babcock & wilcox modular nuclear energy

mPower™
a progressive energy solution

A practical, scalable, modular ALWR

B&W Modular Nuclear Energy, LLC

B&W mPower™ Overview

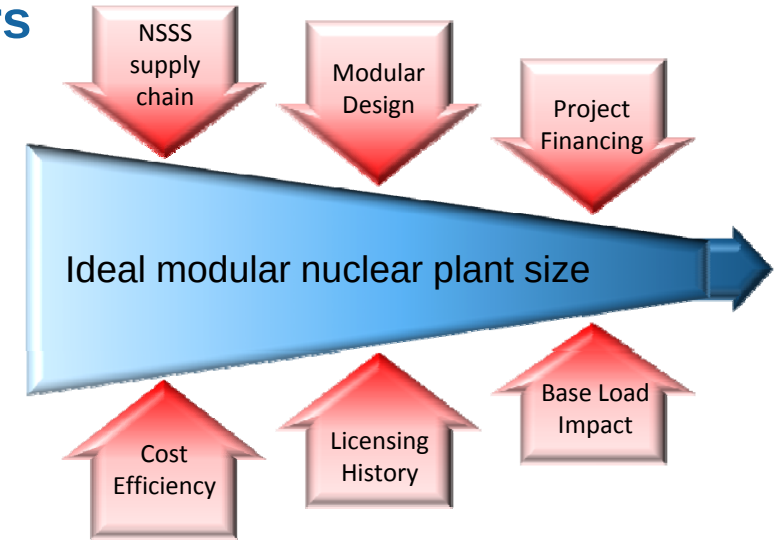
- Favorable regulatory, geopolitical and market realities
- Broad B&W capabilities, workforce and American infrastructure
- Strong nuclear utility interest, with commitments
- Practical design, aligned to existing nuclear infrastructure
- Robust licensing philosophy, facilitating NRC review

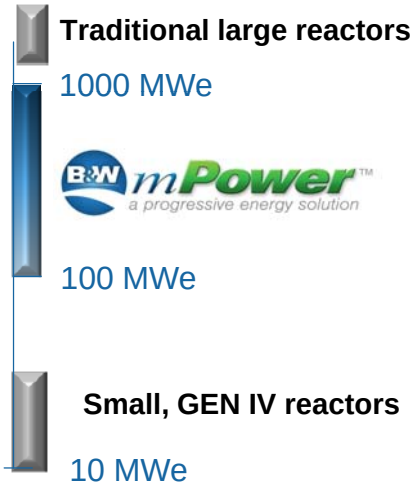
Complementary, near-term nuclear energy solution

A Shifting Nuclear Landscape

Geopolitical Motivators

- Climate Change legislation
- Energy independence
- Strained supply chain
- Field craft labor availability
- Transmission capacity
- Water and land rights
- Tight capital markets





One size does not fit all …

Emerging Industry Imperatives

- Don’t “bet the company” on one project
- Practical, proven technology
- Utilize existing nuclear infrastructure
- “Repower” carbon-intensive facilities
- Incremental power additions

Vertically Integrated Supply Chain

- Domestic forgings or rolled plate
- Component fabrication
  - Mt. Vernon, Indiana
  - Cambridge, Ontario, Canada
- Fuel fabrication
  - Lynchburg, Virginia
- Control rod drive fabrication
  - Euclid, Ohio
- Modular construction capabilities
  - Morgan City, Louisiana

A North American solution … manufactured in existing B&W facilities

Leading the Energy Transformation

Clean Power Technologies

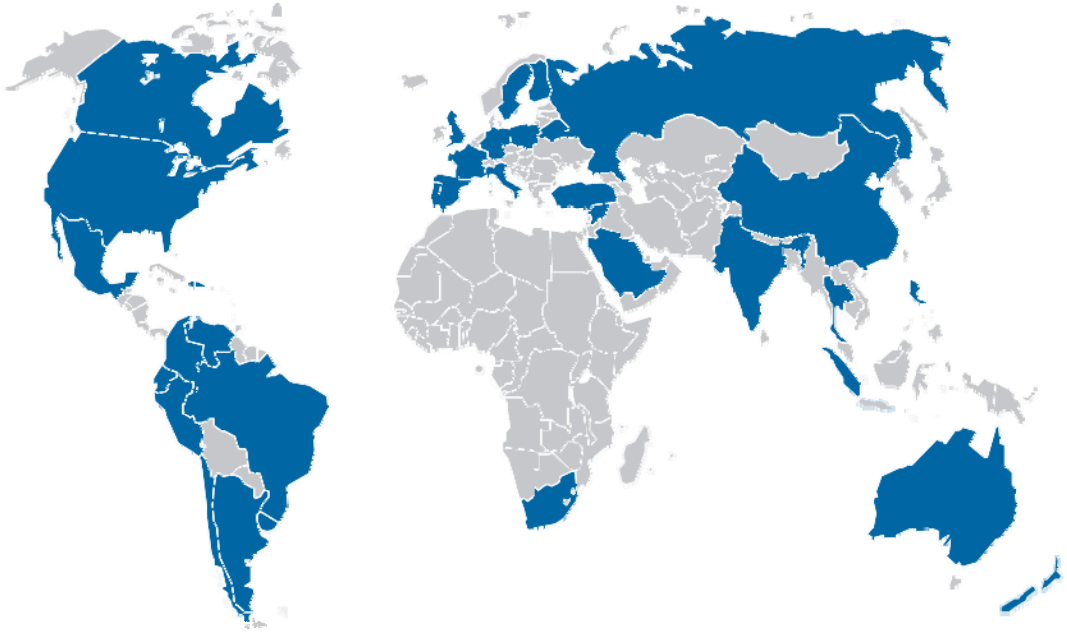
High-Consequence DOE Operations

Advanced Engineering and Manufacturing

A Global Business

B&W Nuclear Experience

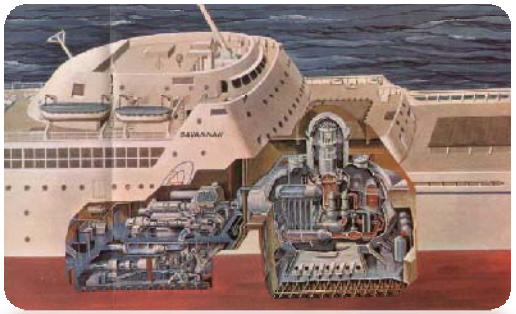
- 50+ years of continuous nuclear engineering and manufacturing
- 12,000 nuclear professionals
- Only U.S. NRC Category 1 license
- Only U.S. company with N-Stamp for NSSS vessel manufacturing
- Fabricated >1,100 NSSS components and pressure vessels
- Manufactured more than 260 steam generators worldwide
- U.S. nuclear manufacturing in Indiana, Ohio, Virginia



$4.7B sales. $6.7B* backlog. 23,300 employees. 32 countries.*

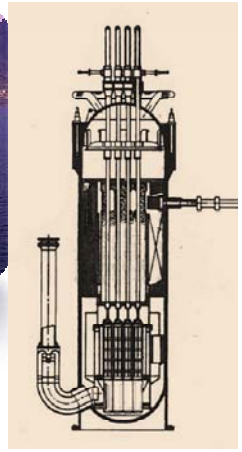
** Approximate equivalent 2008 revenues, including unconsolidated operations*

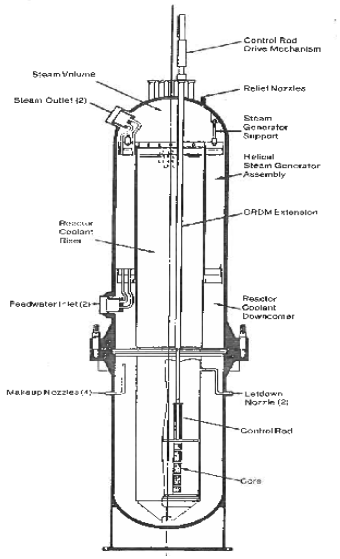
B&W Early Integral PWRs



Designed and fabricated NSSS
NS Savannah

Consolidated nuclear steam generator
NS Otto Hahn





SMPP design

- B&W has evolved the integrated Nuclear Steam Supply System PWR over 50 yrs.
  - **NS Savannah:** Designed in 1950s; small PWR with standard design
  - **NS Otto Hahn:** Designed in 1960s; small integrated steam generator with reactor
  - **SMPP:** Designed in 1980s; small modular plant developed for land-based military electric generation

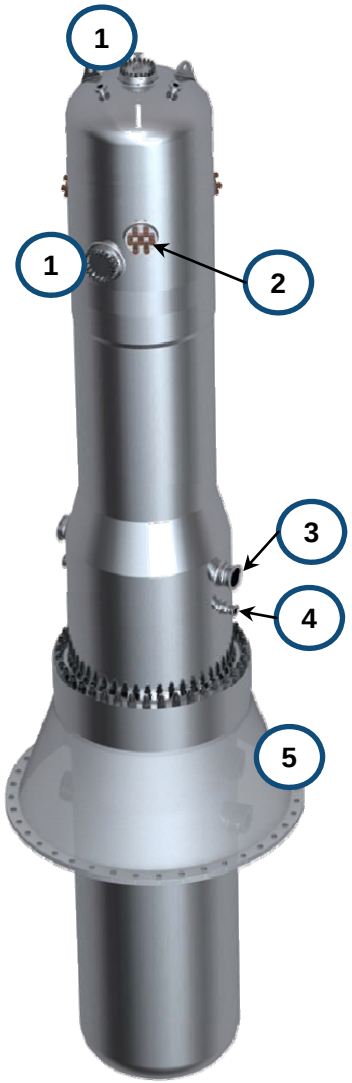
More than 40-year legacy of developing integrated NSSS

A Generation III++ Reactor

- Integral 125 MWe modular reactor
- Proven Advanced Light Water Reactor technology
- Simple, passively safe design
- Utilizes “industry standard” PWR fuel
- Five-year operating cycle between refueling
- Built in North America, in B&W factories

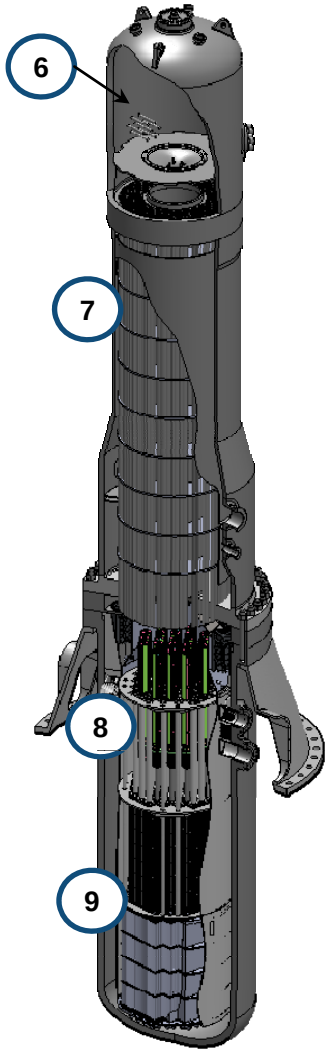
B&W mPower a progressive energy solution

B&W mPower Design Characteristics



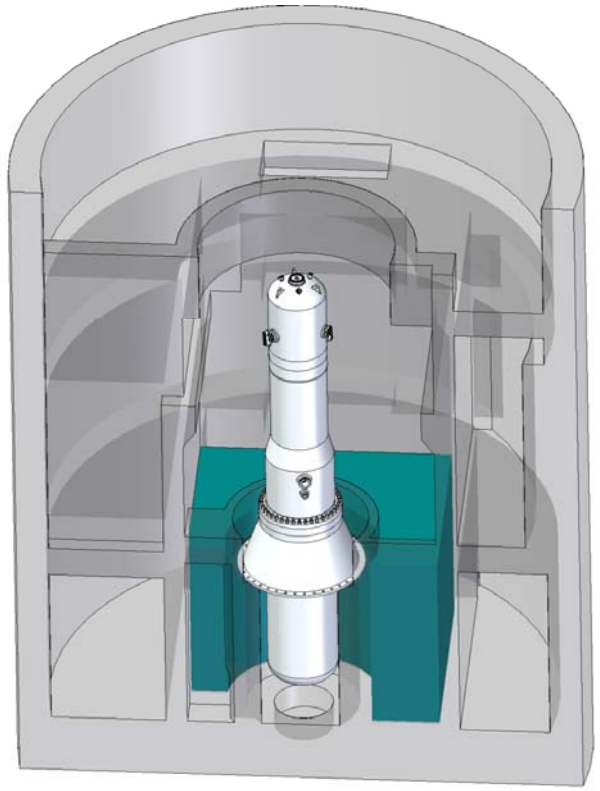
Design Characteristic	Value
Thermal Power	425 MW
Reactor Coolant	< 14 MPa (<2000 psia) ~ 600 K (620°F) core outlet
Steam Conditions	< 7 MPa (<1000 psia) superheated
Reactor Vessel	Diameter ~ 3.6 m (12 ft) Height ~ 22 m (70 ft)
Fuel Assemblies	69 - 17x17 fuel assemblies Height ~ ½ of standard Fuel Assembly
Average Fuel Burnup	~40 GWdays/Metric Ton
Fuel Cycle Length	4-5 yrs

1. *Inspection Ports*
2. *Pressurizer Heaters*
3. *Steam Outlet*
4. *Feedwater Inlet*
5. *Support Skirt*
6. *Pressurizer Baffle*
7. *Steam Generator*
8. *Upper Internals*
9. *Nuclear Core*



Nuclear Island Features

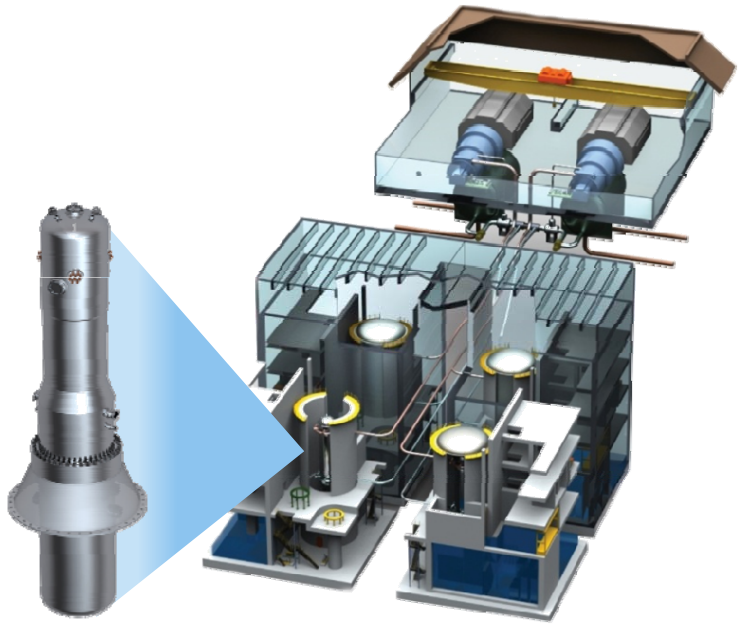
- Dry containment - no suppression pool
- No active core cooling systems
- Passive decay heat removal
- No emergency AC power – batteries only
- Reactor installed after construction
- Spent fuel storage for 60-year plant life



Simple integrated safety features

Scalable Nuclear Plant: Practical, Affordable

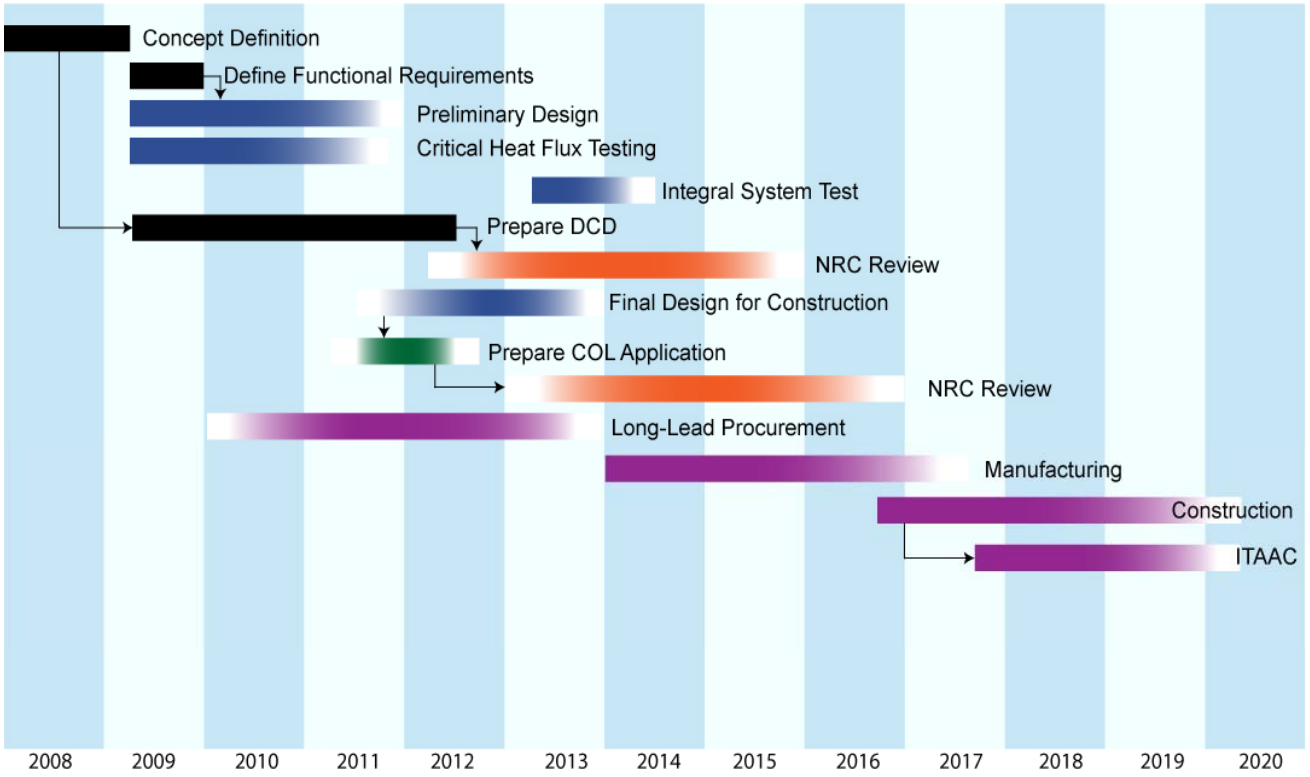
- Fully independent reactor modules
- 1-8 modules per plant, 125-1,000 MWe
- Underground containment building
- Low-impact, air-cooled condenser
- Scalable to grid, site, load-growth
- Three-year construction schedule



500 MWe Configuration

Cost certainty … Schedule certainty … Capital efficient.

B&W mPower Lead Plant Schedule



Major Constraints

- NRC review window 2011-2014
  - Initial ALWR reviews finishing
  - B&W/partner investments ongoing
- Initial ALWRs online 2017-2020
  - Considered ALWR by industry
  - Customers seek scalable options

Key Dependent Milestones

- DCA submittal 1Q 2012
  - Nuclear Island design review-ready
  - Safety analyses substantially complete
- Lead COLA submittal 2013
  - Maintain NRC engagement
  - Lead plant operational 2018-20

Critical external constraints ... NRC review window and initial New Build viability

B&W mPower Value Proposition

- Flexible … sized to local transmission, site, and power requirements
- Affordable … cost competitive, cost certainty with incremental financing
- Practical … reduced site work and existing B&W U.S. manufacturing
- Proven … established licensing with Generation III++ technology