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Oral Presentation

Exposé oral

**Written submission from
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**Mémoire de
Janet McNeill**

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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BWXT Intervention – Hearing dates March 2 & 3, 2020

Background

I've been watching and participating in CNSC hearings since 2006. I've "intervened" on steam generator shipments, the SRB tritium facility in Pembroke, Port Hope facilities, numerous licensing hearings for the Pickering & Darlington reactor stations, the proposed Deep Geological Repository (DGR), and I also attended & spoke at the GE-Hitachi meeting in 2013.

With others involved in the Durham Nuclear Awareness (DNA) group, I've become familiar with nuclear emergency planning for the nuclear generating stations in Ontario.

While not a resident of the neighbourhood around the BWXT facility, I *am* a resident of Toronto.

Like everyone who lives in this city, I daily breathe the air that is being affected by the 10 nuclear reactors operating pretty much in Toronto's backyard, routinely emitting radioactive pollutants to our air and water. Along with millions of citizens around Lake Ontario, I also daily ingest drinking water whose quality is substantially affected by nuclear operations.

Concerns About BWXT's Operations

I am concerned about:

- Lack of public support for the facility
- Lack of public awareness about the facility in the neighbourhood, and in the city in general
- Inappropriate location of this Class 1B nuclear facility in a densifying residential neighbourhood
- Proximity of BWXT facility to residents – to schools, as well as to homes
- Proximity of BWXT facility to a rail line & the attendant potential for a serious accident
- Low-dose exposures of "routine" emissions to people in the area; i.e., health concerns – especially for pregnant women & children
- Safety issues: is this facility really "safe"?
- Emissions data: can we trust the information that BWXT self-reports?
- Continuous use of very un-scientific language in reports from both BWXT and CNSC staff regarding emissions / health / safety impacts
- Un-credible claims being made about environmental / health impacts
- Emergency plans for this facility: are they adequate? Are they transparent?
- Transparency & trustworthiness of the company
- Transparency, trustworthiness & credibility of the Canadian Nuclear Safety Commission, whose mandate includes language about protecting "health, safety, security and the environment"
- Background reports for this hearing (from both BWXT and CNSC) that breeze over serious issues of safety quite as though some serious events there never took place
- The actual meaningfulness of CNSC's public consultation process

The Word “Emergency” in BWXT and CNSC Documents for this Hearing

I counted the number of times the word “emergency” comes up in the BWXT and CNSC staff documents.

BWXT’s CMD (*Commission Member Document*) – 20-H2.1– has the word 39 times in its (relatively brief) licence application.

The CNSC staff CMD (20-H2) has the word emergency 72 times.

The CNSC Compliance Inspection Report? 107 mentions (*in a mere 31 pages*).

This is a good indication that emergencies (& *potential emergencies*) are a matter of some consequence for this facility.

Emergency Management

Nuclear generating stations are responsible for nuclear emergencies only as far as the fence line of their facility. Beyond the fence line, emergency response falls under provincial jurisdiction.

Formerly called the Ministry of Community Safety and Correctional Services, it’s now the (provincial) Solicitor General ministry that’s in charge of emergency plans for the nuclear generating stations (Bruce, Pickering, Darlington) – under the PNERP – Provincial Nuclear Emergency Response Plan.

In actual fact, a truly dizzying number of federal, provincial, regional and municipal agencies/ministries have a role in nuclear emergency planning.

With the BWXT facility, emergency plans involve Toronto Fire Services. Six phone calls from me (*plus one email message*) have so far failed to yield anyone at Toronto Fire Services able to discuss BWXT’s emergency plans with me, and have as of yet resulted only in substantial wasted time for no measurable results. This is pretty frustrating.

CNSC Compliance Inspection Report (January 25, 2019)

In 2018 CNSC conducted an inspection, describing in the Compliance Report its purpose:

The primary purpose of this inspection was to review the effectiveness and implementation of BWXT’s new emergency preparedness program to meet the requirements of the REGDOC 2.10.1. This inspection was scheduled in reaction to three open Directives and five closed action notices related to the effectiveness and implementation of BWXTs emergency preparedness program raised as a result of a CNSC emergency preparedness program inspection conducted at this facility in October 2016.

[CNSC COMPLIANCE INSPECTION Inspection Number BWXT-2018-04 Page 10.]

Timeline of Incidents / Emergencies Since 2016

October 2016 – CNSC inspection of emergency preparedness. Something (*exactly what is never specified*) was going on there, leading to ...

March 2017 – 8 enforcement actions issued by CNSC [*mentioned in CNSC Staff CMD, Pg. 54 & Compliance Report, Pg. 4*]

QUOTE from BWXT CMD:

“Unplanned events occurred over the current licence period, as follows (all previously reported to the CNSC):

- 1) In 2015, a sprinkler pipe burst in the unheated warehouse on the licensed site in Toronto. During an unusually cold month that winter, condensation build up in the normally dry piping system froze and expanded enough to break open the piping, releasing the hold back pressure allowing the system to accidentally activate. The off-site monitoring company immediately detected the situation, which was immediately addressed.
- 2) In 2017, a sprinkler head accidentally activated after it was re-installed too close to the Furnace 2 exit door flame after overhead renovation work completion at BWXT NEC’s Toronto licensed facility. Corrective and preventive actions were implemented to address the situation.
- 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 and did not propagate to other materials. The flame was extinguished by shutting off the gas supply using the emergency stop button. Corrective and preventive actions were implemented across all furnaces.” [*BWXT CMD, Pg. 16/18*].

2017 – “Installation of an Emergency Operations Centre trailer outside Building 9 (Toronto)” [*BWXT CMD, Pg. 19*]

Statement: “This will involve separating the Emergency Plan from the Fire Protection Program as was done for Toronto.” [*BWXT CMD 20-H2.1, Pg. 42*]

June 2018 – **BWXT reviews its emergency plans**

“In 2018, BWXT conducted a full review of its emergency preparedness plan and implemented significant improvements for the Toronto facility based on lessons learned and the corrective actions resulting from the previous exercise.” [*CNSC Staff CMD 20-H2 – Pg. 54 / 63*]

June 2018 – exercise at BWXT; CNSC observed [*CNSC Compliance Report Pg 8*]

September 2018 – full review of emergency preparation plan. Emergency plan inspection by CNSC.

January 25, 2019 – CNSC Compliance Report – some items remain open. Only one (1) recommendation was made:

BWXT-2018-04-R1: BWXT should review recommendations from its full report and implement self-identified improvements to its emergency preparedness program. [*CNSC COMPLIANCE INSPECTION Inspection Number BWXT-2018-04 Page 10 of 31*]

Note: CNSC Compliance Report later explains

** Recommendations are not required to be implemented. [*CNSC COMPLIANCE INSPECTION Inspection Number BWXT-2018-04 Page 12 of 31*]

2020 – BWXT states in its licence request

In the upcoming licence period the 2015 revisions to the National Fire Code and National Building Code will apply to inspections, testing and modifications of the facility.

BWXT NEC will continue to develop and advance its Emergency Management and Fire Protection Program over the course of the next licence period.

[*BWXT CMD 20-H2, Pg. 44*]

To Summarize What Has (Apparently) Occurred

Something (or some *things*) happened in 2016. Or rather, CNSC discovered some problems (*unspecified*) during an October 2016 inspection. Which apparently led them in March 2017 to issue “8 enforcement actions.” In June 2017 an emergency exercise took place, and a new Emergency Operations Centre was installed (*though this is never actually explained in the documents*). BWXT reports in Section **4.10.3 – Future Plans**

As discussed above, BWXT NEC recently revised its Emergency Plan at the Toronto facility leading up to a successful full-scale CNSC-witnessed exercise in September 2018 involving Toronto Fire Services and Toronto Paramedic Services. Currently the Emergency Plan for Peterborough is being revised adopting a similar approach. **This will involve separating the Emergency Plan from the Fire Protection Program as was done for Toronto [this is never explained]**. A full-scale exercise is being planned for Peterborough in 2020 under the updated Emergency Plan. *[BWXT CMD 20-H2.1, Pg. 42]*

In 2018 CNSC conducted an inspection, describing in the Compliance Report its purpose:

The primary purpose of this inspection was to review the effectiveness and implementation of BWXT’s new emergency preparedness program to meet the requirements of the REGDOC 2.10.1. This inspection was scheduled in reaction to three open Directives and five closed action notices related to the effectiveness and implementation of BWXTs emergency preparedness program raised as a result of a CNSC emergency preparedness program inspection conducted at this facility in October 2016. *[CNSC COMPLIANCE INSPECTION Inspection Number BWXT-2018-04 Page 10.*

Comments on The Sequence of Events

Something (unspecified) happened in 2016. CNSC responded with “eight enforcement actions.”

In 2017 BWXT put a new “Emergency Operations Centre trailer outside Building 9” and decided to separate “the Emergency Plan from the Fire Protection Program.”

This is never elaborated upon.

Also unexplained are these excerpts from the *CNSC COMPLIANCE INSPECTION Report BWXT-2018-04, on Page 10*, apparently based on an inspection held in September 2018.

“Recovery

BWXT staff should note that the fire impacted areas of the facility may not be released from TFS control for recovery.

Exercise design:

- The exercise was well designed and well executed with BWXT controllers appropriately establishing control of the exercise and ensuring the tested aspects of the program are adequately reviewed
- Use of dedicated radio channels for controllers is a good practice
- Two TFS personnel were actually contaminated during the exercise which was identified and addressed appropriately by the safety officer for the exercise

- Labels for the different roles in the emergency organization can ensure personnel know who is in what role ...”

[CNSC COMPLIANCE INSPECTION Inspection Number BWXT-2018-04, Page 10]

Curiosity is certainly piqued by some of the above. Sounds like Toronto Fire Services likely got more than it bargained for! It would be fascinating to read the report this must have generated. I would like very much to be able to do so.

From my reading of the reports, it seems that problems uncovered in 2016 (*unspecified in these reports*) led to very delayed actions and improvements. Things dragged out over 3 years, and now, as BWXT applies in 2020 for a 10-year licence extension, some items in the “Compliance Matrix” (*from CNSC’s Compliance Report*) remain open.

From CNSC’s Compliance Report, regarding what led to it:

Executive Summary: “Type II Emergency Preparedness Inspection at the BWXT Toronto Facilities from September 25, 2018 to September 26, 2018. The purpose of this inspection was to provide an overall assessment of compliance with specific clauses of the NSCA and its associated Regulations, the operating licence FFOL-3620.01/2020 and its associated Licence Conditions Handbook (LCH), as well as BWXT’s programs and procedures associated with emergency preparedness as necessary. The inspection also reviewed the implementation and effectiveness of corrective actions that arose from enforcement actions from a previous emergency preparedness inspection conducted at the Toronto Facility.” *[CNSC COMPLIANCE INSPECTION Inspection Number BWXT-2018-04, Page 4]*

CNSC made only 1 recommendation – a very broad one:

BWXT-2018-04-R1: BWXT should review recommendations from its full report and implement self-identified improvements to its emergency preparedness program. *[CNSC COMPLIANCE INSPECTION Inspection Number BWXT-2018-04 Page 10 of 31]*

& then went on to say “Recommendations are not required to be implemented.” *[CNSC COMPLIANCE INSPECTION Inspection Number BWXT-2018-04 Page 12 of 31]*

Quite the time lag we are looking at here! 2016...2017...2018...2019.

So much for the credibility of claims of safety and adequate emergency planning made at the last licensing hearing!

And, after all this, BWXT is only projecting that it will (not that it *has*)

“BWXT NEC will continue to develop and advance its Emergency Management and Fire Protection Program over the course of the next licence period.”

At a facility which the CNSC Compliance Report admits has the capability of “a catastrophic incident.” (*See CNSC Compliance Inspection Report dated January 25, 2019, page 22.*)

Meanwhile, a large section of the Compliance Matrix – namely, Numbers 3, 4 & 5 (*see pages 21 & 22 of the CNSC Compliance Report*) – have items containing critically important aspects of emergency response/communications in emergency situations – that have apparently not been met.

Hardly reassuring!

Emergency Plans: Deficient!

As outlined above (see ‘Concerns About BWXT’s Operations’), there are many areas of concern regarding operations at 1025 Lansdowne. I’ve focused here on the issue of emergency plans, and am unable to conclude that the facility has prepared properly for emergencies over this licensing period. It seems the company has only been brought to the table regarding emergency planning by “incidents” that led to CNSC inspections, and that later changes to emergency procedures have been made under the gun, as it were.

There is little to no transparency here, and many things are unexplained.

It appears almost as though BWXT has a cavalier attitude toward emergency planning, quite as though there are no fears that a serious emergency might occur. There is no evidence whatsoever about the existence of evacuation plans for members of the nearby community should a serious accident occur at the facility. Yet CNSC acknowledges the possibility of a “catastrophic incident.”

What we see here is a lack of transparency on the part of the company, and also a frustrating bureaucratic run-around, frankly, in attempts to deal with Toronto Fire Services personnel.

BWXT states in its CMD in Section 4.10.4 ‘Challenges’

It is expected that performance under the Emergency Management and Fire Protection SCA will continue to meet or exceed regulatory requirements and expectations over the next licence period. [BWXT CMD 20-H2.1, Page 42]

Yet how credible is this, in light of all that took place in the previous (or rather current) licensing period?

Finally, bland statements and reassurances offered by CNSC staff are not exactly ringing endorsements of the company’s performance.

“The inspection team found that the implementation of corrective actions due to previous inspection enforcement actions were **acceptable**.” [Highlighting mine. CNSC Compliance Report CNSC COMPLIANCE INSPECTION Inspection Number BWXT-2018-04, Page 4, Executive Summary]

Note: The CNSC Staff CMD spells out clearly what their ratings signify:
Fully Satisfactory (FS)

Safety and control measures implemented by the licensee are highly effective. In addition, compliance with regulatory requirements is fully satisfactory, and compliance within the safety and control area (SCA) or specific area exceeds requirements and CNSC expectations. Overall, compliance is stable or improving, and any problems or issues that arise are promptly addressed.

Satisfactory (SA)

Safety and control measures implemented by the licensee are sufficiently effective. In addition, compliance with regulatory requirements is satisfactory. Compliance within the SCA meets requirements and CNSC expectations. Any deviation is minor and any issues are considered to pose a low risk to the achievement of regulatory objectives and CNSC expectations. Appropriate improvements are planned. [CNSC Staff CMD 20-H2, page 89]

BWXT, we note, is not receiving a Fully Satisfactory rating.

Summary of Findings

1. Reading the documents was a bit surreal & “down the rabbit hole.” It seemed neither BWXT nor CNSC fully explained all the issues clearly, & it was necessary to jump back and forth between them to put together a timeline. Even then, some things remain unexplained (*e.g. what was it that actually happened in 2016? Why the new trailer in 2017? Why the separation between emergency plans and fire plans – this is never explained – and much of what needs to be done at/by BWXT in terms of emergency plans/communications during an emergency remains as yet undone ... if I am reading the “Compliance Matrix” correctly; on that point I am not 100% sure*). It is now 3 ½ years since the original precipitating event(s).
2. CNSC’s Compliance Report and its acknowledgement that “Recommendations are not required to be implemented” was one of those “Uh-oh; we’ve gone down the rabbit hole again!” moments. Canada’s nuclear regulator regulates? But its recommendations must not be *followed*?
3. The lack of prompt action – on the part of both BWXT and CNSC – on the serious issues regarding emergency plans requiring attention is frankly rather shocking. It does not inspire confidence in either agency.
4. Language used by BWXT is often vague, and terms not at all scientific. The very imprecise words “acceptable” and “satisfactory” are used a good deal. Statements such as the following are utterly unconvincing:

ERAs specific to the Toronto and Peterborough facilities has been completed in accordance with CSA N288.6-12 [28]. The ERAs concluded that emissions of radioactive material from the facility were **very low** and pose no adverse effect to human health.

The emissions of non-radioactive contaminants from the facility were below the Ministry of the Environment, Conservation and Parks point of impingement standards; and exposure to water releases is also estimated to be **minimal**. Hence, it was concluded that the emissions of non-radiological substances resulting from the BWXT NEC facilities pose no adverse effect to human health.

The ERA also concluded that emissions of radioactive and non-radioactive materials from the facility pose no adverse effects to non-human biota.

[BWXT CMD 20-H2.1, Section 4.9.1.1 page 33; highlighting mine]

BWXT’s statement “In the upcoming licence period the 2015 revisions to the National Fire Code and National Building Code will apply to inspections, testing and modifications of the facility” *[BWXT CMD 20-H2, Pg. 44]* is another that really does not inspire confidence. Why was this not taking place years ago? 2015 was five years ago!

5. There are legitimate fears of what might occur in this neighbourhood – an area filled with young families – when one realizes that incidents *do* occur, planning is clearly inadequate, enforcement non-existent, there exists a huge time lag between problems and solutions, & when CNSC spells out one (rather broadly-worded) recommendation, namely

BWXT-2018-04-R1: BWXT should review recommendations from its full report and implement self-identified improvements to its emergency preparedness program.

But then goes on to state, and I quote

“Recommendations are not required to be implemented.”
[Appendix A of CNSC Compliance Report, Pg. 12]

And finally, last but not least, the CNSC Compliance report explicitly mentions the possibility of a “catastrophic incident.”

Conclusion and Recommendation

Boxer Mike Tyson once said “Everyone has a plan until they get punched in the face.”

The BWXT facility does not even seem to have much of a plan – though perhaps there has been some improvement during this licence period. (*Under the gun, as previously referenced.*)

Still, the company’s track record on the emergency planning front does not inspire confidence, and after all, emergency plans are only one aspect of the full picture at 1025 Lansdowne.

One fears the facility is an accident – a *bad* accident – waiting to happen. And actually, in spite of CNSC staff’s bland attempts in their CMD to minimize the severity of past events, the message does get through, via the Compliance Report, that it may actually be a miracle that there has not already been a disaster.

(As for health impacts, there is very likely a quiet disaster already occurring. Just no obvious smoking gun, unfortunately.)

It is difficult to imagine a Universe (*one involving common sense, at any rate*) in which keeping this facility operating in a busy, growing residential area – with 4 schools operating nearby – would even be an option.

I remember harvesting a great quotation some years back:

“No matter how far you’ve gone down a wrong road, TURN BACK!” (*Source unknown*)

Such sensible advice!

Of course, as Upton Sinclair said,

“It is difficult to convince a man of something when his salary depends upon his not understanding it.”

I call on the CNSC to turn down this licence request. Neither Toronto (nor Peterborough) needs a facility of this nature operating close to homes and schools.

It should be ordered to shut down its operations here and then held financially responsible for a careful, proper, well-monitored site clean-up.

This, then, is what I am calling on Canada’s nuclear regulator to do, in keeping with its mandate to regulate “the use of nuclear energy and materials to protect health, safety, security and the environment.”