



Oral Presentation

Exposé oral

**Written submission from
Sue MacKay**

**Mémoire de
Sue MacKay**

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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laissée en blanc*

Filed on January 27, 2020

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

Sent by email cncs.interventions.ccsn@canada.ca

RE: Intervention by Sue MacKay for the BWXT Licence Renewal (Hearing Ref. 2020 - H - 01)

My name is Sue MacKay. I am writing this intervention against the proposed BWXT licence renewal including flexibility to manufacture uranium pellets in Peterborough. I have several ethical concerns.

I am very worried about the transportation of uranium dioxide powder through the streets of Peterborough, as well as the stockpiling of the powder at the Peterborough site. It is a dangerous substance that is finer than flour! I recently became aware that this fine powder is already being transported in and out of Peterborough and stored at the BWXT site. I also recently learned that BWXT's licence permits them to stockpile the toxic uranium dioxide powder. I would assume most Peterborough citizens are unaware of these facts and would be upset if they knew. The general public trusts that their local elected officials and CNSC have their best interest at heart and will make sure that nothing dangerous will be allowed in their community. As such, they would not think to look up and read the BWXT licence application, or what is allowed under that licence. Nor would they understand the language of the licence well enough to make an informed decision on the matter. Currently 1,500 metric tons of uranium powder can be stockpiled, 700 of which can be stockpiled in Toronto. If the licence goes through, I can only assume that Peterborough will be allowed to stockpile 700 metric tons as well. Although CNSC and BWXT assure us that safety is paramount, you cannot account for human error, or accidents. And accidents do happen and have happened. BWXT has had many accidents and safety breaches in Canada and the US which are on record. I do not want to wonder if there have been any leaks on the streets my family members walk every day, or improper handling of the powder at the facility.

My next concern is the hydrogen gas that is needed to make the uranium pellets. That will entail having a huge tank of the highly explosive and flammable gas on the site. Not only that, but a fire involving hydrogen gas is almost invisible, so not easily detected. If suspected, holding a corn broom in front of you is about the only way to detect where the fire is. This is an unacceptable risk in the highly populated residential area surrounding the BWXT facility in Peterborough as well as for the children at school across the street. The damage could be extensive! Explosions can and do happen with devastating results. For example, "In a spectacular accident at an industrial site in Hanau, Germany, the catastrophic failure of a tank with pressurized hydrogen occurred. The 100 m³ cylindrical pressure vessel with a total height

of 16 m, a diameter of 2.8 m and a wall thickness of 22 mm was operated with a cyclic change of the inner pressure between 1.5 (“empty”) and 4.5 (“full”) MPa. At the time of the accident, the tank was filled with 370 kg of H₂. The failure of the vessel was caused by a fatigue rupture near a longitudinal welding seam due to accelerated crack growth from H₂ embrittlement. The explosion resulted in severe damage within a radius of 1 km” (Safety Considerations on Hydrogen, Karl Verfondern, 2008). It would not only be extremely dangerous to have a hydrogen tank in a residential area and steps away from Prince of Wales School, but unethical! It doesn’t take much imagination to visualize what would happen to the workers, or residents if an explosion would occur and tons of toxic uranium powder that is finer than flour was blown into the neighbourhoods and school grounds, should such an explosion occur. It is well-known that our city is already plagued with toxic waste from the GE plant on Monaghan Rd. where BWXT is currently operating. To consider adding toxic uranium powder, radioactive pollutants as well as a tank of highly explosive hydrogen gas to the mix, is playing Russian roulette with the lives of our citizens, air, land, water, and wildlife! Why would CNSC approve a licence in a residential area where a catastrophe such as described, can happen? It does not sound like our safety is being considered at all!

Thirdly, CNSC, as safety regulator, sets the limits of contaminants that can be released into the air and water using the ALARA principle, As Low As Reasonably Achievable, as a guide. BWXT officials are fond of saying that the amount of particles that cannot be filtered out and which are released into the air and water are far lower than what the nuclear industry, or CNSC allows. They make this statement with pride as if there is no possible danger to life! If I remember correctly, one official informed me that only about one gram is released in Peterborough currently, not even detectable. But what he failed to tell me was that one gram translates to millions of particles! Inhaling just one of those particles can eventually kill you! No amount of radioactive material is safe! No exposure to radioactive materials is safe, ever! Even the smallest amount, a tiny particle so small it can’t be seen, can cause irreparable damage to tissue and DNA, and can ultimately end a life many years later through cancer and other serious health issues. BWXT’s Toronto pelleting site is currently releasing huge amounts of radioactive waste into Toronto air, land, and water systems, yet, within CNSC acceptable limits! If the proposed licence to pellet in Peterborough is approved, the Toronto amounts of pollution will be transferred to the Peterborough air, land and water systems.

Somehow, the industry has convinced the public that small amounts of radioactive particles are safe, using the ALARA principle. Setting the limit as low as reasonably achievable has no basis in reality when it comes to radioactive particles! It is a licence to contaminate, kill, murder, and maim, all in the name of cheap electricity! There is no concern for life in the ALARA principle! It begs the question of who came up with such a principle? ALARA is a fluid limit that can change according to the industry needs! This is a moral outrage! You might as well tell people that a little cyanide each day is safe, just take it with your morning tea so it won’t taste so bad! Having CNSC as limit setter, regulator, and monitor, is ethically wrong! Why isn’t there a separate governing body to oversee CNSC?

The BWXT-GE site in Peterborough is in a heavily populated residential area with a school just steps from the plant! What safety considerations were made on behalf of the children who attend Prince of Wales School? The radioactive particles that will be released from uranium pelleting do not just disappear or get carried away on the wind! They land! And little feet will be kicking it up and making it airborne again, or transferred to their mouths by their hands as they play, or taken home on their clothes! And what about unsuspecting passers-by? What safety measures have been taken to protect them? And everyone in the two-kilometre test radius? And beyond the two-kilometre radius? And what about the high wind patterns which will carry the particles much further at times? And what safety measures are proposed to keep pets and wildlife safe, our water and marine life safe? Any contaminates in the water is going to have serious effects, in Peterborough and anywhere downstream from Peterborough! Please answer these questions because ALARA just doesn't begin to explain! The people of Peterborough are not educated about the potential threats to their health. Should this licence be approved, residents will be unwittingly accepting compromised air, water, food and health. Peterborough is a blue collar community. What people focus on is the possibility of good paying jobs, not the risks to themselves or their families. Approval for this licence will not result in many jobs for Peterborough, despite all appearances to the contrary.

Lastly, I am deeply concerned about the proposed licence renewal and even more deeply concerned that CNSC has recommended approval of the licence prior to consulting with the residents of Peterborough! Offering a hearing months after the fact where citizens must first write and submit an intervention, hardly seems fair. If interveners want to speak in person at the hearing, they must request the opportunity, but will only be heard at the discretion of CNSC. The entire exercise comes across as a formality to appease the masses after a decision has already been made, not as sincere interest and consideration for the concerns of the citizens of Peterborough. I ask the question, why didn't CNSC consult with Peterborough citizens prior to their recommendation that the BWXT licence be approved?

The nuclear industry is a dirty industry from beginning to end. From uranium miners dying from exposure, industry workers getting sick from exposure, residents living in contaminated cities where potential exposure is unmeasurable, and no sure way to deal with nuclear waste that continues to pollute for millions of years. Nuclear energy is not clean energy. It also is not cheap. The cost to life and the life of the planet is heart-breaking. And for what? I ask that CNSC make the ethical decision not to grant the licence to manufacture uranium pellets.

All over the world, nuclear stations are being shut down because they are no longer justifiable. The number of melt-downs, accidents, insurmountable poisoning of oceans, vast lands, and people with no answers, solutions, or remedies to correct them make continued pursuit of nuclear energy unviable. Most countries are researching and developing alternatives to nuclear energy.

To even think of BWXT manufacturing uranium pellets here in Peterborough makes me afraid! I have a daughter, son-in-law, and two sweet grandchildren who are very active in sports, so spend a great deal of time outdoors. I don't want to worry about them playing at school on

contaminated playgrounds, or playing soccer in a contaminated park, or swimming at the lake in contaminated water. I don't want to think that maybe one of them will inhale a radioactive particle that will give them cancer in 20 years. Or, whether or not, the organic vegetables I grow and feed my family could potentially harm them.

In conclusion, I think approving the BWXT licence to manufacture uranium pellets is unconscionable. I appeal to your hearts and your higher selves to not put any more lives at risk. I respectfully ask that CNSC deny the part of the licence that allows flexibility to make radioactive pellets. I will further suggest that the length of the licence be reduced from 10 years to five years. I also ask that CNSC be overseen by an independent body. And I request that CNSC change their approach to educating the public, listening to the public, and to base their decisions on what the public demands, not on what the industry demands.

Sincerely,
Sue MacKay