

Comments on the Mid-Term Licence Update for the Two Class IB Licences Held by BWXT Nuclear Energy Canada Inc. (BWXT), With a Focus on BWXT's Peterborough Facility



Mid-Term Licence Update (Ref. 2026-M-13)

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Canadian
Environmental Law
Association
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Canadian Environmental Law Association (CELA)



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- Specialty legal aid clinic dedicated to environmental equity, justice, and health
- Founded in 1970, funded by Legal Aid Ontario since 1978
- CELA provides free legal services relating to environmental justice in Ontario, including representing qualifying low-income and vulnerable communities in the courts and before tribunals. CELA also provides free summary advice to the public and engages in legal education and law reform initiatives.

Interest and Expertise of the Intervenors

- **Citizens Against Radioactive Neighbourhoods (“CARN”)** is a Peterborough-based non-profit whose membership has an interest in nuclear facilities and the licensing process. CARN is specifically concerned about impacts related to the emission of radionuclides and the health of communities and the environment adjacent to nuclear facilities.
- CARN is a volunteer led, unincorporated group of concerned citizens that works with the local community to raise awareness about nuclear facilities and advocates for stringent human health and environmental safeguards. CARN was created in response to BWXT’s request to the CNSC for a flexible license that would allow it to commence pelleting production at their Peterborough facility.

Scope of Review



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- The intervenors have prepared this submission to review what has occurred at the Peterborough facility in the first half of the 10-year licence, and seek clarity on what will happen in the next 5-years of the licence term.
- This submission poses questions to the CNSC and BWXT on shortfalls associated with the operations at the Peterborough facility and provides recommendations to ensure human health and the environment are being protected through adequate monitoring and regulatory oversight.



Summary of Findings

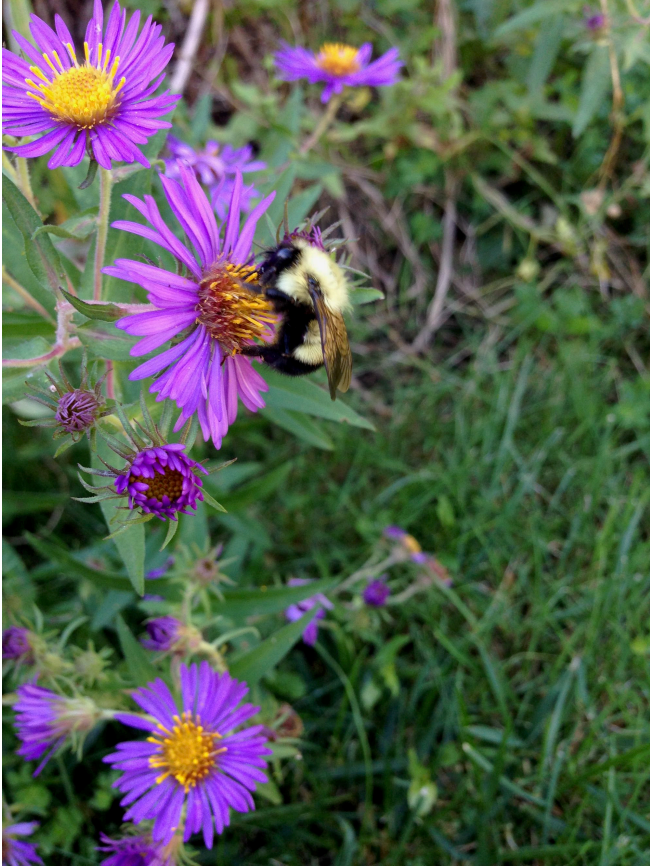


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- Reflecting on the Licensing Decision from 2020
 - Precautionary Principle, ALARA, and the Principle of Justification must be applied to Peterborough site
 - Failure to Uphold Recommendations on Monitoring Air Quality
- Demolition of Buildings at Peterborough Facility Pose Major Concerns for Human Health and the Environment
- Concerns Surrounding Environmental Justice and the Siting of the Peterborough Facility
 - Cumulative Effect Mapping of the Peterborough Site
 - The expansion of nuclear projects across Canada cannot justify the processing of enriched uranium
- Environmental Monitoring Data Still Indicates Potential Risk to Human Health and the Environment
 - Beryllium
 - Effects of Uranium
 - Radiation Doses to the Public
- Inaccurate Mapping of Peterborough Facility within CNSC Regulatory Oversight Reports
- Climate Change Concerns

Detailed Findings



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1. Reflecting on the Licensing Decision from 2020

Precautionary Principle, ALARA, and the Principle of Justification

- Precautionary Principle: When reviewing the uncertainty and data gaps in environmental monitoring around BWXT's facilities, the intervenors submit the precautionary principle *is* applicable to the Peterborough facility, especially with a highly contentious demolition application slated for numerous buildings on the Peterborough property where BWXT operates. The intervenors recommend the CNSC revisit the potential threat of serious or irreversible damage from BWXT's operations in Peterborough, and the risks pelleting would bring to this vulnerable neighbourhood through applying the precautionary principle to the licensee's operations.
- ALARA: The ALARA principle must be implemented by the licensee (BWXT), and not the CNSC itself. The intervenors are concerned about the monitoring and report of various environmental pollutants, and submit the ALARA principle is not being met by BWXT. The intervenors request the CNSC review the licensee's application of the ALARA principle.
- Principle of Justification: The International Atomic Energy Agency ("IAEA") has recommended that Canada adopt the principle of justification, as noted in a recent IAEA Mission reviewing Canada's regulatory framework for safety.
- Unreasonable Risk: REGDOC-3.6 does not define "unreasonable risk", so The intervenors request that the CNSC defines what an "unreasonable risk" is, and how it comes to that determination. With such vulnerable community members (children) being in close proximity to BWXT's operations 5 days a week, at what point does the risk to children's health become unreasonable

1. Reflecting on the Licensing Decision from 2020

Failure to Uphold Recommendations on Monitoring Air Quality

- At the licence renewal hearing, expert Dr. Julian Aherne provided insight on gaps and shortfalls in environmental monitoring of current emissions from the Peterborough site.
- Dr. Aherne also recommended improvements to the Independent Environmental Monitoring Program (IEMP).
- The intervenors note that while CNSC staff developed a sampling plan/approach in consultation with Dr. Aherne, we submit the engagement with Dr. Aherne on the topic of air monitoring is insufficient.
- The recommendations Dr. Aherne had made to improve the IEMP monitoring in Peterborough were not intended to be a one-time approach; the recommendations he provided were intended to **improve the long term sampling for beryllium in soils.**

1. Reflecting on the Licensing Decision from 2020

Failure to Uphold Recommendations on Monitoring Air Quality, *continued*

- The intervenors request that CNSC staff resume the beryllium monitoring using the full extraction of beryllium from soil sample during IEMP sampling, and further recommend that Dr. Aherne is regularly consulted and communicated with.
- The intervenors also request that the CNSC embraces Dr. Aherne's other monitoring recommendation: real-time, ongoing ambient environmental monitoring for all facilities located within residential areas and especially at the elementary school across the street; this will ensure that the public and the environment are protected from emissions from licenced facilities.
- **This is monitoring that community members want to occur**, as it will provide a more accurate data set of the air emissions in the community. At this point in time, there is a **lack of public trust surrounding air emissions from BWXT**, and the concerns surrounding air emissions will be exponentially higher should BWXT decide to commence pelleting operations in Peterborough.
- ***Without an accurate picture of the ambient air quality in the neighbourhood, there cannot be a determination that there no unreasonable risk to the vulnerable population that is in close proximity to the Peterborough facility.***



2. Demolition of Buildings at Peterborough Facility Pose Major Concerns for Human Health and the Environment

- The impending demolition of this Site presents serious public health risks to a community that is already facing an elevated combination of environmental, social, and health-related stressors, including because of the CNSC's decision to allow for an additional industrial process, namely uranium pelleting, to be moved to this site.
- Given the radioactive contamination lingering on a property with major demolition activities slated, the intervenors submit the proposed demolition should be of concern to the CNSC and should be considered in conjunction with its other decisions at the site.
- The intervenors are concerned about the cumulative effects of BWXT's environmental emissions combining with releases that may occur from demolition activities.

Chemicals, toxins, and heavy metals recorded on the property include:

- Asbestos;
- Polychlorinated Biphenyls (PCBs);
- Lead;
- Mercury;
- Cadmium, Chromium (VI), Nickel, Arsenic, and Beryllium;
- Uranium;
- Solvents, degreasers, and volatile organic compounds (VOCs);
- Paints, Resins, and Floor Treatments;
- Acids and Plating Chemicals; and
- Other hazards such as: coal tar and asphaltic coatings, silica dust from sandblasting, diesel and propane exhaust, and endocrine-disrupting plasticizers (phthalates).



2. Demolition of Buildings at Peterborough Facility Pose Major Concerns for Human Health and the Environment

- The Intervenor submit the CNSC and BWXT should be taking this proposed demolition into consideration on how this will impact the safety of the Peterborough Facility.
- Due to BWXT's operations at the Peterborough site, and the environmental releases resulting from licensed activities, the intervenors are very concerned about the inadequate financial guarantee for decommissioning of this site. The intervenors are concerned about the decreased amount of BWXT's financial guarantee for the Peterborough Facility.
 - Prior to Application: financial guarantees totaling approximately **\$48.1 million** for both the Toronto facility and the Peterborough facility
 - Reduction to a total of \$30,498,884 to decommission both facilities—approximately a \$17.5 million reduction,
 - Peterborough site seeing a decrease of C\$705,427.38
- We request that the previous decommissioning amount be restored and BWXT increase its financial guarantee to \$10,775,122 for the Peterborough site and \$37,362,745 for the Toronto site.

3. Environmental Justice and the Siting of the Peterborough Facility

Cumulative Effect Mapping of the Peterborough Site

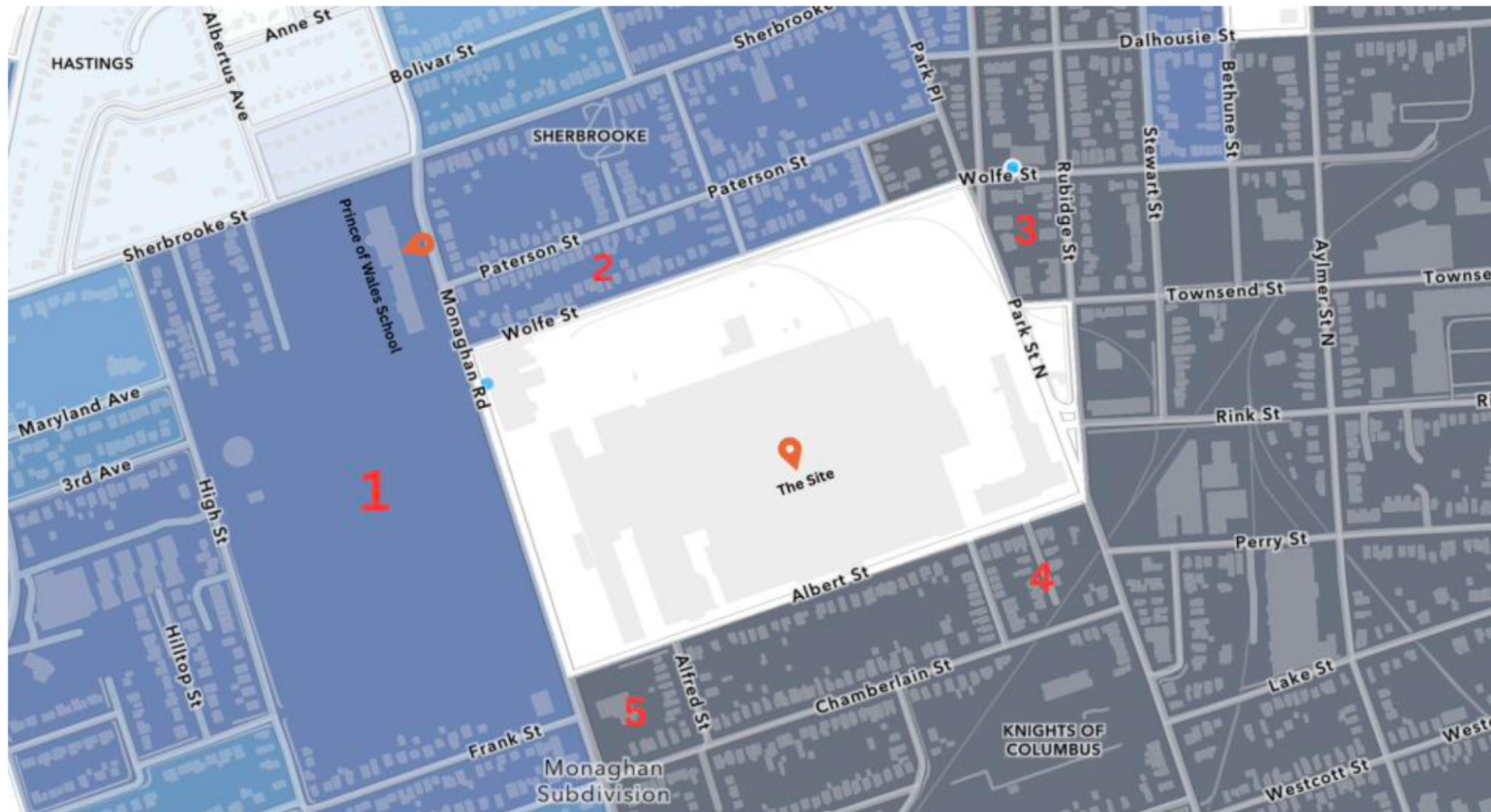


Figure 1: Cumulative Index Map (courtesy of <https://www.mapping4change.org>)

3. Environmental Justice and the Siting of the Peterborough Facility

Cumulative Effect Mapping of the Peterborough Site

- When considering the activities being conducted by BWXT at the Peterborough facility, the CNSC must consider the legacy of pollution within this neighbourhood, and how releases from BWXT may cumulatively effect the neighbourhood and local watershed.
- The intervenors maintain the position that the siting of the Peterborough facility within this neighbourhood **unreasonably puts human health and the environment at risk**, especially when taking the cumulative burden index into account.
- While BWXT has not implemented a transition of pelleting to the Peterborough facility yet, there are still 4.5 years left within this licensing period, meaning that at any point, BWXT could opt for pellet manufacturing to take place in Peterborough.
- The intervenors submit **community members are heavily opposed to any pellet manufacturing in Peterborough**, and request the CNSC revoke the license condition that would authorize this activity.
- Additionally, the intervenors request BWXT listen to the community that is hosting its operations and not utilize the licence condition at any point during its license term.

3. Environmental Justice and the Siting of the Peterborough Facility

The expansion of nuclear projects across Canada cannot justify the processing of enriched uranium

- With BWXT only being authorized to manufacture fuel bundles for CANDU reactors, the intervenors seek clarity on BWXT's intentions for the remainder of this licence period, as there will be a reduced demand for fuel bundles once OPG's Pickering Nuclear Generating Station enters a period of refurbishment.
- At the licence renewal hearing, there was a discussion surrounding manufacturing fuel for non-CANDU reactors (i.e., enriched fuel), which has become more urgent and applicable as other technologies are being considered in CNSC licensing and impact assessment processes
 - Presently, there has been increased interest in expanding nuclear power across the country, with small modular reactors (SMRs) being very popular.
- The intervenors submit **the community does not want enriched uranium to be processed in Peterborough, and urge BWXT to not seek a licence amendment to process enriched fuel**. Introducing enriched uranium to the Peterborough facility would be a serious and totally unacceptable environmental injustice, unfairly subjecting vulnerable members of society to increased radiation and other health implications.
- The intervenors submit that in the event BWXT were to seek permission to process enriched uranium in Peterborough, a licensing decision made by the CNSC **must** be subject to a public hearing, and not a hearing in writing.
 - In the event such a hearing were to occur, the CNSC must consider cumulative effects, and apply a cumulative burden lens to decision-making, in order to truly protect human health and the environment, including children at Prince of Wales school.

4. Environmental Monitoring Data Still Indicates Potential Risk to Human Health and the Environment

Beryllium: the CNSC and BWXT have not implemented Dr. Aherne’s recommendation for continuous ambient airborne monitoring for beryllium. Beryllium pollution is likely episodic, so increases can occur up to a year after an event occurs, which makes continuous monitoring crucial to understand the whole picture of airborne emissions from BWXT’s operations. The intervenors submit the gaps in continuous ambient airborne release monitoring is contributing to a gap in understanding the complete impact of BWXT’s activities on the Peterborough community.

Effects of Uranium: In July 2023, the International Agency for Research on Cancer (“IARC”) specifically named uranium as a Group 1 carcinogen to humans. With the IARC, the specialized cancer agency of the World Health Organization, specifically recognizing uranium as a carcinogen, the intervenors are concerned about the uncertainty of the health effects from long-term chronic exposure. In particular, the intervenors are concerned about the disproportionate harm to vulnerable populations through uranium exposure.

- The intervenors raise the issue of disproportionate harm from ionizing radiation due to the location of the Peterborough facility. With the Prince of Wales Public School being only 25 m away from BWXT’s operations involving uranium, there are concerns about the long term effects of being exposed to low dose radiation over the course of a child’s elementary school career.

Radiation Doses to the Public: At the 2020 Hearing, BWXT said that the combined dose of radiation to public would be 10 μSv . In 2023, Toronto alone was estimated at 40.2 μSv , in 2024, Toronto alone was 137.8 μSv , and in 2025, Toronto’s was 109.1 μSv . And in Peterborough, the 2025 public dose was 5.7 μSv . **These doses seem extremely high**, especially when compared to the estimated public doses at nuclear power plants: 1.4 μSv at Pickering; 0.85 μSv at Darlington; and 1.1 μSv at Bruce. The intervenors seek clarity on the causes of these high estimated public doses.

- To get a better understanding of the radiation doses to the public, the intervenors want to know how much uranium is stored on site in Building 24, and whether there should be thermoluminescent dosimeter (TLD) on the south side of the Peterborough buildings, as there are residences all along that side of the property.

5. Inaccurate Mapping of Peterborough Facility within CNSC Regulatory Oversight Reports

Figure 2: Image used in CNSC Regulatory Oversight Reports for the reporting years of 2021, 2022, 2023, and 2024.



Figure 3: Image used for BWXT's Peterborough Facility in Regulatory Oversight Report for Uranium and Nuclear Substance Processing Facilities in Canada: 2020



6. Climate Change

- When reviewing BWXT’s Midterm Report, there is a lack of discussion surrounding climate change—both in terms of potential impacts of climate change, and in terms of mitigation strategies.
- There is no mention of the extreme weather events such as severe derecho and ice storms in the Peterborough region over the last 5 years.
 - For example, On May 21, 2022 shortly after 2 p.m. a violent weather system known as a 'derecho' ("deh-ray-chow") arrived in Peterborough and battered the City for several minutes. The brief but powerful storm had a phenomenal impact, with power outages lasting days and debris cleanup taking months.
- Extreme weather events exacerbated by climate change can result in various forms of property damage and flooding, and as mentioned above, can result in major power outages, which is concerning for a facility handling radioactive materials and other hazardous materials. As a result, there must be a robust climate action plan in place for BWXT’s facilities.
- The intervenors also note that with the proposed demolitions slated for the Peterborough property, extreme weather events could result in unexpected releases of hazardous materials that have been undisturbed for decades, and could cumulatively impact the health and safety of workers, members of the public, and the environment.
- The intervenors request BWXT elaborate on its climate mitigation strategies, and how the proposed demolition of numerous polluted buildings on the property is considered within those strategies for its own facilities.

Conclusion



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- We respectfully provide these comments to assist the Commission in its review of the Mid-term update from BWXT Nuclear Energy Canada Inc. on licensed activities at its Toronto and Peterborough facilities.



Summary of Recommendations



Recommendation No. 1: CNSC revisit the potential threat of serious or irreversible damage from BWXT’s operations in Peterborough, and the risks pelleting would bring to this vulnerable neighbourhood through applying the precautionary principle to the licensee’s operations.

Recommendation No. 2: The ALARA principle is not being met by BWXT. The intervenors request the CNSC review the licensee’s application of the ALARA principle.

Recommendation No. 3: The IAEA principle of justification must to be incorporated into the *Nuclear Safety and Control Act*, to ensure the protection of human health and the environment is not compromised by a licensee’s economic priorities, as would be the case with pelleting activities commencing in Peterborough.

Recommendation No. 4: The intervenors request that the CNSC defines what an “unreasonable risk” is, and how it comes to that determination.

Recommendation No. 5: CNSC staff should resume the beryllium monitoring using the full extraction of beryllium from soil sample during IEMP sampling, and further recommend that Dr. Aherne is regularly consulted and communicated with.

Recommendation No. 6: The CNSC should require ambient environmental monitoring for all facilities located within residential areas; this will ensure that the public and the environment are protected from emissions from licenced facilities.

Recommendation No. 7: CNSC should consider the serious environmental impacts of the proposed demolition in all decisions at this site.

Recommendation No. 8: BWXT should restore its previous financial guarantee for this site.

Recommendation No. 9: BWXT must clarify how the proposed demolition will impact its decommissioning plan for the Peterborough site.

Recommendation No. 10: CNSC must require BWXT to make all reports, analyses, and data associated with its operation licences, such as the Preliminary Decommissioning Plans for the Toronto and Peterborough facilities, accessible on their website. BWXT should be checking links on their website regularly to ensure documents are accessible.

Recommendation No. 11: When considering the activities being conducted by BWXT at the Peterborough facility, the CNSC must consider the legacy of pollution within this neighbourhood, and how releases from BWXT may cumulatively effect the neighbourhood and local watershed.

Recommendation No. 12: The CNSC should refer to the Cumulative Index Map when assessing the cumulative effects associated with the operations at the Peterborough Facility.

Recommendation No. 13: Community members are heavily opposed to any pellet manufacturing in Peterborough and request the CNSC revoke the license condition that would authorize this activity.

Recommendation No. 14: BWXT listen to the community that is hosting its operations and not utilize the licence condition to bring fuel pelleting operations to Peterborough at any point during its license term.

Recommendation No. 15: The community does not want enriched uranium to be processed in Peterborough and urges BWXT to not seek a licence amendment to process enriched fuel.

Recommendation No. 16: Any applications made to allow enriched fuel processing in Peterborough must be subject to a public hearing, and not a hearing in writing.

Recommendation No. 17: In the event BWXT were to seek permission to process enriched fuel in Peterborough, the CNSC must consider cumulative effects, and apply a cumulative burden lens to decision-making, in order to truly protect human health and the environment.

Recommendation No. 18: CNSC and BWXT to provide clarity on how the disproportionate harm to vulnerable populations, such as children, is being considered when monitoring low dose ionizing radiation from the Peterborough facility. How are the releases from BWXT being weighed with the cumulative effects of the legacy toxins from the Peterborough lands?

Recommendation No. 19: The intervenors seek clarity on the causes of high estimated radiation doses to the public in Toronto.

Recommendation No. 20: To get a better understanding of the radiation doses to the public, the intervenors want to know how much uranium is stored on site in Building 24.

Recommendation No. 21: Should thermoluminescent dosimeter (TLD) be implemented on the south side of the Peterborough buildings, as there are residences all along that side of the property?

Recommendation No. 22: Requesting an explanation as to why an inaccurate image of the BWXT facility in Peterborough has been used for multiple years of regulatory oversight.

Recommendation No. 23: Images of the BWXT facility in Peterborough need to capture the neighbourhood hosting its activities: Prince of Wales Public School, and the hundreds of homes surrounding the property.

Recommendation No. 24: Addressing climate change impacts and having a strong climate action plan is crucial in preventing harmful releases into the environment. The intervenors request BWXT elaborate on its climate mitigation strategies, and how the proposed demolition of numerous polluted buildings on the property is considered within those strategies.