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Oral Presentation

Written submission from the Ontario Clean Air Alliance

In the Matter of the

BWXT Nuclear Energy Canada Inc., Toronto and Peterborough Facilities

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

Commission Public Hearing

March 2 to 6, 2020

Exposé oral

Mémoire de la Ontario Clean Air Alliance

À l'égard de

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

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

Audience publique de la Commission

Du 2 au 6 mars 2020

Canada

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

January 27, 2020

RE: BWXT Nuclear Energy Canada's application to renew license for Toronto

This intervention regards the application of BWXT Toronto seeking a 10-year license extension. We also request to make an oral presentation at the Toronto hearing.

The BWXT uranium plant nestled in the middle of our community at Dupont and Lansdowne processes 53% of all the uranium used in Canada's nuclear reactors, annually processing 1800 tonnes of **natural and depleted uranium dioxide** to manufacture fuel pellets, cooking uranium with explosive hydrogen gas.

BWXT claims this plant has released **46.2 grams of uranium into the air and 3.62 kgs of uranium into the sewer** system over the past 5 years. However, according to advice received from Dr. Ian Fairlie[i], radiation biologist, these figures, which are likely to be estimates, appear to be very low given the millions of grams of uranium processed each year by this facility. We have seen no documentary evidence that these estimates are correct, nor evidence of the models used to produce these estimates, nor the uncertainly ranges for them. Can you provide these to us?

In 2016, air at the perimeter of the BWXT Toronto factory was tested at **390 times** the natural background of uranium concentrations. In 2017, soil around the Toronto factory was tested at **10 times** natural background levels. (BWXT Compliance reports) This is unacceptable.

Every gram of uranium released contains trillions of small **radioactive** uranium particles. These particles are respirable, meaning they can be inhaled or ingested. Hundreds of epidemiological reports and cell/animal studies indicate that uranium is a potent carcinogen and mutagen due to its chemical and radiological toxicities. Just one uranium particle lodged inside the body can cause **cancer** and other serious long-term effects including **impaired immune systems, heart disease, and birth defects**. Damage to a developing embryo can cause spontaneous

abortion or miscarriage. Why are uranium emissions being allowed in a residential neighbourhood in the middle of Toronto, Canada's largest city?

How can we take the CNSC seriously when the CNSC allows 9000 kgs of uranium released annually into the sewer and 760 grams into the air? Clearly CNSC standards are not set with residents' health in mind.

We understand that the plant does its own **radiation monitoring**. We ask why the CNSC wouldn't expect 24/7 independent monitoring of the plant, publicly available in real time?

We appreciate that the CNSC uses the ALARA principle (As Low As Reasonably Achievable) to allow for industry profits. But ALARA is inconsistent with, and less safe than, the Precautionary Principle – this states that there is a social responsibility to protect the public from exposure to harm when scientific evidence indicates plausible risks. The BEIR VII[ii] report of the US National Academy of Sciences has stated that the best model for estimating radiation risks is the Linear No Threshold (LNT) model. This means that any exposure, no matter how low, of cells to sub-atomic particles or unstable radioactive atoms has the potential to trigger cancer in people. In other words, **there is no safe dose of ionizing radiation**.

Furthermore, **women and children**[iii] require more protection from ionizing radiation than men; for every 2 men who get cancer from radiation exposure, 3 women suffer the disease. Children are more vulnerable to radiation than adults, and little **girls** (age 0 – 5) are twice as likely to suffer harm from radiation as little boys in the same age group.

Knowing all this, the only radiation standard certain to protect everyone is zero – that is, no additional exposure above unavoidable background radiation.

This same facility hosts a 9,000 gallon tank of **liquid hydrogen**, a highly explosive gas. In our view, putting a Class I nuclear facility in a densely populated residential area next to a 9,00 gallon hydrogen tank beside 700 tonnes of powdered uranium dioxide powder in barrels poses serious risks to the local residents. What would happen in the event of an explosion? Could we have a "**dirty nuclear bomb**[iv]" in downtown Toronto?

The group CARN listed on their website[v] eleven uranium pelleting plants around the world: only one of them – Toronto – was situated in the middle of a densely

populated urban centre. Even the industry knows it does not belong in a residential neighbourhood.

We'd like to know what the **evacuation procedures** are in the event of an explosion of this hydrogen tank or of the uranium plant. We invited the fire marshal from the nearby fire station (Dupont and Dufferin) to attend our community meeting on Jan. 21st to inform us what the evacuation procedures are for the public; unfortunately, he refused to send anyone, claiming the station was safe. In our view, this statement is reprehensible as it indicates a refusal to consider what could happen to Toronto residents in the event of an accident at this plant. As local residents, we should be informed of the emergency plans for us in the event of an explosion. **Accidents can and do happen.**

While the likelihood of an accident may be small, it is greater than zero. And if it's greater than zero, then why should residents be forced to take the risk when the insurance industry refuses to do so? We understand the **insurance** policy of the plant is proprietary information. We also understand that a Cameco uranium pelleting plant in Port Hope, similar to the BWXT Toronto plant, has $4 million insurance liability – that is less than what most people have on their individual homes! This is an insult to the local community who are at risk.

Given that the Pickering Nuclear Station is set to close in 2024, and Pickering is only one of two nuclear stations that BWXT supplies, we're interested in knowing why BWXT hopes to increase their production as outlined in their application. What is their **market**? Is it the US? Here we reference the flow chart on page 7 of BWXT's application[vi] – they are providing fuel pellets for Canadian Candus and Boiling Water Reactors in the US and/or other countries. How does that market breakdown? Are Toronto residents taking health and safety risks for American nuclear stations?

This plant should not be located smack dab in the middle of millions of people! Our children go to school here. We work here. We go to pubs and schools and community centres here. We walk and jog and breathe deeply every day here. We are fully aware that this plant would never get permission to build here today, and this is why we oppose their application for a license extension. Radioactive uranium operations are not welcome in our neighbourhood.

It is time to adopt non-radioactive policies for making electricity. Ontario should denuclearize its power generation and go 100% renewable[vii] with a combination of conservation, water power from QC[viii], and made-in-Ontario green energy. The

world is going renewable – Ontario is being left behind using last century's high-cost[ix], dangerous nuclear technology.

Angela Bischoff, Director, Ontario Clean Air Alliance[x]

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[i] https://www.ianfairlie.org/
[ii] http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/beir_vii_final.pdf
[iii] https://www.nirs.org/wp-content/uploads/radiation/radiationharm2pg.pdf
[iv] https://en.wikipedia.org/wiki/Dirty_bomb
[v] https://www.nopellets.ca/unreasonable-risk
[vi] http://www.nuclearsafety.gc.ca/eng/the-commission/hearings/cmd/pdf/CMD18/CMD20-H2-1.pdf
[vii] https://www.cleanairalliance.org/the-future-is-renewable/
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