



## WHAT WE MAKE

At BWXT Nuclear Energy Canada's (BWXT NEC) Toronto facility, 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 all 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](http://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 350 skilled employees at three locations in Ontario: Peterborough, Toronto and Arnprior. Learn more at [nec.bwxt.com](http://nec.bwxt.com).

### Contact Us

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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 Nuclear Energy Canada (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](http://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. 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 750 g/year. BWXT NEC releases just a small fraction of the limit.

### Results of boundary air monitoring at the Toronto facility:

	2015	2016
Number of boundary samples taken	265	260
Number of Sample > Action Level (0.08 ug/m <sup>3</sup> )	0	0
Average concentration (ug/Um <sup>3</sup> )	0.001	0.001
Highest value recorded (ug/Um <sup>3</sup> )	0.002	0.039

## URANIUM EMISSIONS MONITORING - WATER

Water is used in the production process and to clean protective clothing, walls, 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 regulatory requirements to be released.

	2015	2016
Number of samples exceeding 6 ppm* batch release action level	0	0
Average uranium concentration in undiluted water (ppm)	0.47	0.83
Highest uranium concentration in undiluted water (ppm)	2.44	3.65
Total discharge to sewer (kgU)	0.39	0.65

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 defined as energy that is transmitted in the form of waves or particles. Radiation is sometimes associated with the use of nuclear energy. However, radiation is all around us and people are exposed to both natural and man-made sources. Heat and light from the sun are examples of naturally-occurring radiation. Microwaves, radio waves and television signals, are other forms of radiation common in our daily lives.

## 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 Nuclear Energy Canada (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 less than 0.001 mSv.**

