B&W Capabilities Overview

Japan – U.S. Decommissioning & Remediation
Fukushima Recovery Forum
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Key Company Metrics

- 140-year-old company
- 60+ years serving DoD
- B&W operates a network of 13 major manufacturing facilities globally
- 12,000 employees worldwide, plus 10,000 joint venture employees
- Approximately 11,000 employees are in nuclear operations and missions
- Skill sets include scientists, engineers, technicians and administrative
- Majority of Nuclear Operations and Technical Services B&W employees (~4,300) hold security clearances from NRC, DOE and DOD
- NRC Licenses
  - SNM-42 – NOG, Lynchburg, VA
  - SNM-124 – NFS, Erwin, TN
- 5 of our manufacturing facilities are ASME N-Stamp certified

Supplied >300k MW of installed capacity in >800 utilities in over 90 countries
Provided >300 nuclear steam generators to customers worldwide
Segments and End Markets

**Nuclear Operations**
- Virginia-Class submarine program
- Ford-Class carrier program
- Refueling
- Fuel processing and fabrication

**Technical Services**
- Nuclear material handling, storage and security
- Nuclear laboratories
- Nuclear weapons complex
- Decontamination and decommissioning
- Specialty / classified manufacturing

**Nuclear Energy**
- Field services
- Plant modifications
- Component manufacturing and installation
- Fuel design, enrichment and fabrication
- B&W mPower™

**Power Generation**
- Coal-fired power generation
- Service, operation and maintenance
- Construction and EPC
- Environmental systems (FGD, SCR, mercury, carbon)
- Renewables (Biomass, solar, waste-to-energy)

*Leading technology innovator in power generation and a specialty manufacturer of nuclear components with legacy spanning 140 years*
Manufacturing Capabilities

- A complete machining center
- Beveling equipment
- Brakes and shears
- CNC lathes and drills
- Complete line of NDE tools and equipment
  - X-ray
  - Dye penetrant
  - Ultrasonic
- Heat treatment furnaces
- Manual and automated welding capabilities
- Oxy-Fuel and plasma arc cutting equipment
- Plate rolls
- State of the art paint booth facility
- Tube beveling, bending and swaging
- 400-ton (plus) overhead crane capacity
B&W Intech: Machine Vision Plus Engineered Tools and Services

Core Competencies:
- Steam Generator Services
- Inspection Services
- Manipulator Systems
- Robotic Tooling
- Audio/Video Systems & Mapping

Custom Tooling Design & CAD/CAM Machining

Custom Manipulator Systems

Mock-ups and Fixturing

Steam Generator Robotic Repair and Maintenance Tooling

Robotic ROV Mapping Inside Torus

3-D Mapping
Nuclear Equipment Capabilities

- Steam Generators (PWR and PHWR)
- Pressurizers, Heat Exchangers and Tanks
- Spent Fuel Dry Storage Casks
- Misc. Nuclear Components (feeders, reactor vessel closure heads, service structures, etc.)
Nuclear Services Capabilities

- Steam Generator Services
- Heat Exchanger Services
- Reactor Services
- Specialized Inspection and Repair

- Plant Modifications
- Laboratory Services
- Engineering Services
- Valve Services
Services for U.S. Department of Energy

National Nuclear Security Agency
- Y-12 National Security Complex M&O
- Pantex Plant M&O
- Los Alamos National Laboratory M&O
- Lawrence Livermore National Laboratory M&O
- Nevada National Security Site M&O
- Naval Reactors Enterprise D&D

Environmental Management
- Uranium Conversion Operations
- Advanced Mixed Waste Treatment Project
- Portsmouth Gaseous Diffusion Plant D&D
- West Valley Demonstration Project Decommissioning & Facility Disposition
- Waste Isolation Pilot Plant M&O
- Savannah River Liquid Waste Disposition Program
- Paducah Environmental Remediation Project

Nuclear Energy (NE)
- Idaho National Laboratory M&O

Office of Science
- Oak Ridge National Laboratory
B&W mPower™ Attributes

Innovative Design
- Single integrated nuclear module
- Underground reactor and used fuel
- Air-cooled main condenser
- Inherently safe, gravity powered

Breakthrough Performance
- 160 MWe increments with no size-premium
- 100 times safer than latest standard
- 4-year operating cycle (2x standard)
- 7+ days station blackout capability

“Disruptive Technology” … stepping beyond traditional limits
Medical Isotope Production System (MIPS)

- New production capacity for molybdenum-99, the precursor of the medically important radioisotope technetium-99m
- Four 220-kWt aqueous homogeneous reactors (AHR) and a single facility for extracting the Mo-99 and incorporating it into nuclear medicine products
- AHRs would use low-enriched uranium
Recommendations for International Collaboration

Implement proven Mt. Fuji Team Model

- Integrate international capabilities through Japanese company.
- Leverage local supply chain
- Bring lessons learned from previous restoration projects.
- Apply project management rigor

Assign funding and oversight

Implement performance based contracts

Establish sense of urgency