



delivering clean
energy to the world

*affordable, efficient, scalable
zero-emission operations*

Within the shifting landscape of global energy markets, *B&W mPower™* nuclear plants will deliver technology designed for today's regulatory, policy and financial realities.

Drawing on Experience B&W has been designing and manufacturing reactors continuously since the 1950s. Today, B&W's unique ASME N-Stamp-certified nuclear manufacturing facilities in the U.S. and Canada are poised to provide the next generation of nuclear power plants to address the challenge of reducing emissions.

2 **zero-emission**

Responding to the Challenge

At a time when energy demands are evolving and environmental concerns growing, there is a global imperative to provide affordable energy sources that are efficient and clean. Babcock & Wilcox Modular Nuclear Energy, LLC is responding to this challenge by designing a progressive energy solution that meets the needs of today's changing power generation industry. The *B&W mPower* reactor design is a scalable, modular, Advanced Light Water Reactor (ALWR) system in which the nuclear core and steam generators are contained within a single vessel. B&W believes this optimized ALWR Generation III++ nuclear technology can be certified, manufactured and operated within today's existing regulatory, domestic industrial supply chain and utility operational infrastructure. The *B&W mPower* electric generation plant has the capacity to match customer demand in 125 MWe increments for a four-and-a-half-year operating cycle without refueling, using standard pressurized water reactor (PWR) fuel.



*Initial B&W mPower
integral modular
reactor design*

Generation III++ technology

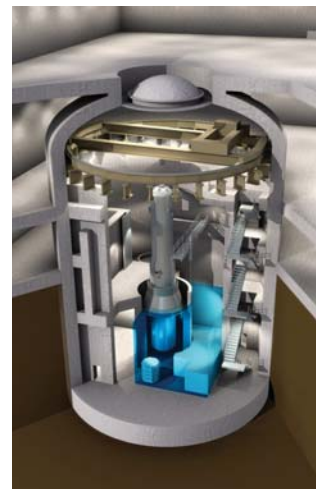
- Integral nuclear system design
- Passive safety systems
- Four-and-a-half-year operating cycle between refueling
- Five-percent enriched fuel
- Secure underground containment
- Spent fuel pool capacity for the life

Proven performance

The modular and scalable Generation III++ design allows B&W to match the generation needs of our customers with the proven performance of existing Light Water Reactor (LWR) technology.

With fewer components and systems, overall reliability is enhanced and affordability improved.

The scalable design offers flexibility so that multiple *B&W mPower* reactor modules can be aggregated to support local customer requirements and infrastructure constraints.



*Single module
inside its own independent,
underground containment*

operations

Additional B&W mPower nuclear plant features

Flexible and scalable to local needs

- Integrated reactor modules
- Multi-unit (1 to 10+) plant
- North American shop-manufactured
- Rail-shippable nuclear steam supply system (NSSS)

Reduced licensing, construction risk

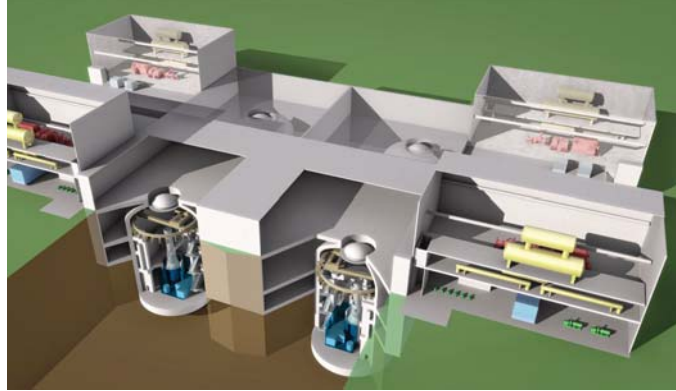
- Accepted ALWR concepts
- Passive safety system
- No on-site NSSS construction
- Three-year construction cycle

Integrated and simplified NSSS

- Internal steam generator
- No need for safety-grade backup power
- No external pressurizer
- Conventional core and standard fuel
- No large pipe break Loss of Coolant Accidents (LOCA)

Simplified operations and maintenance

- Four-and-a-half-year core design
- Sequential partial-plant outages
- Standardized balance of plant



500 MWe nuclear power plant

Reliable solutions

Construction cost and schedule: B&W offers a skilled workforce through an integrated supply chain in its existing facilities that will design and fabricate the NSSS components, reducing direct costs and streamlining construction.

Tightening capital markets: The B&W mPower reactor is expected to lower the overall capital cost of construction and optimize plant size to customers' local power generation requirements. Also, the ability to bring increments of power online, while additional modules are under construction, should provide early returns on investment for the customer.

Changing geopolitical climate: B&W works within environmental regulations to supply innovative electricity generating capabilities. Each B&W mPower module will be zero-emission operations, contributing to the reduction of an estimated 57 million metric tons of CO₂ during the lifetime of each reactor.

Protecting the environment: The reactor's air-cooled condenser, underground containment and small site footprint all help minimize environmental impact.

delivering
proven results

www.babcock.com

Babcock & Wilcox Modular Nuclear Energy, LLC

800 Main Street
Lynchburg, Virginia 24504 USA
Phone: 434.522.6800

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B&W mPower reactor design is not complete. Statements in this brochure are based on the final, certified reactor design.

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