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Written submission from Mary Elizabeth Konrad

Mémoire de Mary Elizabeth Konrad

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

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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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Re: BWXT Nuclear Energy Canada Inc. - Application for the Renewal of the Licence for the Toronto and Peterborough Facilities (Ref. 2020-H-01)

To whom it may concern,

I am writing this letter in response to the Canadian Nuclear Safety Commission's (CNSC) Public Notice dated December 20, 2019 requesting comments on the proposal by BWXT Nuclear Energy Canada Inc. to renew its Class IB fuel facility operating licence for a period of 10 years, including the modification of operations in Peterborough to include the permission to produce uranium fuel pellets. Hearings on this matter are scheduled for March 2-3, 2020 in Toronto, Ontario and March 5-6, 2020 in Peterborough, Ontario. This intervention letter focuses on concerns regarding soil and air contamination data released for the Peterborough facilities.

Upon reviewing the results of the Independent Environmental Monitoring Program (IEMP) conducted by the CNSC over the past 5 years (published on their website and in the December 2019 Environmental Protection Review Report) it can be seen that there exists a statistically significant increasing trend in the concentration of beryllium in soils surrounding the Peterborough facility. Over five years, three sampling periods (2014, 2018 and 2019) took place and the average concentration of beryllium over the 8 sites monitored increased with each sampling period. The result was a total increase of 49% since 2014 (from an average of 0.95mg/kg dry weight to 1.42mg/kg dry weight). The highest concentration reported (2.34mg/kg dry weight, 83% higher than the average of the other sites that year) was in 2019 from the Prince of Wales Public School (POWPS) playground across the street from the facility. This location houses a vulnerable population of youth, and is a site where human ingestion/inhalation of soil is quite likely, given the fact that small children play there in the dirt. As stated in the CNSC Environmental Protection Review Report (EPRP) "beryllium is a toxic industrial material and can be absorbed in the bloodstream primarily through inhalation route of exposure and cause chronic berylliosis and lung cancer. It can also cause a skin reaction (dermatitis) if exposure occurs via the dermal route" (pg.32). A concentration of 2.43mg/kg dry weight falls at 59% of the 4mg/kg dry weight limit listed for residential and agricultural areas according to the Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (against which the CNSC compares soil data). Despite the fact that the concentrations found still fall below the CCME guidelines, they reveal a concerning trend. If the small sample size from the playground site were found to be truly representative, and concentrations were to continue to rise at this rate (134% increase over 5 years), the CCME guideline would easily be surpassed at the school during the 10 year proposed licensing period.

Additionally, the data published conflicts with the air quality data collected both inside the facility's exhaust stacks, and outside the property boundaries. Air samples tested in the same three years by the IEMP reported beryllium levels below the detection limits of the methods used in all instances except one (0.000077$\mu g/m^3$ at the POWPS playground in 2014). Samples tested as part of BWXT's Environmental Protection Program and released in its annual compliance reports have been reported below action levels and/or undetectable every year

since 2014. The inconsistency noted between air and soil concentrations suggest that the sampling regime employed to date has been insufficient, as beryllium appears to have been present in the air in high enough concentrations to result in noticeable accumulation in soils. These unknown levels may also have been high enough to be harmful to human health, particularly the children at school across the street. Furthermore, this increase could indicate the occurrence of un-detected or un-reported leaks or loss-of-control events since 2014, which may have been putting human and environmental health at risk.

The uranium and beryllium involved in nuclear processing are extremely hazardous, and the systems and monitoring regimes in place are all we have to ensure that humans and the environment are kept safe, particularly in a location where there is no buffer zone around the facility. Given that this facility is located in the heart a city and has an elementary school across the street it is of the utmost importance that issues in hazardous material release be caught as early as possible in order to correct them before they exceed safe limits, not after. The simplest way to do this is to implement more comprehensive environmental monitoring, and to acknowledge and address trends as soon as they are suspected. The Peterborough facility should be required to implement a comprehensive environmental monitoring program outside of its gates, with a much larger number of sample sites, and more frequent sampling regime to ensure robust data that can identify these types of trends sooner.

Additionally, it is not responsible for the CNSC to continue to consider a license renewal and/or change of operations while there is an existing inconsistency in the reported emissions/impacts of current operations at the site.

As such I ask that the operations at the BWXT facility cease until an investigation is completed which determines (and eliminates) the source and cause of the increasing trend in beryllium contamination, and while changes to the environmental monitoring program requirements are developed and implemented that will ensure robust data going forward.

Furthermore, I feel that the suitability of the Peterborough location for nuclear processing of any kind should be reconsidered. The lack of a buffer zone around the facility means that, in the event of an unforeseen accident/emergency, a school of 450 children, as well as other residents, homes, and businesses could be immediately endangered with no time to employ emergency response measures.

Thank you very much for your consideration.

Mary Elizabeth Konrad