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Written submission from Leslie McGrath

Mémoire de Leslie McGrath

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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January 24, 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 cnsc.interventions.ccsn@canada.ca

Dear Sir or Madam:

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

A) INTRODUCTION

Leslie McGrath submits this letter in response to the Canadian Nuclear Safety Commission's (CNSC) Public Notice dated December 20, 2019 regarding BWXT's request for Renewal of Operating Licence FFOL-3620.1/2020.

B) INTEREST AND EXPERTISE OF THE INTERVENOR

I am writing as a concerned citizen. My residence is 3 blocks from the BWXT plant. I am concerned about radioactive emission increases that would be associated with the potential commencement of pellet manufacturing at this plant. There are potential increased health risks, from increased radioactive emissions, to the residents of the city, and those living downstream and downwind of the plant.

C) BACKGROUND

This review is based on reading BWXT's license renewal application and a multitude of other resources in order to get a better understanding of the licensing process, and the varied types of risks associated with the nuclear industry.

D) FINDINGS

The concerns of the intervenor in regard to this Licence renewal application pertain to:

1- Increased levels of radioactive emissions if pellet production from yellow cake powder is permitted to commence at the Peterborough plant would mean increased health risks (to workers, City of Peterborough residents and those living downwind/stream from the plant) associated with increased radioactive emission releases via air and water as well as the potential for releases from transportation accidents on residential streets.

BWXT writes in its Licence Renewal Application that "'*Internal radiation hazards exist at both the Toronto and Peterborough facilities in the form of loose Uranium which may enter the body by inhalation, ingestion or absorption*."

Over a 5-year period, BWXT Toronto released 46 grams of uranium dioxide into the atmosphere. One gram of uranium dioxide contains 3.8 trillion particles so that's 35 quadrillion particles that were released over the 5 years. If BWXT starts making pellets in Peterborough, they expect to have the same level of radioactive particles released as they do now in Toronto.
If one single particle of uranium dust becomes enlodged in the tissue of a person, the localized radiation dose per year is well beyond a safe dose. Research by Dr. Gordon Edwards, shows that a 0.1 micron sized particle would emit 7-70 times the maximum permissible limit to that person. A 2 micron sized particle would emit 57,660 to 576,000 times the permissible limit to that person.
Source: Dr. Gordon Edwards, Public Presentation at Prince of Wales Public School, Peterborough, December 3, 2019.
If pelleting is allowed here releasing quadrillions of particles into the Peterborough air, how is it possible to say that there will not be people living here who will be exposed and suffer radiation exposure that goes well beyond the accepted dose standards?

BWXT Canada's CEO said to me in a conversation that the amount of radiation being released is less than what is naturally occurring therefore it is safe. It is simply not true that adding radiation exposure from manufacturing to naturally occurring radiation is safe. According to Dr. Cathy Vakil, Assistant Professor at the Department of Family Medicine at Queen's University and Board Director of The Canadian Association of Physicians for the Environment, the effects of radiation exposure are cumulative over a lifetime. Any further exposure to radiation is beyond what is naturally occurring is not safe and therefore increases one's risks of associated exposure.

Naturally occurring radiation, is not in itself safe. Radon gas, for example, is a naturally occurring radiation exposure risk for many Canadians. "*Health Canada recently increased its estimate of radon induced lung cancer deaths to approximately 16% of all lung cancers or approximately 3,200 Canadians that die annually from radon exposure. The World Health Organization (WHO) similarly estimate around 14% plus of all lung cancer deaths globally are radon induced*."
www.lungcancercanada.ca › Lung-Cancer › Radon

"*Every radiation exposure carries with it risk of adverse health effects, so increasing radiation exposure increases risk to our health*…" From '*Radiation and Children: The Ignored Victims'* by Cindy Folkers & Mary Olsen, Aug. 2004. https://www.nirs.org/wp-content/uploads/radiation/radiationandchildren.pdf

"*The National Academy of Sciences Committee on the Biological Effects of Ionizing Radiation in its BEIR VII report found that there is no dose at which adverse effects are not felt*"
https://cela.ca/wp-content/uploads/2019/07/878NuclearPower-SafebyWhatStandard.pdf

"*Every radiation exposure carries with it risk of adverse health effects, so increasing radiation exposure increases risk to our health whether the radiation is natural, more biologically available due to human interference, or human-made*"
https://www.nirs.org/wp-content/uploads/radiation/radiationandchildren.pdf

"*After many decades of study, the overwhelming scientific consensus is that there is no safe level of exposure to atomic radiation when it comes to cancer, leukemia, and some other types of biological damage caused by atomic radiation– particularly genetic damage*."
*'*Radioactivity is Invisible but do the facts have to be hidden as well? A Critique of the Strateco EIS of October 2009*'*
by Gordon Edwards, Ph.D
http://www.ccnr.org/GE_Critique_EIS.pdf

"*Radiation Effects on Real People. Exposure to radiation increases the risk of damage to tissues, cells, DNA and other vital molecules--potentially causing programmed cell death (apop-tosis), genetic mutations, cancers, leukemias, birth defects, and reproductive, immune, cardiovascular, and endocrine system disorders*."

"*The standards so devised are lenient enough to allow the nuclear industry to continue exposing its workers and the public to levels of radiation decreed to be "permissible," and to continue contaminating our air, water, and soil.*
Permissible does not mean safe, but merely expedient."
"*A single alpha particle, acting on a single cell, may damage that cell to the same degree as if a thousand x-rays had hit it. That is, one radiation particle can cause great damage to a single cell; that damage can even lead to a person's death, while registering a dose to the total body of zero*!"
Source: Mary Fox Olson & Kay Drey, November 2003 Nuclear Information & Resource Service 1424 16th St. NW Suite 404 Washington, DC 20036 202-328-0002, www.nirs.orgnirsnet@nirs.org

2- The reduced opportunity for public involvement with respect to pelleting, should a 10-year License be granted incorporating the amendment to allow pelleting in Peterborough.

BWXT says in its renewal application, "*Any pelleting at the Peterborough facility would be conducted within the existing licensed facility via a re-configuration of existing space*."
And
"*Should the decision be made to produce pellets at the Peterborough facility under the proposed amended Licence, it is requested that the changes would be made under the approved change management program and prior notification requirements within the LCH. Program documents and assessment reports affected by the project would be revised at that time and those subject to prior notification would be submitted to CNSC Staff as required*."

If the requested amendment is put into the new 10-year License, pelleting could commence at any time in the 10-year license period, without any further input from the community. The lack of a process for further input, on this issue is highly problematic. Whereas I feel the Licence amendment should not be granted at all, it should definitely *not* be granted without all relevant documentation related to any such change in the Licence, at any time.

3- The storage and use of liquid hydrogen in a residential neighbourhood, and adjacent to a public school.

Liquid hydrogen can be highly explosive and is more flammable than gasoline. It seems a potential hazard to put such a large tank so close to city infrastructure that serves pedestrians and automobile traffic, and where children go to school and play. Locating the tank within a residential neighbourhood, does not meet the criteria of unreasonable risk.

4- Inadequacy of the regulatory process as it stands, to address all the relevant aspects of ALARA principle, as there is no such thing as a safe level of exposure to radiation.

It is my feeling that the current licensing process at the Canadian Nuclear Safety Commission (CNSC) lacks a Social License, or in other words, an adequate place/process for which all the relevant/essential aspects of nuclear processing/manufacturing activity can be considered, including mining, transportation, processing and the storage of radioactive waste.

Exposure limits based on the ALARA (As Low As Reasonably Achievable) Principle provide an inadequate basis for regulating the nuclear industry in a way that best reduces health and safety risks.

And I ask, where is the process that would allow Ontarians, and all Canadians for that matter to collectively decide what the future should be of nuclear power. What should be its role in the generation of electricity, and how should it be weighed against developing a larger infrastructure for greener options?

5- If pelleting is allowed in Peterborough, how much personal risk am I exposing myself to by living 3 blocks from a Class 1 nuclear facility that expands its operations to include manufacturing pellets and will therefore be increasing release of radioactive emissions?

Is the air outside my house really going to be safe to breathe?

Is my home going to be safe to live in?

Are my gardens going to be safe to eat from?

Will my property value go down because of its proximity to the BWXT facility?

Is it reasonable that I should be forced to make the decision whether or not to leave my home of 26 years because I no longer feel safe living in it? And will I even be able to, if people don't want to live here?

I don't think it's scaremongering to frame things in this way. There could very well be negative personal costs on all these fronts.

"*With man's increased uses of radioactive material, more radionuclides have been and continue to be released to the environment. Once released, they can circulate through the biosphere, ending up in drinking water, vegetables, grass, meat, etc*."
https://www.nirs.org/wp-content/uploads/radiation/radiationbasics.pdf

6- Increased toxic legacy we are leaving for future residents of this region.
The toxic legacy we are leaving many future generations that are going to have to manage the radioactive waste we are producing.

It is already well known that the GE operations have left a huge toxic legacy. It is not conscionable to be adding to that legacy.

Will Peterborough be another Port Hope?

Will the headlines of future papers also read "*Warning Port Hope a toxic time bomb; the only solution? Move*" only instead of Port Hope it will say '*Warning Peterborough a toxic time bomb; the only solution? Move.*?

https://www.thestar.com/news/gta/2010/11/09/warning_port_hope_a_toxic_time_bomb_the_only_solution_move.html

https://www.mykawartha.com/news-story/7531084-future-uses-of-general-electric-site-may-be-limited-due-to-chemical-contamination/

https://projects.thestar.com/lethal-legacy/

7- Accidents do happen.

From the PNERP Response Plan,
"*Even though reactor facilities are designed and operated according to stringent safety standards, emergency preparedness and response must operate on the basis that mechanical failure, human error, extreme natural events or hostile action can lead to nuclear or radiological emergencies"*
Source:
https://www.emergencymanagementontario.ca/english/emcommunity/response_resources/plans/provincial_nuclear_emergency_response_plan.html

The CNSC Regulatory Oversight Report for Uranium and Nuclear Substance Processing Facilities in Canada: 2017, 5 OCTOBER 2018 reported that
"*In March 2017, CNSC staff issued eight notices of non-compliance to BWXT related to the effectiveness and implementation of the Toronto facility emergency response program*."
http://srbt.com/Regulatory%20Oversight%20Report%202017%20CMD%2018%20M47.pdf

In BWXT's renewal application they document what they term '*unplanned events'*. More unplanned events will inevitably occur.
Some examples of the '*unplanned events*' that occurred at the Toronto facility as written in BWXT's Licence renewal Application are listed below:
"*1) In 2015, a sprinkler pipe burst…"*
"3) In 2017 at the Toronto licensed facility, a small hydrogen gas leak on Furnace 5 occurred at a union coupling causing a 15 cm flame that lasted three-to -four minutes at the location of the leak."
"4) In 2017 at the Peterborough Fuel Assembly Operation, incorrect Powdered Air Purifying Respirator (PAPR) respirator filters were discovered in use and in stores. As a result, an investigation was initiated and corrective actions implemented."
"6) In 2019, personal air sample for an operator in the Beryllium area was above the Occupational Exposure Limit. Subsequent investigation showed that the ventilation system needed adjustment and was upgraded to increase the capture efficiency which was effective."

Increased nuclear processing in Peterborough will increase the risks for nuclear accidents… possibly from human error, equipment failures or mother nature in the form of tornadoes, floods, ice storms for example. The increase of nuclear activity would

obviously increase the risk for accidents to occur. This increased risk is not acceptable in a populous city.

E) RECOMMENDATION

CNSC's mandate is to regulate
"*the production, possession and use of nuclear substances, prescribed equipment and prescribed information in order to prevent unreasonable risk to the environment, to the health and safety of persons and to national security*;"
https://cela.ca/wp-content/uploads/2019/07/878NuclearPower-SafebyWhatStandard.pdf

I argue that pelleting manufacturing at the Peterborough BWXT facility does not meet the CNSC mandate and that BWXT's license should not be amended to allow pellet manufacturing at the BWXT Peterborough facility as part of the 10-year license renewal.

Sincerely,

Leslie McGrath
A very concerned citizen.