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Oral Presentation

Written submission from the Canadian Association of Physicians for the Environment

Exposé oral

Mémoire de l'Association Canadienne des Médecins pour l'Environnement

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

Canada

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CNSC hearings March 4-5, 2020

Subject – BWXT Nuclear Energy Canada Inc. Application to renew licence for the Toronto and Peterborough Facilities.

Thankyou for the opportunity to participate in these hearings.

I am a family physician in Kingston, Ontario, and Assistant Professor in the Department of Family Medicine at Queen's University. I am also a board member of the Canadian Association of Physicians for the Environment (CAPE) and I am their expert in the area of nuclear energy and health. I would like to express concerns about the decision of the Canadian Nuclear Safety Commission (CNSC) to extend the licence of BWXT Nuclear Energy Canada Inc. for ten more years for their nuclear facilities in Toronto and Peterborough, as well as their decision to include uranium pellet production at the Peterborough site. I have not received any funding for my participation in these hearings.

Both the BWXT sites, in Peterborough and in Toronto, are situated in the middle of residential neighbourhoods, very close to schools. It is known that all industrial processes involve leaks and emissions into the local environment. In this case, people living locally, and children at schools in the vicinity of the BWXT facilities, are potentially exposed to emitted uranium dust, especially at the Toronto facility due to the uranium pelleting process, as well as beryllium dust at the Peterborough facility.

Uranium dust is very fine, the particles so small that they are easily inhalable and absorbable into the bloodstream, lodging in lung and other tissues. Uranium is radioactive, meaning uranium atoms eject small subatomic particles which can damage cells adjacent to where the uranium particle is lodged in tissue. This can

cause DNA damage which we know causes cancer and other diseases. Uranium exposure has been shown to cause lung cancer and leukemia as well as infertility, birth defects, autoimmune disease and kidney damage. The diseases can manifest decades after the exposure and it is important to note that the damage caused by ionizing radiation is cumulative. This is because the half life of uranium is in the billions of years, so it remains in the body for a lifetime doing its damage, and the more the exposure, the more the uranium accumulates in the body. Though the long half life means that it does not eject particles very often, the more uranium a person is exposed to, the more the potential to develop diseases caused by radiation exposure.

Beryllium is used in the process of manufacturing fuel bundles, which occurs at the Peterborough site. Beryllium exposure can cause chronic berylliosis, a serious and often fatal lung disease due to occupational exposure to beryllium. However chronic berylliosis has been seen in people not occupationally exposed but living within five miles of a beryllium facility, the disease manifesting sometimes decades after exposure.

My first and most serious concern about the application of BWXT for a continuing licence is the lack of appropriate monitoring of industrial emissions by BWXT, and lack of oversight of monitoring by the CNSC. BWXT and the CNSC insist that the doses to local citizens of industrial emissions (specifically uranium and beryllium) are minimal and that their industrial processes do not pose a health risk. From reading the BWXT Annual Compliance Monitoring Reports and the Independent Environmental Monitoring Program BWXT Nuclear Energy Canada Inc.-Peterborough, it appears that monitoring of uranium levels in the residential areas near the BWXT facility in Toronto, and beryllium levels in the residential areas near the BWXT facility in Peterborough are inadequate.

According to BWXT's Annual Compliance Monitoring Reports, in Toronto, soil samples are taken from the BWXT premises, from industrial land adjacent to the site, and "other locations ie. residential", but the reports do not identify where

these are or how many are measured at actual residences nearby. This is of concern, as there was a total of only 14 of these measurements done in 2018 in "other locations ie. residential", which is approximately one a month, all possibly in different locations that are not identified. It is very possible that this method of measurement will miss a large reading somewhere in the residential area surrounding the facility that has not been measured.

This has a bearing on Peterborough, where potential uranium pelleting is being considered as part of BWXT's application for licence renewal. If soil sampling for uranium is inadequate in Toronto, which I believe it is, then will this be the case in Peterborough once pelleting starts? This puts the population living and going to school near the Peterborough facility at risk, as their actual exposure to uranium will be unknown and could be significant.

There has been much controversy over the last number of years regarding workers at the Peterborough plant who have had cancer and other illnesses due to toxic occupational exposures during their working life at General Electric (GE) which owned the plant before it was bought by BWXT in 2016. There is an ongoing dispute between workers (and workers' families, in cases where the worker has died) and WSIB regarding compensation for occupationally caused diseases. Any added toxic burden to the workers there, or citizens living in the vicinity is unwarranted, which is another reason to not introduce the uranium pelleting process in Peterborough.

According to CNSC documents on beryllium sampling in Peterborough (https://nuclearsafety.gc.ca/eng/resources/maps-of-nuclear-facilities/iemp/bwxt-peterborough.cfm), there were only a handful of air, soil and water samples to test beryllium levels in 2014, 2018 and 2019 (2015-2017 levels are missing, and I assume monitoring was not occurring these years, which is concerning). I do not believe that testing so few sites is adequate to obtain real environmental levels and therefore the public may be at risk for significant beryllium exposure.

I believe the CNSC needs to be more vigilant regarding monitoring at both BWXT sites. The CNSC is responsible for overseeing its nuclear facilities and unless it demands its licensees to do more samples of potential toxins and to sample more sites, especially in residential areas and schoolgrounds, it is not doing its job.

I am also concerned about the request for extending the licence for both facilities for ten years. This is too long for lack of input, participation and oversight by the public, especially if new issues arise regarding monitoring, sampling and potential health risks.

I am asking that the CNSC refuse the request of BWXT for a ten year licence to continue operation of their Toronto and Peterborough facilities, and to refuse the introduction of the uranium pelleting process in Peterborough, until such time as BWXT shows an improved plan to monitor adequately the surrounding residential areas in each city for uranium, and also beryllium in the case of Peterborough.

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