BWXT
BWX Technologies, Inc.

BWXT Advanced Technologies Microreactor Development

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BWX Technologies employs nuclear technology to solve some of the world's most important problems

OUR MISSION

- Global Security
- Clean Energy
- Nuclear Medicine
- Space Exploration
- Environmental Remediation

$2.5B
2023 Revenues

415
Reactors delivered for Naval Nuclear Power

300+
Commercial nuclear steam generators

7,800+
Employees

165-Year History of Innovation

75-Year History of Nuclear Technology

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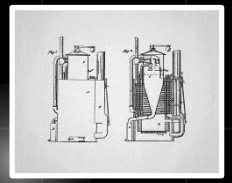


1856
Stephen Wilcox patented the water tube boiler

1953
Designed and fabricated components for the world's first nuclear powered submarine the USS Nautilus

2015
Delivered the 385th nuclear core to the Navy

2017
Awarded NASA Nuclear Thermal Propulsion Reactor Design contract

2018
Entered the nuclear medicine market

2019
Awarded first Columbia-class contract

2020
Awarded Savannah River Site contract

2022
DoD contract to build Pele the first microreactor in the United States

2023
BWXT to provide nuclear reactor engine and fuel for DARPA NASA DRACO space project

NON-NUCLEAR | NUCLEAR | BWXT ERA

BWXT

BWX Technologies, Inc.

Land

Electric & thermal energy

Military

- Military operations
- Reduced vulnerabilities and signature

Off-Grid

- Data centers
- Small footprint
- Mining, oil & gas sites

Sea

Naval nuclear propulsion

- Naval nuclear reactors and components
- Nuclear fuel & materials

Space

Propulsion & power

- Thermal propulsion for rapid transit in the cis-lunar volume
- Deeper space exploration

Fuel

TRISO

- Inherently safe by design
- Thoroughly tested
- Proven to withstand 3,000 degrees F

Nuclear Medicine

- Diagnostic imaging
- Radio therapeutic treatments

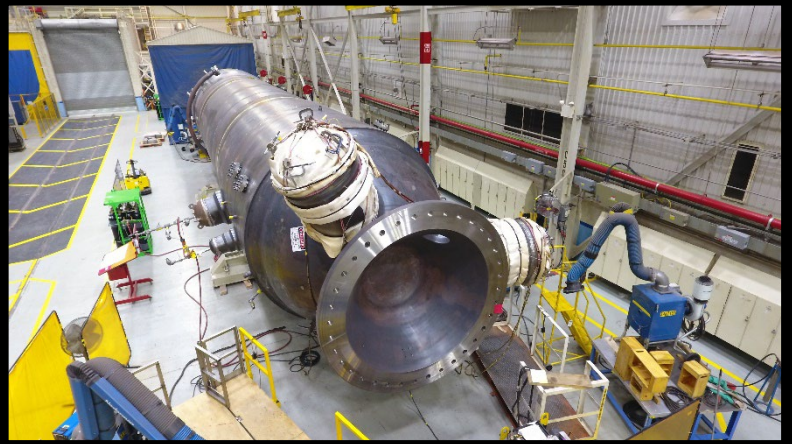
Clean-Up

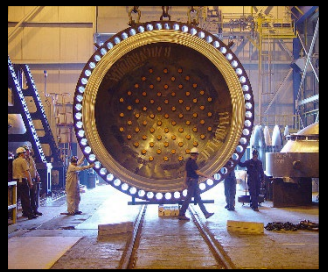
Environmental & technical

- High-consequence operations
- Management, operational & technical services

How We Supply & Serve the Nuclear Industry

	Design	Manufacture	Service
Steam generators	✓	✓	✓
Reactor vessels	✓	✓	✓
Pressurizers	✓	✓	✓
Heat exchangers	✓	✓	✓
Piping Assemblies	✓	✓	✓
Waste containers	✓	✓	✓
Fuel	✓	✓	
Fuel handling	✓	✓	✓

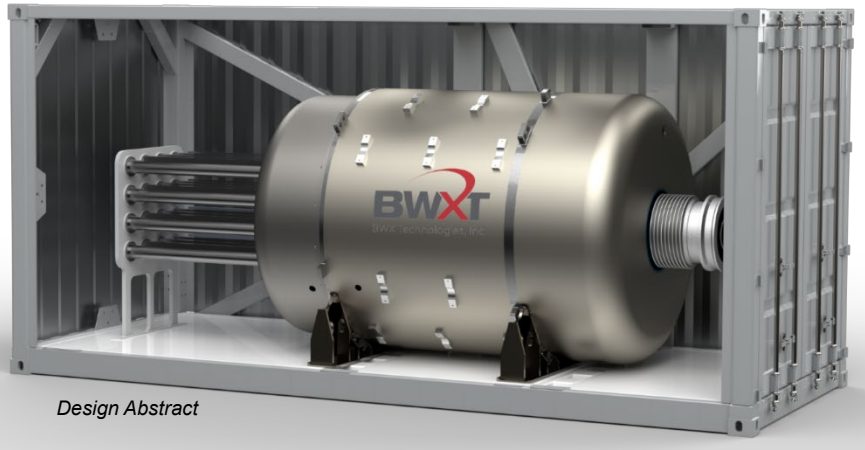




Project Pele

Prototype Demonstration of a Passively Safe Transportable Micro Nuclear Reactor

- High Temperature Gas Reactor
  - ~1-5 MWe of Electrical Power for 3 Years
- HALEU (19.75% enriched) TRISO Fuel
- Black-start capable
- Rapidly deployed
- Rapidly decamped
- Minimal environmental footprint
- Transportable by truck, rail, ship, and C-17
  - Size and weight constraints on reactor system
- Pilot fielding at Idaho National Lab

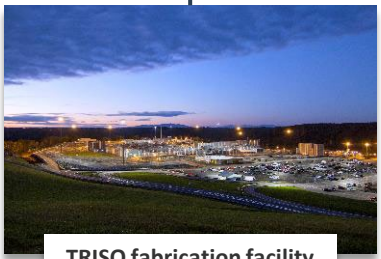


Design Abstract

BWXT Advanced Nuclear Reactor (BANR)

- 50 MW_{th} per reactor, scalable to site needs
- Robust TRISO Fuel
- Flexible power conversion: heat, electricity or co-generation
- High Temperature gas (HTGR) coolant technology
- High density, BWXT-fabricated fuel enables 5+ year refueling cycles
- Passive inherent safety

TRISO Fuel



TRISO fabrication facility

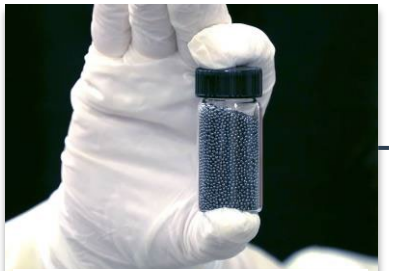
BWXT has operational infrastructure to produce TRISO at scale

- License: BWXT possesses and maintains the only two commercial NRC Category 1 licensed facilities in the US (Lynchburg, VA and Erwin, TN) allowing us to possess and work with enriched Uranium up to and including High Enriched Uranium (HEU)
- Equipment: Existing operating line actively producing TRISO fuel for Project Pele
- Personnel: Staff with expertise to produce TRISO fuel, provide material accountability, quality assurance, and maintain Category 1 license

Project Pele TRISO pellets

BWXT is manufacturing TRISO at scale today

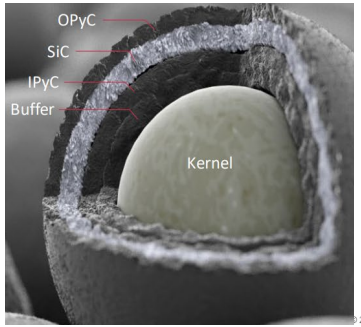
- Producing TRISO at scale today necessary to meet Project Pele demand, quality and schedule
- Actioning scale up plan to meet commercial demand for BANR[1] utilizing Project Pele lessons learned and experience with the goal to be a merchant supplier for TRISO fuel



BWXT produced TRISO particles

TRISO is an inherently safe fuel design perfected over 50 years of development

- Tested to temperatures of up to 3,000 ^{o}F
- Uses HALEU fuel which reduces diversion and proliferation risks



1) BANR = BWXT Advanced Nuclear Reactor.
2) HALEU = High Assay, Low Enriched Uranium.

BWXT Advanced Technologies – Commercial Microreactor Programs

DoE Advanced Reactor Demonstration Program (ARDP)

- ✓ Technology development & architecture
- ✓ Enhanced fuel form for longer core life and higher core power
- ✓ Advanced sensors for semi-autonomous controls
- ✓ Commercialization & supply chain development

WEA Project Phase 1 (completed)

- Microreactor design
- Supply Chain assessment
- Licensing roadmap

WEA Project Phase 2 (optioned in June)

- Lead unit conceptual design
- Supply Chain demo & QA evaluation
- Regulatory Engagement Plan

WEA Project Phase 3 (notional)

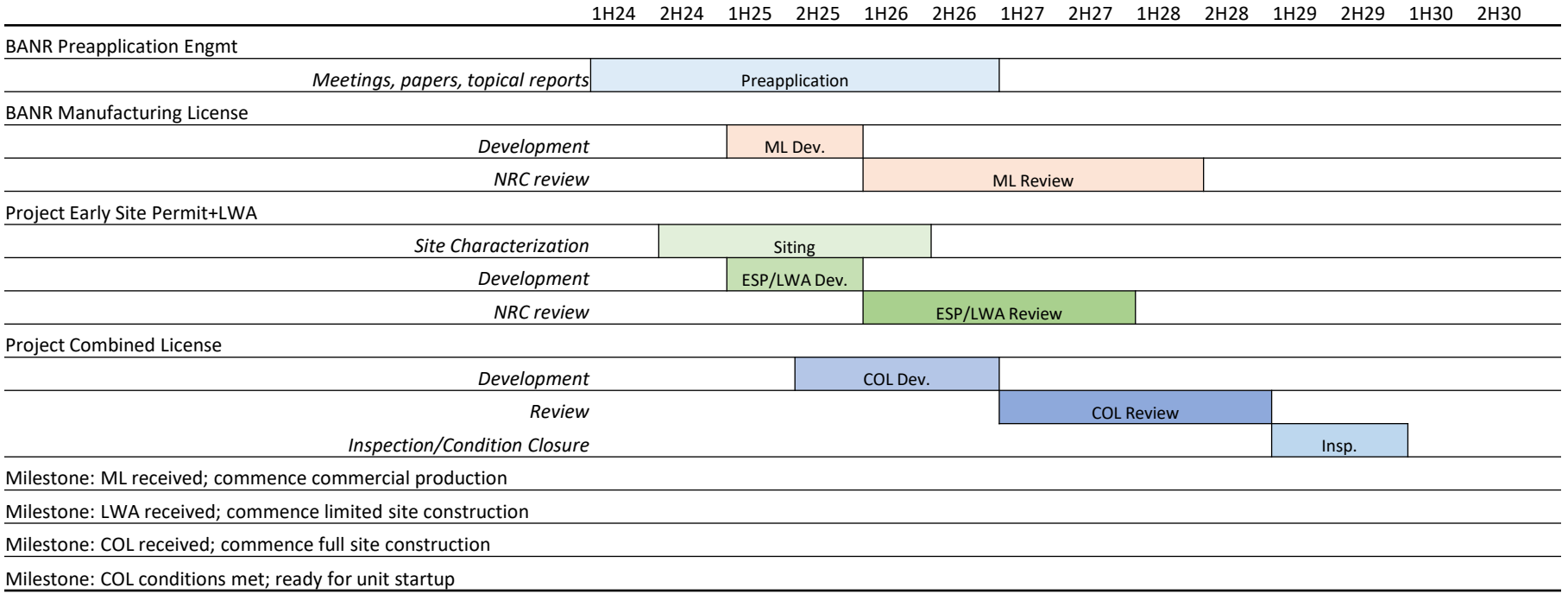
- Complete design
- Site preparation, licensing
- Build & demonstration

Meaningful Presence Required

17 people
44 trips

142 people-days
Sept 2023 – Sept 2024

Regulatory – Licensing Action Plan



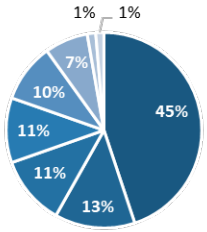
Commercial Viability

Cost Estimation Work Completed to Date

1 **Detailed, bottoms-up cost estimate for a BANR site**

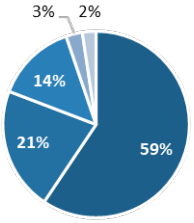
2 **Develop operating assumptions to confirm full project economic viability**

Total Initial Site Costs



45%	Reactor Power Plant
13%	Indirect Costs
11%	Owner's Costs
11%	Fuel
10%	Project Contingency
7%	EPC Fee
1%	Facilities
1%	Sitework

Total Project Lifetime Costs[1]



59%	Lifetime Core Recharges Costs
21%	Total Direct & Indirect Costs
14%	Total Lifetime Owner's Costs
3%	Post Operations (D&D)
2%	Amortized Development Costs

BWXT + BURNS McDONNELL

Collaborative effort between BWXT & B&M

Commentary

Project Lifetime Costs

- The lifetime costs calculated represent **all costs included to deliver energy to the end user over the entire project timeline**
  - Included: margin, operating expenses, maintenance, lifetime fuel, capital expenses related to delivery of energy (i.e., tie-in to existing infrastructure)

Levers to increase cost competitiveness

Utilize Financial Incentives

- Inflation Reduction Act Investment + Production Tax Credits

Design Optimization

- Design maturation with TRL/MRL maximization
- Refine structural requirements
- Targeted site layouts

1) Lifetime costs for a 60-year project