facilities as C\$30,498,884, a reduction of approximately 37%. BWXT has proposed to use the same type of financial instruments to reflect the decrease in decommissioning costs. Therefore, a decision on the acceptance of the proposed financial guarantee by the Commission is required.

### 2.2 Preliminary Decommissioning Plan (PDP)

In December 2022, BWXT submitted to the CNSC a revised PDP for its Toronto and Peterborough facilities to meet the requirements of licence condition 11.2 of its individual facility licences, FFL-3621.00/2030 for Toronto [1] and FFL-3620.00/2030 for Peterborough [2].

In the revised PDP, BWXT has stated that its preferred decommissioning strategy for the Toronto and Peterborough facilities is to release the entire licensed operations from regulatory control for reuse or demolition of the structures (including land and buildings). This strategy calls for the prompt removal and off-site disposal of radioactive contamination, beryllium waste and any other hazardous materials in excess of established clearance levels. Because of this strategy, as such there is no predicted requirement for long-term institutional controls. This decommissioning strategy is unchanged from what BWXT proposed in 2020 and aligns with [CSA N294:19 \*Decommissioning of facilities containing nuclear substances\*](#).

The revised PDP includes a breakdown of decommissioning costs associated with the proposed decommissioning strategy. The total cost of decommissioning the Toronto and Peterborough facilities is estimated to be C\$30,498,884 [4]. The cost is split between the 2 facilities, C\$10,069,695 for the Peterborough facility and C\$20,429,189 for the Toronto facility.

- For the Toronto facility, the decrease in the decommissioning cost estimate was primarily due to the use of Sealand containers as opposed to previously using B-25 containers and the selection of US Ecology as the disposal site. Sealand containers are used to transport contaminated Low-Level Waste (LLW) arising from decommissioning activities to the disposal site. This resulted in a decrease of ~C\$ 14.5 million. Other changes to decommissioning costs included a decrease of C\$762,685 due to disposing the waste at US Ecology LLW disposal site rather than Canadian Nuclear Laboratories Inc. (CNL) and a decrease of C\$ 766,178 for program management costs.
- For the Peterborough facility, the decommissioning cost estimate showed a decrease of C\$705,427 from its current PDP. The decrease in the cost estimate was a result of maximizing the use of US Ecology disposal site, reducing labour required to prepare packages by changing from 55-gallon waste drums to Sealand containers, eliminating cleaning of some unaffected areas and a reduction in administrative costs.

CNSC staff assessed and concluded that the submitted PDP meets the criteria and guidance set in CNSC [REGDOC-2.11.2, \*Decommissioning\*](#) and CSA, N294-19, *Decommissioning of facilities containing nuclear substances*, 2019. The revised PDP provides a credible cost estimate for the future decommissioning of BWXT's Toronto and Peterborough facilities.

### 2.3 Financial Guarantee Proposal

Financial guarantees are intended to ensure that sufficient funding is available to cover the cost of decommissioning of nuclear facilities or termination of licensed activities authorized by the current licence as specified in [REGDOC-3.3.1, \*Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities\*](#).

Licence condition G.3 of the BWXT licences FFL-3621.00/2030 for Toronto [1] and FFL-3620.00/2030 for Peterborough [2] dictates that BWXT shall maintain a financial guarantee for decommissioning that is acceptable to the Commission. BWXT currently maintains a financial guarantee, in the form of an irrevocable letter of credit and a surety bond that was accepted by the Commission during the BWXT licence renewal in 2020 ([Record of Decision](#)).

If the PDP is revised and significantly impacts the cost estimate for the financial guarantee, the expectation is that the financial guarantee will be revised and submitted to the Commission for acceptance. In addition, the financial guarantee for decommissioning is to be reviewed by licensees every 5 years, or at the Commission's request. Licensees may also request a review of their financial guarantee at any time.

CNSC staff reviewed BWXT's proposal [4, 5] to continue using an irrevocable letter of credit and a surety bond as financial instruments and concluded that it meets the criteria for financial instruments in CNSC [REGDOC-2.11.2, Decommissioning](#) and [CSA N294:19 Decommissioning of facilities containing nuclear substances](#).

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

The common law duty to consult with Indigenous peoples applies when the Crown contemplates actions that may adversely affect potential or established Indigenous and/or treaty rights. Based on the information reviewed, including the information received in BWXT's revised PDP for the Toronto and Peterborough facilities, CNSC staff have determined that this request 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 arising from 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 BWXT's Toronto and Peterborough facilities; and
- The proposed financial guarantee is adequate for the future decommissioning of BWXT's Toronto and Peterborough facilities.

### **5.2 Overall Recommendations**

CNSC staff recommend the following:

- That the Commission accept CNSC staff's recommendation for the proposed revision to BWXT Nuclear Energy Canada Inc.'s financial guarantee in the amount of C\$ 30,498,884.

## REFERENCES

- [1] Nuclear Facility Operating Licence, *BWXT Nuclear Energy Canada Inc., Toronto facility, FFL-3621.00/2030*, valid from January 01, 2021, to December 31, 2030, (e-Doc 6447298).
- [2] Nuclear Facility Operating Licence, *BWXT Nuclear Energy Canada Inc., Peterborough facility, FFL-3620.00/2030*, valid from January 01, 2021, to December 31, 2030, (e-Doc 6447298).
- [3] Submission, Updated Preliminary Decommissioning Plans for BWXT Nuclear Energy Canada Toronto and Peterborough facilities (e-Doc 6936527).
- [4] Submission, Response to CNSC staff review of Updated Preliminary Decommissioning Plans for BWXT Nuclear Energy Canada Toronto and Peterborough facilities (e-Doc 7118886).
- [5] Submission, Request for acceptance of Financial Guarantee for BWXT Nuclear Energy Canada Toronto and Peterborough Facilities (e-Doc 7166456).

## 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
BWXT	BWXT Nuclear Energy Canada Inc.
C\$	Canadian dollars
CANDU	Canada Deuterium Uranium
CMD	Commission member document
CNL	Canadian Nuclear Laboratories Inc.
CNSC	Canadian Nuclear Safety Commission
CSA	Canadian Standards Association
FFL	Fuel facility operating licence
NSCA	<i>Nuclear Safety and Control Act</i>
PDP	Preliminary decommissioning plan
REGDOC	Regulatory document
UO <sub>2</sub>	Uranium dioxide

## A. BASIS FOR THE RECOMMENDATIONS

### 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)(l) 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 11.2 of BWXT Nuclear Energy Canada Inc. Toronto facility licence FFL-3621.00/2030 and Peterborough facility licence FFL-3620.00/2030***

The licensee shall maintain a preliminary decommissioning plan.

#### ***Licence Condition G.3 of BWXT Nuclear Energy Canada Inc. Toronto facility licence FFL-3621.00/2030 and Peterborough facility licence FFL-3620.00/2030***

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

## A.2 Technical Basis

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

- CNSC [REGDOC-2.11.2, \*Decommissioning\*](#)
- CNSC [REGDOC-3.3.1, \*Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities\*](#)
- [CSA N294:19 \*Decommissioning facilities of containing nuclear substances\*](#)



## CURRENT LICENCE - TORONTO



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

PDF Ref: e-Doc 6447298  
Word Ref: e-Doc 6436418  
File / dossier: 2.02

### NUCLEAR FUEL FACILITY LICENCE

#### BWXT NUCLEAR ENERGY CANADA INC. TORONTO FACILITY

- 
- I) LICENCE NUMBER:** FFL-3621.00/2030
- II) LICENSEE:** Pursuant to section 24 of the *Nuclear Safety and Control Act*, this licence is issued to:
- BWXT Nuclear Energy Canada Inc.**  
(corporation #3303655)  
1160 Monaghan Road  
Peterborough, Ontario  
K9J 7B5
- III) LICENCE PERIOD:** This licence is valid from **January 1, 2021** to **December 31, 2030**, unless otherwise suspended, amended, revoked or replaced.
- IV) LICENSED ACTIVITIES:**
- This licence authorizes the licensee to:
- (i) operate and modify the Toronto nuclear fuel facility located at 1025 Lansdowne Avenue, Toronto, Ontario for the production of fuel pellets from natural and depleted uranium dioxide;
  - (ii) possess, transfer, use, process, package, manage and store nuclear substances and equipment associated with or arise from the activities described in (i).
- V) EXPLANATORY NOTES:**
- i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.
  - ii) 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.

BWXT Nuclear Energy Canada Inc.  
Nuclear Fuel Facility Licence

Page 2 of 4  
FFL-3621.00/2030

- iii) The BWXT Nuclear Energy Canada Inc. Facilities Licence Conditions Handbook (LCH) provides compliance verification criteria used to verify compliance with the conditions set out in this licence, information regarding delegation of authority and applicable versions of documents and a process for version control of codes, standards or other documents that are used as compliance verification criteria.

## VI) CONDITIONS:

The licensee shall comply with the following conditions, established pursuant to subsection 24(5) of the *Nuclear Safety and Control Act*.

### G. General

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

- (i) the regulatory requirements set out in the applicable laws and regulations;
- (ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence; and
- (iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

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

G.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.

G.3 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

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

### 1. Management System

1.1 The licensee shall implement and maintain a management system.

### 2. Human Performance Management

2.1 The licensee shall implement and maintain a training program.

### 3. Operating Performance

3.1 The licensee shall implement and maintain an operating program, which includes a set of operating limits.

- 3.2 The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.
- 4. Safety Analysis**
- 4.1 The licensee shall implement and maintain a safety analysis program.
- 5. Physical Design**
- 5.1 The licensee shall implement and maintain a design program.
- 5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.
- 6. Fitness For Service**
- 6.1 The licensee shall implement and maintain a fitness for service program.
- 7. Radiation Protection**
- 7.1 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.
- 8. Conventional Health and Safety**
- 8.1 The licensee shall implement and maintain a conventional health and safety program.
- 9. Environmental Protection**
- 9.1 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.
- 10. Emergency Management and Fire Protection**
- 10.1 The licensee shall implement and maintain an emergency preparedness program.
- 10.2 The licensee shall implement and maintain a fire protection program.
- 11. Waste Management**
- 11.1 The licensee shall implement and maintain a waste management program.
- 11.2 The licensee shall maintain a decommissioning plan.
- 12. Security**
- 12.1 The licensee shall implement and maintain a security program.

BWXT Nuclear Energy Canada Inc.  
Nuclear Fuel Facility Licence

Page 4 of 4  
FFL-3621.00/2030

**13. Safeguards**

13.1 The licensee shall implement and maintain a safeguards program.

**14. Packaging and Transport**

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

**15. Nuclear Facility Specific**

15.1 The commercial production of fuel pellets shall be conducted at either the Toronto facility or at the Peterborough facility, but not at both facilities.

SIGNED at OTTAWA, this 18th day of December 2020

Velshi,  
Rumina

Digitally signed by Velshi, Rumina  
DN: cn=CA, o=CC, ou=CNISC-CCSN, c=CA  
Velshi, Rumina  
Reason: I am the author of this document  
Location: your signing location here  
Date: 2020.12.18 16:38:47  
Field: Pkcs7SignedData, Version: 3.1.1

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

## CURRENT LICENCE - PETERBOROUGH



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

PDF Ref: e-Doc 6447290

Word Ref: e-Doc 6436437

File / dossier: 2.02

### NUCLEAR FUEL FACILITY LICENCE

#### **BWXT NUCLEAR ENERGY CANADA INC. PETERBOROUGH FACILITY**

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- I) LICENCE NUMBER:** FFL-3620.00/2030
- II) LICENSEE:** Pursuant to section 24 of the *Nuclear Safety and Control Act*, this licence is issued to:
- BWXT Nuclear Energy Canada Inc.**  
**(corporation #3303655)**  
**1160 Monaghan Road**  
**Peterborough, Ontario**  
**K9J 7B5**
- III) LICENCE PERIOD:** This licence is valid from **January 1, 2021** to **December 31, 2030**, unless otherwise suspended, amended, revoked or replaced.
- IV) LICENSED ACTIVITIES:**
- This licence authorizes the licensee to:
- (i) operate and modify the Peterborough nuclear fuel facility located at 1160 Monaghan road, Peterborough, Ontario for the purpose of;
    - a. production of fuel pellets from natural and depleted uranium dioxide;
    - b. manufacturing and testing of fuel bundles; and
    - c. processing contaminated equipment from offsite nuclear facilities
  - (ii) possess, transfer, use, process, package, manage and store nuclear substances and equipment associated with or arising from the activities described in (i); and
  - (iii) modify the Peterborough facility and commission equipment for the purpose of the production of fuel pellets described in (i) (a).

BWXT Nuclear Energy Canada Inc.  
Nuclear Fuel Facility Licence

Page 2 of 4  
FFL-3620.00/2030

**V) EXPLANATORY NOTES:**

- i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.
- ii) 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.
- iii) The BWXT Nuclear Energy Canada Inc. Facilities Licence Conditions Handbook (LCH) provides compliance verification criteria used to verify compliance with the conditions set out in this licence, information regarding delegation of authority and applicable versions of documents and a process for version control of codes, standards or other documents that are used as compliance verification criteria.

**VI) CONDITIONS:**

The licensee shall comply with the following conditions, established pursuant to subsection 24(5) of the *Nuclear Safety and Control Act*.

**G. General**

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

- (i) the regulatory requirements set out in the applicable laws and regulations;
- (ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence; and
- (iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

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

G.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.

G.3 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

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

**1. Management System**

1.1 The licensee shall implement and maintain a management system.

**2. Human Performance Management**

2.1 The licensee shall implement and maintain a training program.

**3. Operating Performance**

3.1 The licensee shall implement and maintain an operating program, which includes a set of operating limits.

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

**4. Safety Analysis**

4.1 The licensee shall implement and maintain a safety analysis program.

**5. Physical Design**

5.1 The licensee shall implement and maintain a design program.

5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

**6. Fitness For Service**

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

**7. Radiation Protection**

7.1 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.

**8. Conventional Health and Safety**

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

**9. Environmental Protection**

9.1 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.

**10. Emergency Management and Fire Protection**

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

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

BWXT Nuclear Energy Canada Inc.  
Nuclear Fuel Facility Licence

Page 4 of 4  
FFL-3620.00/2030

**11. Waste Management**

- 11.1 The licensee shall implement and maintain a waste management program.
- 11.2 The licensee shall maintain a decommissioning plan.

**12. Security**

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

**13. Safeguards**

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

**14. Packaging and Transport**

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

**15. Nuclear Facility Specific**

- 15.1 The licensee shall submit and implement an updated environmental monitoring program at the Peterborough facility prior to the commencement of production of fuel pellets as described in paragraph (i) (a) and (iii) of Part IV of this licence.
- 15.2 The licensee shall submit a final commissioning report related to production of fuel pellets as described in paragraph (i) (a), (iii) of Part IV of this licence that is acceptable to the Commission prior to commencement of commercial production of fuel pellets at the Peterborough Facility.
- 15.3 The commercial production of fuel pellets shall be conducted at either the Toronto facility or at the Peterborough facility, but not at both facilities.

SIGNED at OTTAWA, this 18th day of December 2020

**Velshi,  
Rumina**

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