

# URANIUM PROCESSING SERVICES

Downblending and Recovery



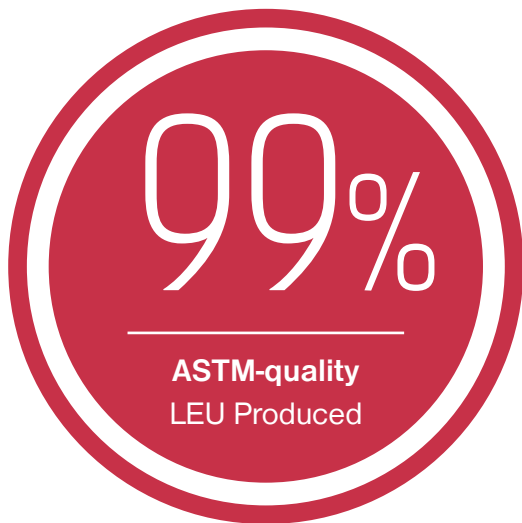


# URANIUM PROCESSING SERVICES

BWXT Nuclear Operations Group, Inc. is a proven leader in the receipt, storage, characterization, dissolution, recovery and purification of a variety of uranium-bearing materials. For decades, its Uranium Processing Services facility in Lynchburg, Virginia, has provided all phases of uranium downblending and uranium recovery. The facility routinely ships final products both domestically and internationally.

## Unique Capabilities

- Designed and licensed to handle all uranium enrichments – from depleted to fully enriched.
- Licensed by the U.S. Nuclear Regulatory Commission (NRC) to possess, safeguard and use up to 80 metric tons (MT) of enriched uranium.
- Staffed with experienced and qualified personnel to support federal and state licensing and safety-related activities.
- Employed with highly trained engineers, operators and technicians who can manufacture, test and characterize all uranium forms.
- Experienced in international and domestic shipping of nuclear fuel and fuel-bearing components, and meeting all required import/export licenses and regulatory requirements.
- Supported by on-site National Institute of Standards and Technology (NIST) certified laboratories that conduct metallurgical, chemical isotopic evaluations of nuclear fuel and uranium-bearing materials and products.
- Recognized for superior safety record and ratings from the NRC's Licensee Performance
- Rating Program that covers the entire scope of licensed activities.
- Known for its well-defined and rigorous ISO 9001 Quality Assurance Program.



# DOWNBLENDING

BWXT's Lynchburg operation has a fully licensed commercial downblending facility. Its scope of experience includes the downblending of 50 MT of high-enriched uranium (greater than 20 percent HEU) to fully conforming commercial low-enriched uranium (LEU) in support of the U.S. government's fissile material disposition program.

## Unique Capabilities

Production capacities of up to 500 kg uranium per day of quality LEU at enrichments up to five percent, suitable for use in the commercial nuclear fuel cycle; production of more than 600 MT of ASTM-quality LEU with process yields exceeding 99 percent.

- International Atomic Energy Agency (IAEA) oversight and independent monitoring, passing all IAEA performance standards.
- Unique BWXT-designed process stream monitors for high-volume processing and greatest possible safety.
- A state-of-the-art data acquisition system with bar codes and touch screen terminals, increased throughput, and reduced cost and data errors.
- BWXT-built and designed one-of-a-kind direct-metal dissolution process; more economical and flexible than other conventional metal dissolution methods.

# URANIUM RECOVERY



Valuable uranium is recovered from all forms of uranium-bearing scrap material, safely accommodating all enrichments. The facility's experience includes processing scrap material from its internal operations, as well as managing scrap material from other facilities, programs and countries. Since 1962, the site has recovered and purified more than 48 MT of valuable HEU from scrap, waste and unused product.

## Unique Capabilities

- Features purification capacities in excess of 1.5 MT HEU annually.
- Recovery processes accommodate uranium from all forms and enrichments of scrap material.
- Produces end products of almost any form, including uranyl nitrate solutions and uranyl nitrate hexahydrate (UNH) crystals or oxides.
- Provides high-purity HEU feed for downblending into ASTM LEU.





# NICKEL PURIFICATION AND RE-USE

BWXT has successfully demonstrated technology to clean scrap metals contaminated with radiological materials such as uranium, thorium and technetium. Results from the demonstration, using nickel, proved that the contaminated nickel product was as clean as, or cleaner than, commercially available nickel.

BWXT intends to build a processing plant to clean contaminated scrap metals, with capabilities to purify many of the different contaminated metals currently owned and stored by the U.S. Department of Energy (DOE). The clean metal products could then be re-used to provide stable raw metal supplies and prices for DOE and other applicable government programs.

People Strong

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At BWX Technologies, Inc. (NYSE: BWXT), we are People Strong, *Innovation Driven*. Headquartered in Lynchburg, Va., BWXT provides safe and effective nuclear solutions for national security, clean energy, environmental remediation, nuclear medicine and space exploration. With approximately 6,600 employees, BWXT has 12 major operating sites in the U.S. and Canada. In addition, BWXT joint ventures provide management and operations at more than a dozen U.S. Department of Energy and NASA facilities. Follow us on Twitter at @BWXTech and learn more at [www.bwxt.com](http://www.bwxt.com).

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