



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada

# BWXT Nuclear Energy Canada

## Peterborough & Toronto Mid-Term Update (2021 – 2025)

Commission Meeting

May 27 and 28, 2026

CMD 26-M13.A

CNSC Staff Presentation

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# Presentation Outline

- About BWXT Nuclear Energy Canada Inc.
- 2020 Licence renewal and Commission Decision
- CNSC Regulatory Oversight
- CNSC Engagement
- Interventions
- Conclusions



# BWXT Nuclear Energy Canada Inc.

## BWXT NEC – Toronto (FFL-3621.00/2030):

- Licensed to produce uranium pellets using natural and depleted uranium dioxide powder

## BWXT NEC – Peterborough (FFL-3620.00/2030):

- Licensed to manufacture CANDU fuel bundles using pellets and zircalloy tubes
- Licensed to service contaminated equipment from nuclear facilities
- Authorized to conduct pelleting

**Facilities are located in industrial zones surrounded by residential areas**



**Both facilities have operated safely with no impact to the public or the environment.**



# 2020 Licence Renewal

**In March 2020, Commission conducted a licence renewal hearing:**

- Staff assessment and recommendations were captured in [CMD 20-H2](#) and [CMD 20-H2.A](#)
- 248 Interventions received covering several themes
- Staff's responses were captured in [CMD 20-H2.B](#)
- Undertakings related to topics reviewed during hearing were captured in [CMD 20-H2.C](#)

**In April 2020, Commission issued a [Continuation of Hearing](#) and directed additional sampling of beryllium in soil at Peterborough.**

- Supplementary CMD submissions ([CMD 20-H2.D](#) and [CMD 20-H2.E](#))



CNSC staff at the Toronto *Meet the Nuclear Regulator* outreach – January 22, 2020.  
Source: CNSC

# 2020 Commission Decision

## In December 2020, the Commission:

- Renewed the BWXT NEC's licence for a 10-year period, and issued separate licences for Toronto and Peterborough facilities
- Authorized conduct of pelleting operations in Peterborough, subject to 3 licence conditions
- In its Record of Decision DEC 20-H2, the Commission also:
  - Directed BWXT NEC to provide a mid-term update for the licence period
  - Directed CNSC staff to review regulatory performance of BWXT NEC annually as part of regulatory oversight reporting



CNSC staff during an inspection at BWXT Toronto. Source: CNSC

# CNSC

# Regulatory Oversight Activities

# CNSC Regulatory Oversight

CNSC staff conduct risk-informed regulatory oversight activities throughout the licensing period of a facility to verify compliance.

## CNSC staff's Compliance Verification Plan for BWXT NEC includes:

- Inspections
- Desktop reviews and technical assessments
- Verification of implementation of, and compliance with, revised REGDOCs & CSA Standards
- Event reporting review

**BWXT NEC's performance has been consistently rated as satisfactory in all 14 SCAs throughout the first half of the licence period.**

Safety and Control Area	Overall Rating
Management System	Satisfactory
Human Performance	Satisfactory
Operating Performance	Satisfactory
Safety Analysis	Satisfactory
Physical Design	Satisfactory
Fitness for Service	Satisfactory
Radiation Protection	Satisfactory
Conventional Health and Safety	Satisfactory
Environmental Protection	Satisfactory
Emergency Management and Fire Protection	Satisfactory
Waste Management	Satisfactory
Security	Satisfactory
Safeguards and Non-Proliferation	Satisfactory
Packaging and Transport	Satisfactory

# Overview of Inspections

- Inspections are based on a **10-year compliance verification plan** developed by a Facility Assessment and Compliance Team
- All SCAs have been inspected in the first 5 years of the licence period
- In 2025, there was 1 reactive CNSC-led Safeguards inspection at the Toronto facility

Activity	2021	2022	2023	2024	2025
CNSC Inspections	1*	4*	8	4	5
Notices of Non-Compliance	1	8	14	7	5
IAEA Safeguards Inspections	8	9	9	9	8

\*Each CNSC inspection in 2021 and 2022 covered both facilities.

Inspection findings were of low safety significance and CNSC staff did not identify any risk to the environment or to the health or safety of persons.



# Desktop Reviews / Regulatory Updates

## Periodic Review of Safety Documents and Updates:

- Safety Analysis Report (SAR) – Completed in April 2026
- Environmental Risk Assessment (ERA) – Completed in 2025
- Preliminary Decommissioning Plan (PDP) – Completed in 2024
- Financial Guarantee (FG) – Completed in 2024
- Fire Hazard Analysis (FHA) – Completed in April 2026

## Standards and REGDOC updates that have been implemented, or are in the process of implementation:

- CSA N393, NBCC 2020 and NFCC 2020 – Completed in 2021
- REGDOC-2.4.4 – Completed in 2024
- REGDOC-2.9.2 – In Progress
- CSA N288 series – In Progress

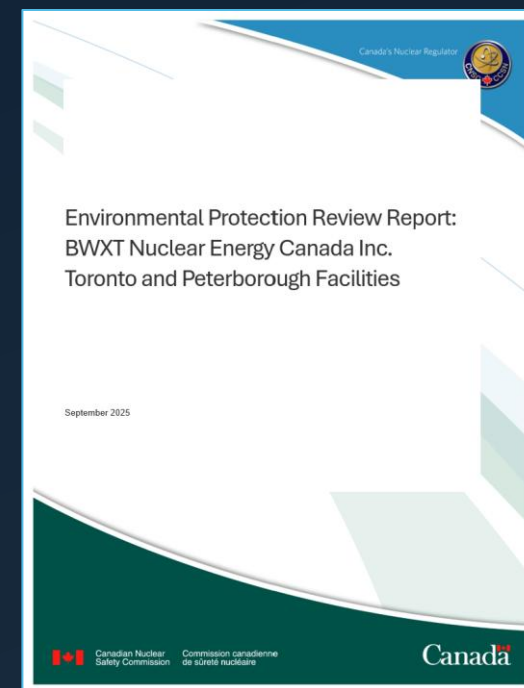
# Environmental Protection Review Report (EPRR)

**Assesses the licensee's environmental protection measures, and the impact to the health and safety of persons and the environment.**

- Updated in 2025
- Focuses on environmental performance, including environmental releases and potential risk posed to environment and human health from radiological or hazardous substances

## **Review is based on:**

- Compliance and technical assessments (e.g., Environmental Risk Assessment, Preliminary Decommissioning Plan)
- Licensee's own environmental monitoring results
- Independent verification activities (e.g., IEMP, regional health studies)
- Engagement with Indigenous Nations and communities, and the public



## **Environmental Protection Review**

**BWXT NEC continues to maintain effective environmental protection measures that adequately protect the environment, and the health and safety of persons.**

# Reportable Events

- [REGDOC-3.1.2](#) and associated regulations require the licensee to report certain events to the CNSC.
- During the first half of the licence period, **BWXT NEC Peterborough reported 15 events** and **BWXT NEC Toronto reported 3 events**.
- Events included beryllium occupational limit exceedances, sprinkler activation, contained spills, transport and off-site incidents, power outages, lost time injuries, security-related events.

Year	Number of Events	
	Peterborough	Toronto
2021	2	1
2022	4	1
2023	3	0
2024	3	0
2025	3	1
Total	15	3

CNSC staff are satisfied with BWXT NEC's corrective actions in response to these events.

# Public Information and Disclosure (PIDP)

**In 2020, BWXT NEC committed to improving its PIDPs.**

- Submitted an improvement plan including hiring dedicated resources towards public information and outreach
- Established a new functional Community Liaison Committee at Peterborough

**CNSC staff conducted a PIDP-focused inspection in 2024 to verify effectiveness of the improvements to the licensee's PIDPs.**

- The licensee's PIDPs meet requirements of REGDOC-3.2.1, *Public Information and Disclosure*
- CNSC staff noted improvements in social media outreach, targeted advertising, and incorporating public opinion feedback

**BWXT NEC's PIDPs are rated as satisfactory by CNSC staff  
and are commensurate with risk of facility operations.**



# CNSC Engagement

# CNSC Indigenous Engagement

- CNSC Staff attend regular meetings and provide updates on the facilities to interested Indigenous Nations and communities
- Ongoing monitoring of BWXT NEC's engagement and communication activities with interested Indigenous Nations and communities
- Collaborate with interested Indigenous Nations and communities on IEMP sampling and reporting activities, as well as the drafting of EPRR
- Invited interested Indigenous Nations and communities to participate in:
  - Information sessions on CNSC staff's annual Regulatory Oversight Report (ROR)
  - Providing comment on the content of the ROR
  - Information sessions on beryllium sampling campaign results
- Notified Indigenous Nations and communities of the opportunity to participate in the mid-term meeting

**CNSC staff are committed to building relationships and trust with Indigenous Nations and communities.**

# Independent Environmental Monitoring Program (IEMP)

IEMP sampling has been carried out at:

## BWXT NEC Peterborough:

In 2021 and 2024  
(sampling planned summer 2026).

## BWXT NEC Toronto:

In 2022 and 2025.



Analysis showed that the public and the environment are protected.

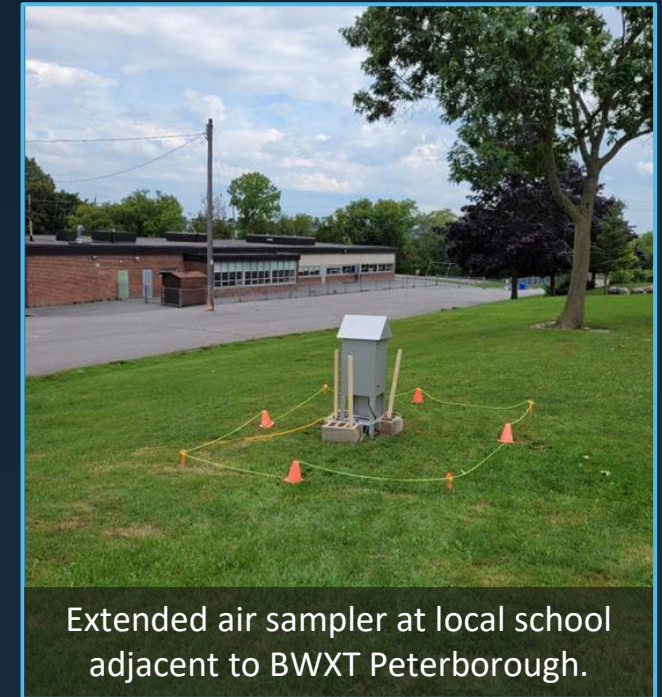


# Environmental Monitoring – Extended Beryllium Sampling (Peterborough)

## CNSC staff conducted extended air sampling in 2022.

- Developed sampling plan/approach in consultation with Dr. Aherne (Associate Professor, Trent University)
- Extended beryllium in air results were well below available guidelines (1800x below Ontario Ambient Air Quality Criteria)
- Disseminated results to the public and presented to the Board of Health for Peterborough and BWXT Peterborough Community Liaison Committee at information sessions

Beryllium continues to be monitored as part of regular IEMP sampling campaigns.



Extended air sampler at local school adjacent to BWXT Peterborough.

Levels of beryllium observed in air samples have been consistently below available guidelines that are protective of human health and the environment.



# CNSC Public Engagement

## CNSC staff have engaged members of the public concerning BWXT NEC's activities:

- Meetings with local organizations (e.g., Lakeland Public Health, BWXT NEC Community Liaison Committee)
- Consultation on a community-specific environmental monitoring plan for beryllium in air in 2021
- Information sessions about various activities around BWXT NEC facilities (e.g., on extended beryllium air sampling results and annual Regulatory Oversight Reports)
- Responding to inquiries via CNSC's Info Line
- Social media outreach activities



CNSC staff engaging the public at an information booth.

# Interventions

# Interventions

A total of **46** interventions were submitted for this mid-term update.

CNSC staff identified several themes similar to those raised in the 2020 licence renewal:

- Radiation risks, buffer zones and public dose
- Human health risks, location and socio-economic impact
- Environmental protection, beryllium emissions, ambient monitoring, and uranium emissions from pelleting
- Decommissioning liability and financial guarantee
- Emergency and fire response, safety analysis, and transport of contaminated material

CNSC staff previously addressed these in [CMD 20-H2.B](#).

# Interventions

CNSC staff identified the following new themes:

1. Ambient air and soil monitoring at Peterborough
2. Commission authorization for pelleting at the Peterborough facility
3. Integrated Regulatory Review Service (IRRS) mission findings and CNSC radiation protection framework
4. GE building demolition and cumulative effects of multiple toxins
5. Beryllium in air sampling (addressed in slide 16)



# 1. Ambient Soil and Air Monitoring at Peterborough

- Since 2020, and as directed by the Commission, BWXT NEC has conducted annual soil sampling adjacent to the Peterborough facility
- BWXT NEC's stack emissions (source monitoring) at Peterborough are monitored 24/7 and reported annually to the Commission
- Currently there is no ambient air monitoring at Peterborough due to very low emissions from the operations
- BWXT NEC must implement ambient air monitoring for uranium and establish baseline data before conducting any pelleting operations at Peterborough

**Current monitoring practices at Peterborough are adequate to ensure the protection of environment, health and safety.**

## 2. Commission Authorization for Pelleting at the Peterborough Facility

- There was an application for judicial review of the Commission's decision made to the Federal Court [*CARN v. BWXT NEC* (2022 FC 849)]

### On June 9, 2022, the Federal Court of Appeal:

- Reviewed four issues in the appeal including appropriate standard of review, principle of ALARA, justification and precautionary principle, sufficiency of the licence renewal application and legality of hold point licence conditions; and
- Concluded that the decision to authorize conduct of pelleting operations at Peterborough was lawful and reasonable, and dismissed the appeal seeking to have the licence decision overturned.

**Pelleting is an authorized activity at Peterborough with three facility-specific conditions.**

### 3. Integrated Regulatory Review Service (IRRS) mission findings and CNSC radiation protection framework

**In June 2024, CNSC hosted a team of experts from the IAEA to conduct a follow-up mission to evaluate progress since the original IRRS mission in 2019**

- Of the original 20 items from the 2019 mission, 12 were closed, including items related to Canada's approach to decommissioning and waste policy.
- CNSC staff note:
  - The Canadian Regulatory Framework meets the intent of the principle of justification
  - Dose constraints are implemented in Canada through REGDOC-2.9.2, *Environmental Protection-Controlling Releases to the Environment*
  - The CNSC's regulatory framework for radiation protection is robust and protective of workers, Canadians and the environment, and is subject to continuous review to identify improvements that will enhance safety

**CNSC is aligned with the IAEA safety standards and International best practices.**

## 4. GE Building Demolition and Contamination

### GE Vernova Inc. intends to demolish vacant buildings adjacent to BWXT NEC Peterborough buildings

- GE site contains contaminants including Trichloro Ethylene (TCE) and Asbestos
- Site is under the regulatory oversight of Ontario Ministry of Environment, Conservation and Parks (MECP)
- Pump and treat system operating onsite to treat TCE contamination of ground water

### BWXT NEC and buildings licenced under CNSC licence are not impacted

- BWXT NEC updated its Environmental Risk Assessment (ERA) in 2025 listing no known releases from its operations towards historical contamination



# Conclusions

## Throughout the first half of the licensing period, BWXT NEC has demonstrated that:

- The Peterborough and Toronto facilities have been operating safely and in compliance with regulatory requirements, and there have been no significant changes to their operations
- Engagement and communication efforts with Indigenous Nations and communities, as well as the public, have met CNSC's expectations

CNSC staff continue to provide regulatory oversight to ensure the safe operation of the BWXT NEC facilities, and that people and the environment are protected.

**CNSC staff are satisfied with BWXT NEC's safety performance throughout the first half of the licensing period.**

# Thank you

Stay connected!



[nuclearsafety.gc.ca](https://nuclearsafety.gc.ca)