



WHAT WE MAKE

At BWXT Nuclear Energy Canada Inc. (BWXT NEC) in Toronto, we make ceramic pellets from natural uranium powder. After pressing, baking, grinding to precision size and inspecting the pellets, we send them to our facility in Peterborough where they are placed into fuel bundles for CANDU® power stations in Ontario.

NATURAL URANIUM

Uranium is an element found all around us in nature: in most rocks and soils; in rivers and oceans; in the food we eat; and in our bodies. Because uranium is a naturally-occurring, low-level radioactive material that exists virtually everywhere, it contributes to what is called “natural background radiation.”

HEALTH & SAFETY

BWXT NEC’s number one priority is the health and safety of workers, members of the public and the environment. BWXT NEC operates its facility at the highest safety standards and in accordance with all applicable laws and regulations.

BWXT NEC makes publicly available its Annual Compliance Report which is submitted to Canada’s nuclear regulator, the Canadian Nuclear Safety Commission. The reports can be found at www.nec.bwxt.com/safety.

We are committed to protecting the health & safety of our employees, members of the public and the environment.



WHO WE ARE

BWXT Nuclear Energy Canada Inc. (BWXT NEC), a subsidiary of BWXT Canada Ltd., has more than 60 years of extensive experience and innovation in the supply of nuclear fuel and fuel channel components, services, equipment and parts for the CANDU® nuclear power industry. This includes designing and supplying highly reliable nuclear equipment to fuel, inspect and refurbish reactors. BWXT NEC employs approximately 400 skilled employees at three locations in Ontario: Peterborough, Toronto and Arnprior. Learn more at nec.bwxt.com.

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BWXT Nuclear Energy Canada Inc.

Toronto
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Finished natural uranium pellets.

The Toronto facility is licensed by Canada's nuclear regulator, the Canadian Nuclear Safety Commission (CNSC). BWXT NEC is committed to meeting all of its licence requirements.

CNSC staff inspects the facility to ensure adherence to the licence conditions. The CNSC may also request, or it may be a condition of BWXT NEC's licence, that the facility undertakes specialized audits or submit independent third party audit reports.

ENVIRONMENTAL MONITORING

BWXT NEC is committed to minimizing the effects of its operations on the environment and complies with all relevant environmental regulatory laws.

The BWXT NEC Toronto facility has very low emissions that are well below regulatory limits. More information on our environmental and safety performance can be found in our Annual Compliance Report which is available on our website at nec.bwxt.com/safety.

The pellets made in our Toronto facility ultimately provide approximately 25% of Ontario's electricity.

URANIUM EMISSIONS MONITORING - AIR

BWXT Nuclear Energy Canada (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 Boundary samples are high volume air samples drawn at five positions around the Toronto facility perimeter.

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

	2018	2019
Number of boundary samples taken	260	260
Number of Sample > Action Level (0.08 ug/m ³)	0	0
Average concentration (ug/m ³)	0.000	0.000
Highest value recorded (ug/m ³)	0.003	0.001

URANIUM EMISSIONS MONITORING - WATER

Water is used in the production process and to clean protective clothing, floors, equipment and in 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.

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

The release limit for uranium water emissions, which is set by the CNSC, is 9,000 kg/year. BWXT NEC releases just a small fraction of the limit.

*Parts per million

RADIATION

Radiation is energy in the form of waves or particles. Radiation doesn't just come from nuclear energy. It's all around us – and we're exposed to both natural and man-made sources of radiation daily. There are two types of radiation, ionizing and non-ionizing. Some examples of non-ionizing radiation include microwaves, radio waves and television signals. Ionizing radiation comes from natural sources and man-made sources such as x-ray machines and nuclear power plants.

RADIATION PROTECTION

The Canadian Nuclear Safety Commission (CNSC) regulates the nuclear energy industry to limit the radiation that our employees and neighbours receive. Using studies performed by the International Commission on Radiological Protection on acceptable levels of radiation exposure, the CNSC has set limits for workers of 50 mSv per year, or 100 mSv per five-year span and 1 mSv per year for members of the public.

BWXT NEC has a comprehensive radiation protection program and is guided by the principles of ALARA (as low as reasonably achievable).

Environmental TLDs (thermoluminescent dosimeter) at the plant boundary of the Toronto facility are used, along with the estimated effective dose as a result of air releases, to estimate a public radiation dose.

The estimated annual dose to a member of the public as a result of the BWXT operation is 0.02 mSv.

