



Nuclear Energy Canada Inc.

COMMUNITY NEWSLETTER

PROUDLY SUPPORTING OUR COMMUNITY

SPRING 2020

1025 Lansdowne Avenue, Toronto, ON

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Due to the COVID-19 pandemic, we are canceling our annual summer Community BBQ.

We look forward to reinstating this event in 2021.



BWXT NEC Licence Renewal Hearing

BWXT Nuclear Energy Canada Inc. (BWXT NEC) holds a Class IB Nuclear Fuel Facility Operating License issued by the Canadian Nuclear Safety Commission (CNSC). The current licence, issued on January 1, 2011, is valid until December 31, 2020. BWXT NEC submitted an application to the CNSC on Nov. 12, 2018 to renew its licence for a period of 10 years.

The CNSC considers licence applications for nuclear facilities via a public hearing process which takes into account the views, concerns and opinions of interested parties and intervenors. From March 2-3 in Toronto, Ontario, and March 4-6 in Peterborough, Ontario, BWXT NEC representatives participated in the CNSC Public Hearing. Throughout the week-long process, BWXT NEC representatives, CNSC Staff and the Commission heard from intervenors in Toronto and Peterborough. BWXT NEC and CNSC Staff were given the opportunity to answer questions from the Commission after hearing from intervenors.

The Commission will deliberate on BWXT NEC's licence renewal request after obtaining the results of further soil testing to be conducted in Peterborough as outlined in the Notice of Continuation of Public Hearing which was issued on April 6th: <http://www.nuclearsafety.gc.ca/eng/the-commission/pdf/Notice-Continuation-BWXT-20-H2-e.pdf>.

A Message from BWXT NEC President, John MacQuarrie



I am John MacQuarrie, president of BWXT NEC and I am pleased to re-introduce myself in this Community Newsletter.

I want to first highlight the licence renewal hearing I participated in during the first week of March and thank the public for participating in this process. Over the course of the hearing week, I learned a lot about the communities in Peterborough and Toronto. I saw firsthand just how passionate our neighbours are about their communities and I want to reassure you that safety is always my top priority. I hear your concerns and hope that information shared during the hearing provided insight into our safety and operations. We always look for new ways to improve the business and I hope you will be pleased with the new changes that are coming. We are planning to survey residents in the Fall to help us gather valuable insight and determine areas for improvement.

If you have a suggestion or question, please contact us at questions@bwxt.com.

John MacQuarrie
President, BWXT Nuclear Energy Canada Inc.



2019 Annual Compliance Report Available

BWXT NEC's 2019 Annual Compliance Report was submitted to Canada's nuclear regulator, the Canadian Nuclear Safety Commission (CNSC), on March 30, 2020. The purpose of this report is to demonstrate that BWXT NEC has successfully met the requirements of the Nuclear Safety and Control Act and its Class IB Nuclear Fuel Facility Operating Licence. BWXT NEC holds a 10-year licence, which expires December 31, 2020.

The report, which is reviewed by CNSC staff, provides the CNSC with information related to BWXT NEC's performance in 14 Safety and Control Areas (SCAs). The 14 SCAs are management system, human performance management, operating performance, safety analysis, physical design, fitness for service, radiation protection, conventional health and safety, environmental protection, emergency management and fire protection, waste management, security, safeguards and non-proliferation, packaging and transport.

The report is available to members of the public on BWXT NEC's website at nec.bwxt.com/safety.

2019 Air Results

Air and water emissions are routinely measured for the presence of uranium. BWXT NEC performs both continuous in-stack sampling and boundary air monitoring. The facility performs continuous in-stack monitoring drawing a sample of air across a filter capable of trapping uranium dust. The samples are analyzed daily and verified externally by an independent laboratory. Boundary samples are drawn at five positions around the Toronto facility perimeter using high-volume air samplers. The filters run 24/7 and are collected from the monitors every week and sent to a lab for analysis. New filters are then inserted into the air samplers so the air along the boundary is being tested continually throughout the year. The Toronto facility has exceptionally low emissions.

Toronto Air (Boundary)	2018	2019
Number of boundary samples taken	260	260
Number of samples > action level (0.08 µg/m ³)	0	0
Average concentration (µg/m ³)	0.000	0.000
Highest value recorded (µg/m ³)	0.003	0.001

BWXT NEC samples its stacks daily for the presence of uranium.

Radiation

The CNSC regulates the nuclear energy industry to limit the radiation that employees and members of the public receive. Using studies performed by the International Commission on Radiological Protection on acceptable levels of radiation exposure, the CNSC has set limits of 50 mSv (millisievert) per year, or 100 mSv per five-year span for workers. The regulatory limit for members of the public is 1 mSv. The normal background radiation in Canada is 1.8 mSv per year.

Did You Know? The estimated annual dose to a member of the public as a result of the BWXT Toronto operation is 0.02 mSv. This is a small fraction of the regulatory limit.

BWXT NEC has a comprehensive radiation protection program and is guided by the principles of ALARA (as low as reasonably achievable). We use the best available technology to restrict uranium emissions and ensure emissions from our facilities are as low as possible. The small amount of uranium emissions that do occur does not pose a risk to members of the public.

2019 Water Results

Water at BWXT NEC is used in the production process and to clean protective clothing, floors and other janitorial functions. The water is first held in storage tanks in the facility, treated to remove uranium dioxide, tested and only released in batches once the test results confirm it meets release requirements.

In 2019, BWXT NEC emitted 0.57 kilograms of uranium to the sewers in the one-year period – which is less than 500 mL (for reference, a standard bottle of water contains 500 mL). The release limit for uranium water emissions is 9,000 kg/year.

Toronto Water	2018	2019
Number of samples exceeding 6 ppm batch release action level	0	0
Average uranium concentration at point of release (ppm)	0.72	0.46
Highest uranium concentration at point of release (ppm)	2.95	2.58
Total discharge to sewer (kg uranium)	0.94	0.57

CNSC Publishes 2019 Independent Environmental Monitoring Results

In addition to BWXT NEC having an environmental monitoring program to demonstrate that the public and the environment are protected from emissions related to our facility's nuclear activities, the CNSC has also implemented its Independent Environmental Monitoring Program (IEMP) to verify that the public and the environment around licensed nuclear facilities are safe.

The IEMP involves taking samples from public areas around the facilities, and measuring and analyzing the amount of radiological and hazardous substances in those samples. CNSC staff then collect the samples and send them to the CNSC's laboratory for testing and analysis.

The IEMP 2014, 2016, 2018 and 2019 results indicate that the public and the environment in the vicinity of the BWXT NEC Toronto facility are protected and that there are no expected health impacts. These results are consistent with the results submitted by BWXT NEC – demonstrating that the licensee's environmental protection program protects the health and safety of people and the environment.

For more information about the CNSC IEMP or to see the CNSC IEMP full report, visit: www.nuclearsafety.gc.ca.

Hydrogen Tank

Why does BWXT NEC have a hydrogen tank on site and is it safe?

Hydrogen is used at BWXT NEC's Toronto facility for pellet sintering. Sintering is a process that turns powder into a solid form. The natural uranium dioxide pellets are sintered in a high-temperature furnace with a hydrogen atmosphere to harden them into a ceramic.

The hydrogen storage tank is sited, installed, operated and maintained according with all requirements and is inspected by the Technical Standards and Safety Authority of Ontario. The hydrogen is stored cryogenically as a liquid in a 9000 gallon tank on BWXT NEC's property, located away from buildings, surrounded by a fence and cement posts. The tank at our facility is smaller than the tanks you may have seen transporting hydrogen by road on a regular basis (12,000 gallons or even larger). The tank is a low pressure hydrogen system, operating at less than 150 psi (compare to gaseous hydrogen cylinders that operate at approximately 2500 psi).

Is the hydrogen tank safe for residents who live nearby?

BWXT NEC has reviewed many accident scenarios in conjunction with the hydrogen tank. Through this analysis, we are able to conclude that there are no credible accident scenarios resulting in:

- Structural damage to site buildings with a release of uranium
- Structural damage to offsite buildings
- Injury to persons from a "blast"

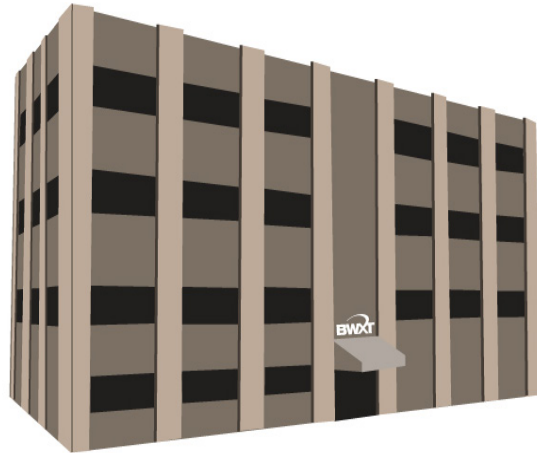
In very low likelihood events, broken windows in the immediate area could occur. Although exceptionally unlikely, a hydrogen fire could expose individuals outdoors and in the immediate vicinity to heat, which would cause them to increase distance or move indoors to limit potential injury.

BWXT has a comprehensive emergency response plan for each site which is continually updated. Like all industrial businesses, each BWXT facility has established emergency prevention programs to minimize the risk of fires and other hazardous events, as well as robust response plans that prescribe the actions to be taken to prevent or minimize potential health and environmental hazards.



Did You Know?

One dump truck
filled with 10 cubic yards of
soil contains about
18 grams of uranium



In 2019, BWXT NEC in Toronto released
7 grams of uranium
into the air over the entire year

Learn more facts about uranium on our website at nec.bwxt.com

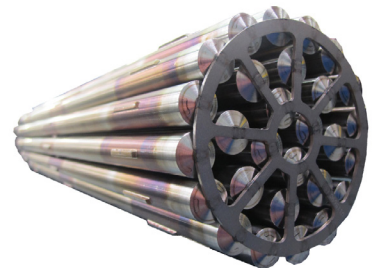
Recent Website Changes

In an effort to keep the community informed, we have listed below the recent changes to our website since the last Community Newsletter was mailed in December 2019. Past copies of our newsletters can be found on BWXT NEC's website at www.nec.bwxt.com.

If you would like to receive email updates, you can let us know by emailing questions@bwxt.com.

Website Updates:

- Frequently Asked Questions (FAQ's)
- Safety Assessment Report (SAR) summaries
- Preliminary Decommissioning Plan (PDP) summaries
- Commission Member Document (CMD) from licence hearing
- BWXT NEC's licence hearing presentation
- 2019 Annual Compliance Report (ACR)
- Emergency Plan summaries
- Fire Protection Program summaries



TALK TO US

We Want to Hear From You!

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