Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 26-M13.45

Date: 2026-04-17

Written Submission from Jane Scott

Mémoire de Jane Scott

In the matter of the

À l'égard de la

Mid-term update from BWXT Nuclear Energy Canada Inc. on licensed activities at its Toronto and Peterborough facilities

Mise à jour de mi-parcours sur les activités autorisées de BWXT Nuclear Energy Canada Inc. à ses installations de Toronto et de Peterborough

Commission Meeting

Réunion de la Commission

May 2026

Mai 2026

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Canada

April 17, 2026

Senior Tribunal Officer, Secretariat
Canadian Nuclear Safety Commission
280 Slater Street, PO Box 1046, Station B
Ottawa, Ontario
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Dear Sir or Madame,

To be honest, it is very disheartening to do be doing this again!

It seemed like such a small ask that BWXT not be allowed to expand its already heavy industrial processes into uranium pelleting, on shamefully polluted land, 25 m away from the primary school playground in a residential area. This is where the smallest children play. There is a parking lot, especially useful to pregnant mothers and parents with toddlers, across the road from one of the beryllium stacks.

(I am attaching my written and oral interventions from the 2020 hearing, for some context, and trust that you'll read them. However, I am going to try to focus on what has happened since then…). It is not too late for BWXT, the CNSC staff and the Commissioners to do the right thing upon careful reconsideration and choose not to pursue or allow pelleting.

BWXT is located on the GE Complex Land. Recently more people in Peterborough have become aware of just how contaminated this site, in a residential neighbourhood next to school, is because GE is proposing to demolish 80% of its highly contaminated buildings—lead, asbestos, etc, etc. Parents are justifiably concerned about toxic dust. There are toxic plumes of TCE's and PCBS and heavy metals under these factories too so there is talk of just taking the buildings down to their concrete foundations to avoid further stirring up the toxic land below.

People who worked at the factory have told us that many barrels of dangerous contaminants were buried on and off the GE complex site besides just the historical ongoing emissions and accidents of business as usual.

In the United States, 42 known General Electric factory sites are on the US Superfund National Priorities List. These sites are designated as needing a higher priority for cleanup due to their risk to human health and the environment. The US has dealt with highly polluted factories, like those owned by GE, through government regulation, Superfund laws, and litigation, which hold polluters legally and financially responsible for cleanup. Cleanup involves detailed planning, peer review and oversight to ensure the it meets environmental standards.

In total, GE has been identified as a responsible party at more than 80 Superfund sites. As in Peterborough, the contaminants are not confined to the factory lands—the Hudson River and the Housatonic River are just a couple of rivers badly polluted by GE.….According to the United States Environmental Protection Agency documents, only the United States Government, Honeywell and Chevron are responsible for producing more Superfund toxic waste sites.

When I looked online to see whether Canada has the equivalent of a Superfund "system", I discovered the "Federal Contaminated Sites Inventory". It lists contaminated sites on federal land. There are various sites on Peterborough shores and waterways listed…Including 52 hectares of contaminated sediment/sludge at the bottom of Little Lake to Rice Lake. The usual contaminants in the lake show GE;s signature…PCB's, PAH's, metals, metalloids, organometallic substances, etc….It is considered a high priority for action.

Suffice it to say, this is a highly contaminated site and needs to be handled with extreme care. Yet, BWXT's ERA doesn't even mention the legacy pollution and the toxic plumes spreading out from under the plant…But this is highly relevant! CNSC staff also glosses over this its incomplete Jan. 2026 Environmental Protection Review

Report. * (please note, there are huge gaps in this report —notably under cumulative effects.) https://opencanada.blob.core.windows.net/opengovprod/resources/af5e625e-4500-4a71-92ac-1dac20ac30d4/adobe-bwxt-en.pdf?se=2026-04-16T18:26:50Z&sp=r&sv=2024-08-04&sr=b&sig=zLcIM2Svp4a1gGnt0DW0xL/VwFQ3KkfznJUdJABGx9g=

Just air stripping the trichloroethylene plumes from the GE Complex lands, adds considerable vinyl chloride and trichloroethylene air pollution. . Even if we stopped all industrial activities at this sight, we would still be living with legacy air contamination.

The pollution coming from GE affects the whole city and beyond and needs a thorough full federal environmental assessment! The demolitions and any further activity there needs to be handled very carefully to mitigate further contamination, from air pollution from contaminated dust and toxins, from further contamination from runoff and soil contamination and disturbance.

Some of the hazardous substances going into the air from BWXT now in Peterborough include uranium dioxide, beryllium, particulate matter, talc chromium, volatile organic compounds etc BWXT in Toronto emits uranium dioxide, particulate matter, zinc compounds (zinc hydroxide, zinc stearate, nitrogen oxides and volatile organic compounds, octadecanoic acid.) Look at the ESDMs for a better idea because this is only a partial list. Added to this are the contaminants routinely coming from GE and other factories in our downtown core . And then I guess there's the resuspension of the contaminants in water and on the ground…

I don't think that the CNSC staff or Commissioners are educated to deal with the complexities and synergies between the contaminants we're dealing with here. Especially, with talk of a demolition. You surely must see that! Surely, you must see that you are out of your depth here! Health Canada and the ECCC should be involved regarding the cumulative effects.

https://www.lung.org/getmedia/f0122ec4-095c-4eb3-9fa5-0a4cc47437ad/Lung-Association-Cumulative-Impacts-Assessment-Criteria-Air-Pollution-White-Paper.pdf

Cumulative Health Impacts Assessment and the National Ambient Air Quality Standards

American Lung Association

December 17, 2024

Summary

The numerous adverse health effects of ambient air pollutant exposures are now well documented in scientific literature.

The air pollutants in outdoor air do not exist in isolation nor are they inhaled individually. Ambient air is a mixture of multiple pollutants including the commonly present criteria pollutants, which have the potential to interact with one another and influence their individual impacts on human health.

The criteria air pollutant exposome, i.e. the totality of environmental exposures and their health impacts, includes multiple risk factors that potentially add to the health effects resulting from exposure to a specific pollutant. Non-chemical stressors, such as socioeconomic status and sociodemographic factors and preexisting health issues, add to the health impacts of criteria air pollutant exposures. Climate change is another major risk factor that impacts public health on its own and also imposes a penalty on conventional air pollutant exposure.

Assessing the cumulative health impacts of all these stressors requires establishing the risk posed by each, quantifying that risk, and weighting the risk in regulating specific air pollutants.

The problem with the current paradigm of criteria air pollutant control, i.e. setting health-based primary National Ambient Air Quality Standards (NAAQS) for the six individual pollutants without considering the health effects of co-pollutants, is that ***there can be adverse health impacts from co-exposures to these pollutants even if no individual pollutant exceeds its current standard.*** *Cumulative impacts assessment also plays a role in the framing* and use of the Air Quality Index (AQI) which is based on short-term primary NAAQS.

In this paper we briefly discuss the state of scientific research in the assessment of cumulative health impacts of co-pollutant exposures as one of the multiple risk

factors and the application of such assessments in regulatory policy and risk communication related to criteria air pollutants and their NAAQS determinations to better protect public health.

We will also have higher routine PM2.5 emissions in our breathing sphere if pelleting comes to Peterborough. (And then there's the looming possibility of demolitions.) "Health effects of PM2.5 include ischemic heart disease, lung cancer, chronic obstructive pulmonary disease (COPD), lower respiratory infections (such as pneumonia), stroke, type 2 diabetes, dementia, and adverse birth outcomes." https://pmc.ncbi.nlm.nih.gov/articles/PMC12720475/ (Sullivan and Kohl). People with asthma, cardiovascular disease, lung disease, children, the elderly are considered to be be the most sensitive to the effects of fine particulate matter. How about those with genetic susceptibilities? A lot of children pass through Prince of Wales.

This stuff is cumulative.

So besides ongoing emissions coming from existing activities, and legacy waste, if pelleting comes to Peterborough, we'd also have ongoing expected emissions from Toronto facility, as well as accidental releases (or events) and fugitive emissions, from firemen inspecting alarms etc, human error, from cracked pipes, from flooding. (In 2024, during the 2nd "century flood" in a few years , there was 2 inches of water on the floor of building 21, where they do the uranium fuel bundling.)

Neither the derecho of 2022 nor the serious ice storm last year were mentioned in any BWXT or CNSC staff reports. We live a few blocks away from BWXT and a huge swath of wind snapped telephone poles and broke trees right behind our house. These extreme weather events are concerning when up to 1500 tons of uranium can be stored onsite, and more uranium will be moving through our streets, next to our

waterways including in powdered form. All the uranium in Toronto, will be stored in Peterborough—along with any radioactive waste. Where will that waste end up?

In BWXT's ERA for the consolidated operations 2018, BWXT estimated that the radiation dose to public would be 10μSv/year . https://www.bwxt.com/wp-content/uploads/2026/02/Consolidated-Environmental-Risk-Assessment.pdf Yet looking at the chart below from BWXT's midterm update, we see that the estimated radiation dose to the public for Toronto alone is now over 10 times as high as it was estimated during the Hearings in 2020 for the combined operations!

Table 14: Estimated Radiation Doses to Members of the Public

Year	Estimated Annual Public Dose (μSv)	% of Public Dose Limit (1,000 μSv = 1 mSv)
2025	109.1	10.9%
2024	137.8	13.8%
2023	40.2	4%
2022	17.3	2%
2021	17.3	2%

Compare this to what they say it is in Peterborough: (See BWXT's midterm update: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/CMD26-M13-1-BWXT-SUB.pdf/object)

Table 14: Estimated Radiation Doses to Members of the Public

Period	Estimated Annual Public Dose (μSv)	% of Public Dose Limit (1,000 μSv = 1 mSv)
2025	5.7	0.6%
2024	0	0.0%
2023	0	0.0%
2022	11.5	1.1%
2021	0.0	0.0%

For comparison, CNSC in their Regulatory Oversight Report estimated the radiation dose to the public around nuclear power plants in 2024: 1.4μSv Pickering, 0.85 Darlington ,1.1 μSv Bruce! (These estimates are also problematic according to many scientists who say they don't reflect the true health effects) But at least there are exclusionary zones around the power plants!) These numbers are more than a magnitude higher than we were told they'd be in 2020!

BWXT says the radiation dose to public in Toronto is largely because of uranium stored on site-- from external gamma radiation. But BWXT in Toronto is "only" allowed to have 700 metric tons on site while BWXT in Peterborough is allowed to have 1500 tons.

There is a lot more uranium onsite in Peterborough than in Toronto and I'd be curious to see what the estimated radiation dose to the public is in Peterborough once " the methodology for assessing public dose may be revised in conjunction with BWXT NEC Toronto to ensure alignment across both facilities. These updates are planned to be implemented in 2026 but are not expected to result in any notable change to the estimated doses for Peterborough, given the historically negligible results observed to date." (BWXT Mid-term Update). We were told that the public dose estimated in Peterborough would be similar to what it was in Toronto if pelleting comes to Peterborough.

The increased estimated dose in Toronto could be a combination of realigning themselves with IAEA conventions around public doses and the fact that an apartment building was built nearby.

Around the time of the Public Hearings in 2020, the CNSC was reprimanded by the International Atomic Energy Association for not living up to international standards in relation to various things like public doses and siting, justification, transportation, etc.

see: https://concernedcitizens.net/2020/03/07/international-peer-review-finds-deficiencies-in-canadas-nuclear-safety-framework/)

Just a reminder that the only Commissioner at the public hearing in 2020, with biological expertise, a medical doctor, radiologist and professor of public health, (in a panel of engineers, physics guys and industry insiders) said: ***"Moving the pelleting operations, adding radiation doses and UO2 air and effluent emissions in a site which has an adjacent vulnerable population, is not acting in an abundance of precaution." Sandor Demeter - CNSC member.***
(He said it was not justified—That it was not adequately precautionary. Unfortunately, he is no longer a commissioner.)

The scientific consensus is that there is no safe dose of radiation and that the effects of radiation are cumulative throughout a lifetime. (BEIR and the National Academy of Science, etc.)

There have been many studies recently exploring the implications of low dose ionizing radiation often causing more damage than once believed possible because of untargeted effects .

These recent higher public dose estimates in Toronto are especially concerning when many credible, peer reviewed sources claim that ICRP, and thus the CNSC's calculations around dosages in children are far from adequate . Gender is also an issue.
see:
https://unidir.org/wp-content/uploads/2024/11/Gender_and_ionizing_radiation_web.pdf
https://esmed.org/lifecycle-radiation-protection-ensuring-future-generations/
https://blog.ucs.org/chanese-forte/why-federal-radiation-regulations-can-no-longer-ignore-women-and-girls/ Union of Concerned Scientists
https://bmjpaedsopen.bmj.com/content/6/1/e001326

If pelleting comes to Peterborough, there would be significant increases in the amounts of uranium dioxide dust going into the air and into our sewage system.
BWXT and the CNSC have made it more difficult in the last few years to compare these emissions and despite my inquiries to both parties for more recent results, I'll have to rely on BWXT's 2023 ERA.

Based on Toronto's emissions, 10's of thousands more uranium would going into the sewers with consolidated operations than go into the sewers in Peterborough now.
Based of Toronto's air emissions, thousands of times more uranium would go into the air than happens now in Peterborough.
BWXT in Peterborough has one uranium stack and Toronto has 6. It's a whole different level of Uranium pollution.

There would be a substantial increase in emissions of insoluble, ceramic uranium dioxide into the air and sewage system in Peterborough if BWXT incorporated pelleting operations. Uranium is particularly dangerous when inhaled as an internal emitter because it emits alpha particles, which are especially damaging once inside the body. .. (It also emits gamma rays and beta particles as it decomposes.) Because the grains of toxic dust coming from the factory are so small they can be breathed into the deepest part of the lung where they can be tenaciously held, radiation and heavy metal chemical toxicity can harm DNA, cells and sensitive tissues. The grains of uranium making it through the filters into the stacks are also so small they can even go up through the olfactory passages and into the brain causing neurotoxicity.

Uranium causes more damage to cells and tissue once inside the body than previously thought because of the bystander effect, the non-targeted effects, genomic instability and because there are synergies between its radio toxicity and its chemical toxicity as a heavy metal.

Since the last hearing, the WHO's IARC has specifically named uranium as a group 1 confirmed human carcinogen. (Public Health, the CNSC staff, and BWXT can no longer deny this and need to stop gaslighting concerned parents by comparing long lasting, tiny grains of insoluble, ceramic uranium in the lung to airplane flights and bananas!)

IARC MONOGRAPHS ON THE IDENTIFICATION OF CARCINOGENIC HAZARDS TO HUMANS:

Note 2: In July 2023, an additional Group 1 agent was generated by creating an individual listing for uranium, which was previously listed without being named specifically as a member of the family, Radionuclides, alpha-particle-emitting, internally deposited (Group 1)

https://monographs.iarc.who.int/agents-classified-by-the-iarc/#:~:text=Note:%20In%20September%202022%2C%20four,internally%20deposited%20(Group%201).

The science around uranium's damaging effects on cells and tissue, because of untargeted effects has accumulated since the last hearing and can no longer be denied. For stochastic (chance) events like cancer and genetic mutations, there is no threshold. It can be caused by a single alpha particle passing through a cell. (WHO):

> Alpha-particles are somewhat unique among occupational and environmental carcinogens, because of their ability to produce a higher relative rate of double-strand DNA breaks compared with other types of ionizing radiation. Cells that have been hit by an α-particle, as well as nearby cells (ie, the so-called "bystander effect"),[24] may undergo genetic changes that lead to cancer.[25] Alpha-particles can also produce reactive oxygen intermediates that can produce oxidative damage to the DNA.[25] A single bronchial epithelial cell that has sustained genetic damage can initiate lung cancer.[25] Because cancer is thought to originate from a single cell (ie, monoclonal) that has completed the process of malignant transformation, it is unlikely a threshold exists for α-particle–induced lung cancer.[25] For additional information on the lung cancer risk posed by alpha

particles, see http://monographs.iarc.fr/ENG/Monographs/vol100D/mono100D.pdf.

There have been many studies recently exploring the implications of low dose ionizing radiation, like gamma waves and beta particles but also of alpha particles in the body, causing more damage than once believed because of untargeted effects.

Uranium causes more damage to cells and tissue once inside the body than previously thought because of the bystander effect, the untargeted effects, genomic instability and because there are synergies between its radio toxicity and its chemo toxicity as a heavy metal.

Many recent studies of the cumulative effects of low dose ionizing radiation have explored the effects on human health. https://www.frontiersin.org/journals/medicine/articles/10.3389/fmed.2026.1628683/full. (Zhang, et al)

> …Ultimately, this disrupts immune homeostasis and increase the long-term risk of autoimmune diseases or a decline in immune surveillance function….LDIR induces immune system dysfunction…
> The hematopoietic system is highly sensitive to ionizing radiation, and alterations in peripheral blood parameters are an early indicator of radiation-induced organismal damage…
> … These blood cell abnormalities can lead to a range of conditions, including reduced immunity, infections, inflammation, anemia, coagulation disorders leukemia, myelodysplastic syndromes, and hemophagocytic syndromes ….
> …..It was also found that gender and working age had a certain degree of influence on the peripheral blood picture, which shows that the peripheral blood picture of occupational groups exposed to long-term LDIR may be affected by a variety of factors, including gender, age, working age, type of work, grade of the medical unit, smoking habits, family history of cancer, and so on…..

> …In summary, long-term exposure to LDIR may damage many parts of the human body, including the human Immune system, hematopoietic system, endocrine system, circulatory system, digestive system, reproductive system, respiratory system, and urinary system, and the effects of low-dose exposure to ionizing radiation on human health should not be ignored .

And this from the National Academy of Science: https://www.ncbi.nlm.nih.gov/books/NBK586463/:

> Cancer is the most well-established and most studied adverse health effect following exposure to radiation. Recently, associations of other adverse health outcomes including cardiovascular disease , neurological disorders , immune dysfunction , and cataracts and other lens opacities have been observed at doses lower than previously considered important for these effects.

How do all these toxins—-from the contaminated site, from the conventional pollutions already being emitted, from possible increased emissions coming from a pelleting plant, from the increases in public radiation dose, from the increases in uranium particulates into our environment interact on a cellular/tissue level? on the immune system? auto-immunity for instance? For instance, there is a genetic component, a hypersensitivity to Beryllium disease …apparently necessary but not sufficient....Would exposure to increased air pollution and water pollution from an added industrial process, the dust from demolitions, etc, be enough to turn on those genes? As we know, pollution affects many systems in the body.
(See: https://www.ncbi.nlm.nih.gov/books/NBK585042/#__NBK585042_ai__ to learn more about Beryllium Toxicity.) Although you may manage beryllium very carefully now, it was not always managed so carefully. We know for instance, from first person accounts that the brazier blew up in the 80's.). Accidents happen…for instance a recent cracked pipe leaked “treated” Be waste water meant for the sanitary sewer . It is a highly toxic substance and has been processed on site for at least 60 years from my understanding and that stuff doesn’t just disappear.

I don't pretend to understand all this. But I do believe that we should take a precautionary approach when there are so many unknowns and children are involved.

I'm running out of steam here.

Now some questions:

Why hasn't the CNSC not taken more IEMP samples in the first half of the licensing period in Toronto, given the possibility of pelleting moving to Peterborough? (There were only 4 air samples takes in the last five years and none were closer than around 450m to the factory in Toronto, when the school is 25 m away)

This should interest be of interest:

https://policycommons.net/artifacts/35641665/bwxt-nec-response-to-cnsc-undertakings-regarding-toronto-and-peterborough-facilities-license-renewal/36541212/

> BWXT NEC Response to CNSC Undertakings Regarding Toronto and Peterborough Facilities License Renewal
>
> Snopek, D., 2020. *BWXT NEC Response to CNSC Undertakings Regarding Toronto and Peterborough Facilities License Renewal*, BWXT Nuclear Energy Canada Inc.. Canada. Retrieved from https://coilink.org/20.500.12592/5cx5425 on 15 Apr 2026. COI: 20.500.12592/5cx5425.
>
> 30 Mar 2020
>
> The second response concerns the maximum uranium in air concentration extending from the Toronto facility, presenting CALPUFF air dispersion model results and isopleths, and **concludes that the maximum concentration extends 40m beyond the fence.**

Were any of the beryllium air samples taken on days when the moulds are cleaned by brazing them empty? (I may misremember the details in the process)We've heard from workers that Be in air emissions are substantially higher then.

Why did the IAEA drop in on the Peterborough facility so often for the first five years of this license period?
Were they checking how much uranium is actually stored onsite in Peterborough?

If pelleting comes to Peterborough, all the uranium normally stored and processed in Toronto would be stored in Peterborough. Up to 1500 tons of uranium could be moving through our streets, next to our waterways and stored onsite in our downtown core.

The CNSC allowed BWXT in both the Toronto and Peterborough facilities to substantially decrease the funds set aside for decommissioning during the first half of the license despite inflation. The original notice to the participate in the hearing was sent out just days before the deadline to intervene, if my memory serves correctly. (CNSC also granted BWXT confidentiality in the hearing despite citizens' concerns about heavy industry in our downtown core.)

How would pelleting affect my house values?

Weather in Peterborough is erratic—and growing more so with climate change.

What about the increased traffic of powdered uranium and pellets through our streets, next to a school?

Unfortunately accidents happen. during the first half of this license period, pipes cracked letting water contaminated with Be and once with uranium that was meant for the sewer to seep through the concrete into the ground. (There have been many

mishaps caused by entropy, storms, human error in both facilities over the years. These are called events). Fugitive emissions.

Yet, neither the big ice storm last year nor the derecho in 2022 were mentioned in BWXT's midterm intervention. Climate change is making operations less controllable, and more risky.

In 2004, in the big flood, there were 2 inches of water on the floor of building 21. Every time it rains, the water flows off the toxic GE Complex land and into Little Lake. In Toronto, storm water ends up in one of the largest lakes in the world!

Even terrorism seems more of a possibility in these uncertain times.

Can the city handle the increased demand on its water reserves? Can it handle the increased demands on its sewage system?

News Release from the City of Peterborough just last month: March 10th, 2026, Peterborough, ON – With snowmelt following a winter with substantial snow accumulation and heavy rainfall in the forecast for Wednesday, March 11, 2026, residents are encouraged to temporarily reduce non-essential water use to help lower the volume of water going to the City of Peterborough Wastewater Treatment Plant. In the past five years, the city and the Otonabee Conservation have also issued multiple requests for residents to conserve water because of both drought and infrastructure limitations.

In 2016, the air concentration of uranium was measured at the perimeter of the factory in Toronto at 390 X's background levels. Uranium powder can quickly become airborne. This should not be done next to a school. What happened that day? (The Ontario Ambient Air Quality Standard for uranium in air is 0.03 µg/meter cubed but that is at least 300 x's natural background). In 2014, one of the very few CNSC's

IEMP samples measuring uranium concentrations in the air at Prince of Wales School was 0.0013µg/m cubed! That is at least 13x's background.

Powdered uranium is flammable. Is it worth putting children at risk for the convenience of the company? Fire services consider such an operation in a residential area high risk. Are parents and residents prepared?

All the low level radioactive waste would also be stored onsite in Peterborough. Where would that go?
Would the increased noise pollution generated by pelleting be tolerable to young children at the school

What role should CNSC play in overseeing the demolitions given that beryllium and uranium were processed in some of the buildings slated for demolition and it is likely responsible for uranium and beryllium contamination of the land and water under those buildings?

GE started operating in Peterborough 130 years ago. At its height in the 1960's, 6000 people worked there and as citizens we are left with the legacy of that pollution. We seldom let our children swim in Little Lake, we discourage them from eating snow when they are playing in the school yard or sledding on the great hill at the school.

The community has grown up around the GE lands and society's understanding about the cumulative effects of pollution can no longer be ignored The health of children and the community should not be further risked or sacrificed for the convenience of BWXT's business model.

GOOD NEIGHBOURS DON'T MAKE RADIOACTIVE HEAVY METAL PELLETS

- CMD 20-H2.246 – Submission from Jane Scott (PDF, 16 pages, 1.81 MB)

Thanks for your time, Jane Scott

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REVIEWVolume 6, Issue 6E535-E547June 2022Open Access
Pollution and health: a progress update

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