



Nuclear Energy Canada Inc.

COMMUNITY NEWSLETTER

Proudly supporting our community and supplying the fuel that powers 1/4 of the province!

SUMMER 2021

1160 Monaghan Road, Peterborough, ON

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What We Do

In Peterborough, we assemble CANDU® fuel bundles using natural uranium dioxide ceramic pellets from our Toronto facility and zircaloy tubes from our Arnprior facility. The fuel bundles are then sent to Ontario Power Generation’s Darlington and Pickering Nuclear Generating Stations. Both our Peterborough and Toronto facilities are licenced by Canada’s nuclear regulator, the Canadian Nuclear Safety Commission (CNSC).

Approximately 420 people work at BWXT in Peterborough in high-tech, manufacturing and administrative positions (180 are engineers in disciplines such as software, metallurgy, mechanical, electrical and systems). This team produces the fuel to power 1 in 4 homes and businesses in Ontario with greenhouse gas emissions-free, affordable electricity!!

Protecting Our Community

The CNSC regulates the nuclear energy industry to limit radiation 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 per year, or 100 mSv per five-year span for workers.
- 1 mSv per year for members of the public.



At BWXT Nuclear Energy Canada (BWXT NEC), we have a comprehensive radiation protection program which 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.

Did You Know:



Each year, the public in Canada is exposed to **1.8 mSv** of natural background radiation



The 2020 dose to the public from BWXT Peterborough was **0.00 mSv**



The average annual dose from indoor radon in Canada is **1.15 mSv**



The dose from a dental x-ray is **0.005 mSv**



The dose from living in a brick or concrete building is **0.07 mSv**

Uranium & Radiation

Uranium is a naturally occurring, weakly radioactive element which is present at low levels in the environment and occurs naturally in soil and rocks, the water we drink and air we breathe. Because uranium is a naturally-occurring, low-level radioactive material that exists virtually everywhere, it contributes to what is called “natural background radiation.”

Radiation is energy in the form of waves or particles, and it doesn’t just come from nuclear energy. Radiation is all around us and we’re exposed to both natural and man-made sources of radiation daily. There are two types of radiation:

- Ionizing - from natural & man-made sources such as x-ray machines and nuclear power plants
- Non-ionizing - from microwaves, radio waves and television signals



2020 Annual Compliance Report Available

Each year, we submit an Annual Compliance Report (ACR) to Canada's nuclear regulator, the CNSC. The ACR demonstrates that BWXT NEC has successfully met the requirements of the Nuclear Safety and Control Act and its Class IB Nuclear Fuel Facility Operating Licence. The ACR, which is reviewed by CNSC Staff, provides the CNSC with information related to BWXT NEC's performance in the CNSC's 14 Safety and Control Areas. The 2020 ACR is available to the public on our website at nec.bwxt.com/safety. For any questions about the ACR, please contact us by email at questions@bwxt.com or by phone at 1.855.696.9588.

At BWXT NEC's facility in Peterborough, air and water emissions are routinely measured for the presence of uranium. Our facility has exceptionally low emissions. An overview of uranium emissions are included below:

2020 Air Results

At our Peterborough facility we perform in-stack sampling. Due to the nature of the process and stack sample results to-date, boundary monitoring is not required.

The 2020 release limit for uranium air emissions, which is set by the CNSC, is 550 g/year. BWXT NEC releases just a small fraction of the limit.

Peterborough Air (Stack)	2019	2020
Number of samples taken	47	48
Number of samples > action level (1.0 µg/m ³)	0	0
Highest value recorded (µg/m ³)	0.009	0.003
Total discharge to air (grams uranium)	0.003	0.003

We're proud of our long safety record – because nothing is more important to us than the safety of our employees, the environment and our community.



2020 Water Results

Water is used to clean floors and other janitorial functions in the uranium pellet loading and end closure weld areas.

At the BWXT NEC facility in Peterborough, all potentially uranium-contaminated waste water is held in storage tanks, filtered and then samples are sent to an external lab for analysis. This waste water is only released once the test results confirm it meets release requirements.

The 2020 release limit for uranium water emissions, which is set by the CNSC, is 760 kg/year. BWXT NEC releases just a small fraction of the limit.

Peterborough Water	2019	2020
Number of samples exceeding 6 ppm batch release action level	0	0
Average uranium concentration at point of release (ppm)	0.04	0.20
Highest uranium concentration at point of release (ppm)	0.07	0.37
Total discharge to sewer (kg uranium)	0.00002	0.00021

TALK TO US

We Want to Hear From You!

Phone: 855-696-9588
 Email: questions@bwxt.com
 Online: nec.bwxt.com

BWXT Nuclear Energy Canada Inc.
 1025 Lansdowne Avenue
 Toronto, ON M6H 4H2

BWXT Nuclear Energy Canada Inc.
 1160 Monaghan Road
 Peterborough, ON K9J 0A8

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