



**Written submission from
Emily Straka**

**Mémoire de
Emily Straka**

In the Matter of the

À l'égard de

**BWXT Nuclear Energy Canada Inc.,
Toronto and Peterborough Facilities**

**BWXT Nuclear Energy Canada Inc.,
installations de Toronto et Peterborough**

Application for the renewal of the licence for
Toronto and Peterborough facilities

Demande de renouvellement du permis pour les
installations de Toronto et Peterborough

Commission Public Hearing

Audience publique de la Commission

March 2 to 6, 2020

Du 2 au 6 mars 2020

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January 25, 2020

Senior Tribunal Officer, Secretariat Canadian Nuclear Safety Commission
280 Slater Street, P.O. Box 1046, Station B Ottawa, Ontario K1P 5S9

RE: Intervention by Emily Straka for the BWXT NEC Licence Renewal (Hearing Ref. 2020 - H - 01)

To whom it may concern:

I wish to submit a written intervention to the CNSC regarding the licence renewal of the BWXT NEC facilities. It is my understanding that the **mandate** of the Canadian Nuclear Safety Commission (**CNSC**) is to protect the health and safety of Canadians, as well as our environment and respectfully submit my comments for consideration.

Protection of human health and the environment: I am concerned that approving this license will bring irreversible changes to Peterborough, as we know it. It will no longer be a safe, healthy and liveable community, and the children who attend the elementary school just meters away will suffer long term health and economic consequences if CNSC allows BWXT to produce uranium pellets here in Peterborough. It is entirely inappropriate and contrary to contemporary, sensible land use planning to allow the proposed activity to be located in an old, converted industrial land use with no separation distance from adjacent residential land use including an elementary school. There is an inadequate transitional land use or buffer distance between this extremely hazardous industrial use and the children that innocently attend the public elementary school a mere 20 m away! Are adequate protections going to be put in place to protect these elementary school children, who are the young, growing and therefore the most vulnerable members of society? Medical doctors have and will state that no amount of exposure to radioactive material is acceptable, no matter the guidelines, which are alarmingly too high!

BWXT believes it has a comprehensive environmental protection program to monitor and control nuclear and hazardous substances released from the site, determine concentrations in the environment, and to assess exposure to the public. In accordance with international guidance, the CNSC needs to recommend optimization of protection strategies to reduce doses to children. The development of credible radiological/nuclear event scenarios would assist in identifying probable sources of radioactivity and pathways of exposure for children. Such scenarios should then be used to identify protection strategies appropriate for children.

BWXT states that pelleting is safely done in Toronto. If that is the case, the activity should continue in Toronto and not be conducted in a second location. It makes no sense to run the risk of contaminating a second site that involves the risk of transporting uranium to Peterborough and back again to where it is to be used.

An ancient Facility: On April 20, 1891, the GE plant opened. 1891!!!! Safety standards have changed a lot in that time! Is the CNSC aware of the age/ site specifics of the Peterborough facility? This is an extremely old building! How will CNSC ensure that the facility is up to current standards?

Grandfathering a decades old land use is not responsible or acceptable in this day and age! The CNSC must make sure our land, water and air are protected from emissions and monitored for the health of everyone, especially our vulnerable children! BWXT representatives insist that there would not be local contamination and the public need not worry about health consequences. No professional engineer would ever offer the assurance that there will never be a leak or an accident that could result in a leak. All industrial processes do involve leakages and emissions but when these harmful substances are so close to these vulnerable children, this license cannot be approved! The pelleting process, which involves uranium powder, an easily inhalable dust, will create an additional health risk that should not be taken. In addition to introducing new contaminants, the workers and neighbourhood surrounding the BWXT plant already have enough of a toxic burden from decades of exposure to carcinogens emitted by this plant and there is no justification to add more! The CNSC should instead ask BWXT what their plan is for decommissioning the Peterborough Plant, which is too close to an elementary school and in the middle of a residential neighbourhood. Studies have already determined a contaminated plume is spreading from the current site on Monaghan Road; allowing the production of uranium pelleting will further affect the health of the people and environment of Peterborough.

Omnibus Licensing: I respectfully ask why one license/application is being filed for two sites that produce two different products? This amalgamated application if purely for the simplification of administrative purposes for BWXT should not be allowed and therefore not even considered. Has the CNSC asked BWXT the reasons for wanting “the flexibility” of producing the pellets in Peterborough? BWXT should be asked to explain and justify why they cannot continue pellet production in Toronto and what their long-term plans are for that plant. Any changes in activities at either plant should require that no undue burdens be imposed on future generations. Allowing the production of uranium pelleting in Peterborough would impose a health, environmental and economic burden for the residents of the neighbourhood surrounding the Peterborough plant, particularly those innocent and vulnerable children!

Communication must be open and transparent: In the interests of public access to information, the CNSC needs to ensure that all BWXT licence documents, including all supplementary studies/reports, must be conveniently accessible.

When I recently tried to access the Peterborough BWXT Regulatory oversight report for uranium and nuclear substance processing facilities” on the nuclearsafety.gc.ca website, the following message was displayed: “The web site you are accessing has experienced an unexpected error. Please contact the

website administrator.” This is a clear example of how the reports are NOT conveniently accessible!

The CNSC should require all facilities involving nuclear materials to communicate their intentions in an open and transparent manner BEFORE decisions are made, not AFTER! In 2016, GE sold its nuclear division at the Peterborough plant to BWXT, quietly amid reports that the site and surrounding area was and continues to suffer from heavy chemical contamination. In March 2018, BWXT announced that it was awarded a five-year contract to assemble fuel bundles at its Peterborough plant. All these activities were done quietly, without informing local residents, parents or school officials of their plans. Whenever an application to renew a license, or a change in activities/production at the plant, is undertaken, the CNSC should require that the company inform the general public of their intentions through a variety of means (newspapers, radio, TV, social media...).

Another example that demonstrates a lack of transparency concerning nuclear facilities in Ontario: On January 12, 2020, the [Province of Ontario](#) issued an emergency bulletin after an “incident” was reported at the Pickering Nuclear Generation Station. The emergency bulletin said it applied to people within 10 kilometres of the facility. The bulletin said people “do not need to take protective actions at this time” and that “There has been no abnormal release of radioactivity from the station and emergency staff are responding to the situation.” This situation raised alarms for many across the area (which was demonstrated by a huge influx of orders for the KI pill so they would be prepared)! The increase in awareness was only brought on by an imminent threat. Immediately following the alert, it was reported that many residents in the vicinity of the Pickering plant were not aware (or had forgotten) any emergency plans that are or should be in place. Will the CNSC be involved in determining exactly what happened on that day and why an emergency bulletin was issued? Will the incident be “swept under the rug” to reduce Ontario residents’ anxiety about the safety of nuclear energy or will the CNSC ensure that residents of Ontario are aware of what actually happened? This example highlights the need to insist that the staff of BWXT have regular open and clear communication about safety measures, monitoring and communicating “incidents that occur” at both their plants.

BWXT Peterborough has not communicated to Peterborough residents the fact that they’ve applied to the CNSC for an extension of its operating permit for 10 years; it is only because a group of concerned residents in the immediate area, primarily parents of students who attend the elementary school just 20 meters from the facility in question, raised concerns to other citizens in the City of Peterborough. BWXT has never communicated information to the community about its intentions or the safety of its operations.

Licensing Period: A license should not be issued for any period of time at all! The proposed location of this activity in relation to surrounding land

use is inappropriate considering the risk and potential affects of an accident at this site. I would also like to make it clear to the CNSC that the licensing period is far too lengthy. The CNSC requires licensees are to have an Environmental Risk Assessment (ERA), which is to be updated on a five-year cycle, or whenever significant change occurs in the facility or activity. I would suggest that allowing the production of uranium pelleting would be defined as being a significant change in the Peterborough facility. Why would the CNSC renew a license for more than those 5 years? A 10-year licence would suggest to the public that neither the CNSC nor BWXT is concerned about input from the public. The safety of this plant is something that concerns Peterborough residents, and the duration of the licence should reflect this. The requested licencing change for the Peterborough facility is a significant departure from existing authorizations (no change in use or operation is contemplated for BWXT's Toronto facility) and a duty of fairness is owed to the citizens of Peterborough whose rights, interests and health stand to be affected by this licensing matter. The request to produce Uranium pellets in Peterborough should be denied!

Unclear Future plans: BWXT's application claims that there is currently no plan to change the existing state of operations, but would like the flexibility to allow BWXT's Peterborough facility to produce uranium pellets "should there be changes to the business climate" over the decade-long licence period. BWXT is in a business that carries extreme risks to human health and the environment and should therefore be required to present detailed plans only when the need arises to change the existing state of operations! If BWXT has communicated no plans for shutting down the Toronto operation, what would be the point in duplicating the operation in Peterborough? Also, if the demand for CANDU fuel is not going to be growing anytime soon, with the future of the Pickering Nuclear Generating Station approaching the end of its life, why is BWXT requesting an additional use for its Peterborough facility? Has BWXT demonstrated that the Peterborough facility will be maintained in a safe configuration at all times, will reach the specified decommissioning end state, that no undue burdens will be imposed on future generations, and is acceptable to the public and Indigenous communities?

Emergency Plans: Emergency plans and estimated costs for those plans should be revealed BEFORE any license renewal is considered. Has the CNSC required BWXT to outline how much insurance it has to cover costs of various emergencies or will they expect the tax payers to pay for clean up and results of their business and lack of emergency funds? Businesses like GE declare insolvency and walk away from the cost of clean up. BWXT should post an appropriate monetary performance security to deal with the future costs of clean up and the expected health care costs to those children and other residents before they are permitted to operate. GE walked away from their responsibilities in assisting their employees in dealing with the myriad of cancers and other health issues that they now are enduring. BWXT should not be allowed to do the same!

It is my understanding that a large tank of hydrogen would need to be stored on the site. Has BWXT divulged information about the safety and emergency plan for the storage of that material? What is BWXT's emergency preparedness plan? No plan has been communicated to the public.

Furthermore, will the CNSC require robust evidence demonstrating that residents in the Detailed Planning Zone (DPZ) and Contingency Planning Zone (CPZ) have awareness of emergency planning procedures? Public notification and response systems must be tested and operable within the DPZ and CPZ and not limited to the immediate 10 km zone. Public alerting utilizing multiple communication methods must also be in place to a distance of 100 km. Has the CNSC asked BWXT if any of those systems have yet been tested? The CNSC must have evidence demonstrating that in the event of a radiological emergency, the provincial Alert Ready system can be promptly activated. Has the CNSC requested BWXT to provide an update on its Alert Ready protocols? Will the CNSC require BWXT to provide KI pills by way of pre-distribution within a 50 km radius, and pre-stock to 100 km? In accordance with international best practice, will the CNSC ensure KI stockpiles to 100 km and ensure stockpiles at places frequented by vulnerable groups, such as children and pregnant women are maintained?

Given that an elementary public school is located only 20 meters from the Peterborough facility, and the children's particular vulnerability to radiation, will the pre-stocking of KI in all schools and daycare centres within the 50 km zone be made a condition of licensing? Will the CNSC require BWXT to disseminate information on a more frequent basis, about the online KI-pill ordering website PrepareToBeSafe.ca in its outreach material to the public? Will BWXT fund the KI pill distribution since the area most affected is a low socio-economic area? Has the CNSC's staffs reviewed the adequacy of medical care that would be required during an emergency or evacuation? Will the CNSC determine if medical facilities within the DPZ and CPZ have long-distance, nuclear disaster-specific emergency and evacuation plans, and whether these plans have been practiced on a full-scale?

Has the CNSC investigated BWXT's public awareness program to understand if it contains detailed information about evacuation routes, the location of emergency shelters and decontamination centres and how vulnerable people, including seniors and children from the closest school, will be protected? Uranium pellets are already being produced at BWXT's Toronto facility so why risk transporting dangerous substances along the 401 and Highway 115 and then transport the finished product back to Toronto? Has the CNSC asked to evaluate BWXT's emergency plan for when one of those transport trucks goes off the road and spills their cargo? What plan is in place to protect EMS personnel who come onto the scene and don't know the vehicle is transporting radioactive material? What is the emergency environmental plan to deal with the spilled material when radioactive material is "accidentally" spilled on and alongside those transportation corridors?

Environmental Risk Assessment (ERA)/ Impact Assessment: Will BWXT provide CNSC with all information, analysis and advice needed to make fully informed decisions to protect health, safety, security and the environment? Is the CNSC requiring that the BWXT license renewal application, and all future licence applications, be subject to an Impact Assessment or ERA, which would consider both the operation at the Peterborough plant, AND transporting hazardous goods along Hwy 401 and the 115? The CNSC needs to gather and consider public input on renewal, continued management, decommissioning and closure. It is obvious that BWXT doesn't consider their activities at the Peterborough facility to be hazardous to human health, or the environment, especially given that the site is so close to a school, otherwise they wouldn't be considering the thought of producing nuclear pellets at the Peterborough facility. How does the CNSC collaborate with federal and provincial regulators to meet their obligations regarding safe and secure management of nuclear-related material, facilities and activities?

Monitoring emissions: The CNSC already recognizes the significance of Beryllium and its potential dangers. Transcripts of hearings clearly reflect this. I am however, very disappointed that I have never read any concerns on the part of CNSC that reflect the proximity of the beryllium point source to the vulnerable children at Prince of Wales Public School. The Be stack is within 20 meters of the junior play area. The understanding of Be toxicity is poor for adults – but there are virtually no epidemiological studies that show the effects of Be on children. This is a compelling reason to NOT add more damaging emissions in Peterborough and STOP BWXT from producing uranium pellets in Peterborough! According to its own Annual Compliance Monitoring Report, BWXT's Toronto facility has released 46.2 grams of uranium into the air and 3.62 kilograms of uranium in the sewer system over the past five years. How will the school children and local residents not be harmed by this exposure if pelleting is allowed in Peterborough and the same levels of harmful substances are released in Peterborough?

Will the CNSC and responsible authorities require BWXT to undertake more vigorous and regular monitoring of nuclear and greenhouse gas (GHG) emissions and set tangible reduction planning targets in order to consider the entire nuclear process chain, from cradle to grave? BWXT admits that "airborne particles can expose members of the public via inhalation," but claims the releases "are shown to be only a fraction of the annual regulatory limits." Those limits allow for 760 grams to be released into the air and 9,000 kilograms to be released into the sewer system every year. Anna Tilman of the International Institute of Concern for Public Health argues, "The release limits set by the Canadian Nuclear Safety Commission are notoriously liberal. Meeting such limits gives an impression to the public that all is okay, which is definitely not the case." The primary hazard from uranium dust inhalation or ingestion is alpha radiation, which can remain in lung tissue for years. Again, the most vulnerable of our population, young children in the nearby school and daycares, will be exposed!

The general public trusts and relies on various levels of government to ensure the safety of the people and the environment but these procedures are not always adequate. BWXT has reported that in 2017 they released 820 liters of contaminated water into the Peterborough sewers. The City of Peterborough's Environmental Protection Division Environmental Monitoring Program is responsible for enforcing **the City's Sewer Use By-Law** through monitoring programs and site inspections at industrial properties. On the morning of Jan. 13, 2020 I contacted Kent Keeling, the Chief Environmental Officer for the City of Peterborough to ask him the following questions:

Does the city monitor contaminated discharge from the BWXT properties? If so,

- 1) how do they do so?
- 2) is discharge monitored at each of the sewer discharge points at the property line?
- 3) Is it monitored on an on going basis or randomly checked and if random, how frequent?
- 4) Is the monitoring process designed to check for radioactivity and/or other contaminants?
- 5) how are city workers who monitor this water protected against any radioactive materials?
- 6) how much contaminated water has been and is actually being released into the sewers by BWXT and what contaminants are in that water?
- 7) What amount of contaminants including radioactivity is still in the water when it is discharged in the Otonabee River?
- 8) What is the level of allowable contaminants that can be released into the Otonabee River?

This is the response I received from Mr. Keeling:

Ultimately the regulation of radioactive and nuclear materials falls under the federal jurisdiction of the Canadian Nuclear Safety Commission. The Sewer Use By-law does require that any facilities discharging radioactive materials to the sewer must be licensed to do so by the Canadian Nuclear Safety Commission and BWXT is currently a licensed facility. We do not specifically monitor the BWXT property, there is a single sanitary sewer discharge from the site which is the combined sewer release from both GE and BWXT. We collect a sample of the wastewater in this sanitary sewer line once per quarter.

The wastewater treatment process relies heavily on biological treatment (microorganisms and bacteria that treat the waste). The monitoring is designed to check for parameters that could negatively impact the treatment processes at the Wastewater Treatment Plant (WWTP). We do not test radioactivity but we have tested for Uranium concentrations at this site. All results for Uranium that we have sampled have been below the laboratory detection limit of 0.03 mg/L (parts per million).

City staff do not take any extra precautions when sampling at this location, we take the same safety measures that we would take when sampling at any other site.

In recent years BWXT has released 820 to 1230 litres of water per year from

their Uranium processing areas with total annual releases of Uranium that range from 0.06 grams to 0.24 grams.

Since the Uranium concentration is below the laboratory detection limit when leaving the site, the only way to determine the volume entering the WWTP, and possibly the Otonabee River, is through calculation. The average daily flow at the WWTP in 2019 was 40,795 cubic metres per day and day with the lowest discharge volume from the WWTP was 28,832 cubic metres. If a years worth of Uranium was released on the day of the year with the lowest flow at the WWTP the concentration would calculate out to 0.008 ug/L (parts per billion). This is well below the Provincial Water Quality Objective of 5 ug/L and well below the drinking water limit of 0.02 mg/L (ppm).

I must ask you to consider: If the City of Peterborough does not specifically monitor the BWXT property, and only collects a sample of the wastewater from the combined sewer release from both GE and BWXT, only once per quarter, does that sound like a manner that maintains public trust and confidence? Furthermore, Mr. Keeling goes on to explain that the City of Peterborough is more interested in checking for parameters that could negatively impact the treatment processes at the Wastewater Treatment Plant (WWTP). So, the City of Peterborough doesn't concern itself with the health of the residents drinking that water, only the machines that clean the water! That is disturbing to say the least. The city does not test radioactivity but have tested for Uranium concentrations at this site.

All results for Uranium that have been sampled have been below the laboratory detection limit of 0.03 mg/L (parts per million). I repeat that uranium is a radioactive heavy metal, so it is toxic! Chemically, "the health hazards associated with uranium are much the same as those for lead" (World nuclear Association). As a source of radiation, uranium is especially dangerous when inhaled or ingested. Uranium can also bind to DNA, and take the place of calcium inside the body. It can target many systems, especially the lungs, kidney, liver, bones and brain. Evidence shows that uranium is dangerous at very small concentrations (the European Committee on Radiation Risk). Fetuses and children are extremely vulnerable to radiation.

The CNSC needs to give the health of all residents in Canada their top priority and not set limits so high that all industries can stay within the limits! Canadians need to be able to trust that the CNSC is making decisions that give top priority to the health and safety of the public and that the financial interests of large corporations are not more important than the health of the public and the environment! Will the CNSC maintain public trust and confidence in the regulatory process and your mission of "regulating the use of nuclear energy and materials to protect health, safety, security and the environment"? Government agencies, such as the CNSC, are mandated to protect Canadian residents and the environment, but all too often, politics of facilitating economics get in the way. I trust that the CNSC will not be pressured by lobbyists to support big business while ignoring the protection of human health and the environment. CNSC cannot renew this license that will only increase the risk to

the health and living environment of residential neighbourhoods in proximity to BWXT.

I'm concerned that Mr. Keeling responded that City staff do not take any extra precautions when sampling at this location, and "take the same safety measures that we would take when sampling at any other site". Is the CNSC going to look into this matter and ensure that City staff is collecting the waste samples from this combined site in a manner that will protect the health of those city employees?

Mr. Keeling goes on to explain: "in recent years BWXT has released 820 to 1230 liters of water per year from their Uranium processing areas". Instead of minimizing the release of contaminated water into Peterborough sewers, BWXT continues to release more contaminated water (from 820 liters in 2017) into our sewers! Furthermore, total annual releases of Uranium are "below the Provincial Water Quality Objective" but let me repeat, NO amount of uranium exposure is safe!!! Does the CNSC, who is ultimately responsible for the regulation of radioactive and nuclear materials, ensure that communities downstream from Peterborough are aware of the levels of contaminants in THEIR drinking water? Do you think those Ontarians trust that the CNSC is ensuring the health and safety of them and their environment?

In summary, I have limited this deposition/intervention to the issues that concern me most and have the following recommendations:

1. I respectfully request that the CNSC deny granting of this licence (to produce uranium dioxide pellets in Peterborough) until such a time that a proper communication program is in place and that the community has been properly informed of the risks associated with this operation. Due process must occur! BWXT has not met the terms of its licence with respect to communication. It has made false claims about the degree of its communication and has failed to recognize the importance of communication with our community.
2. I respectfully request the CNSC to ask BWXT to identify and ensure protection strategies appropriate for the children that attend the Prince of Wales Elementary Public School nearby are in place BEFORE any license is considered. Since the CNSC already has concerns for Beryllium emissions, and in recognition of the dangers of Beryllium, I respectfully request that prior to considering this licence, the Beryllium stack be relocated to a position far removed from the junior playground at Prince of Wales Elementary School and that more rigorous filters be put in place. An Environmental Risk assessment or Impact Assessment should be provided for the protection of the environment, and the health and safety of all persons.
3. Since the City of Peterborough doesn't test the water from the GE/BWXT property for radioactivity, I urge the CNSC to hire an independent company to regularly test the air and water being discharged from the Peterborough site and to report their findings on an accessible and open location.

4. I respectfully suggest to the CNSC that the requested licensing period does not reflect the concerns of the community. I recommend that BWXT not be allowed to have flexibility in producing the uranium pellets in Peterborough. If the CNSC believes that BWXT has run a safe production of the pellets in Toronto, they can continue to do so at that location, for a maximum of 5 years - the recent Whiteshell reactor's license was renewed for a shorter time, as should be the case here as well - but the CNSC should NOT allow the production of uranium pelleting in Peterborough! In the future, if BWXT wants to submit a specific application for production of uranium pellets in Peterborough, they should be required to communicate that fact to the general public in Peterborough (not just the residents of the immediate vicinity of the factory) and all Ontarians along Hwy 401 and the 115 transportation corridors.

5. I recommend that CNSC require that each BWXT facility require a separate license application. I respectfully ask the CNSC to investigate BWXT's reasons for wanting "the flexibility" of producing the pellets in Peterborough. Furthermore BWXT needs to be asked to explain and justify why they cannot continue pellet production in Toronto and what their long-term plans are for each plant.

6. I recommend that the CNSC staff ensure that all BWXT licence documents, including all supplementary studies/reports, must be conveniently and transparently accessible.

7. Instead of requesting a change in production activities at the Peterborough plant, the CNSC should ask BWXT to divulge their long-term plan for decommissioning the Peterborough Plant.

I request the commission deny the license application to produce Uranium pellets in Peterborough!

Sincerely,

Emily Straka

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Peterborough, ON

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