

Condition Assessment and Laboratory Services

Integrating a complete package of testing techniques with proven boiler experience

A well-planned condition assessment program is essential for the continued availability and reliability of your boiler and associated equipment, as well as the safety of plant personnel. When coupled with an overall plant maintenance strategy, timely condition assessment can provide the basis for long-range asset management and financial planning.

Comprehensive condition assessment services from Babcock & Wilcox (B&W) combine our breadth of available testing techniques with more than 150 years of boiler design and operating experience.



Individual tests as well as complete condition assessment programs are available for most boiler types, including large steam generating systems, two-drum industrial and recovery boilers, and package boilers.

Benefits of B&W's Condition Assessment and Laboratory Services

Remaining useful life calculations based on experience and research –
results are accurate and dependable

Knowledge of boiler design to identify potential problem areas to inspect –
reduces time and cost of inspections and provides more meaningful results

Access to OEM material specifications and design standards –
reduces time and cost of inspections

Available onsite project management –
frees plant personnel during busy outage seasons

Full-scope capabilities can include scaffolding, surface preparation, and repair or replacement – single-source supplier simplifies the project

Proven boiler design and operating experience –
provides confidence in long-term planning recommendations

continued ▶

Unique or Patented B&W Service	High-Temperature Headers	High-Temperature Piping	Superheater & Reheater Tubes	Low-Temperature Headers	Furnace Wall Tubes	Convection Pass Tubes	Economizer Tubes	Downcomers	Valves
Hone & Glow® header ligament crack detection	✓								
FST-GAGE® tube thickness evaluation			✓		✓	✓	✓		
NOTIS® superheater tube life evaluation			✓						
Header/Piping remaining life analysis	✓	✓							
Support Load Analysis	✓	✓							
Stress/Strain Measurement	✓	✓							
Valve Leak Detection									✓

Standard B&W Testing and Sampling	High-Temperature Headers	High-Temperature Piping	Superheater & Reheater Tubes	Attemperators	Low-Temperature Headers	Furnace Wall Tubes	Convection Pass Tubes	Economizer Tubes	Feedwater Piping	Downcomers	Steam Drums	Deaerators
Sample Analysis			✓			✓	✓	✓				
Dye Penetrant Surface Tests (PT)	✓	✓		✓	✓	✓				✓	✓	✓
Magnetic Particle Surface Tests (MT)	✓	✓			✓					✓	✓	✓
Material Verification	✓	✓	✓									
Replication Analysis Surface Metallography	✓	✓	✓								✓	
Remote Visual Inspection of Inside Surfaces	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Ultrasonic Thickness Testing (UTT)	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Flow Accelerated Corrosion Testing (FAC)									✓			
Time of Flight Diffraction (TOFD)	✓	✓										
Phased Array Ultrasonic Testing (PAUT)	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓

Turn to B&W for comprehensive condition assessment services

Most condition assessment inspections involve a combination of techniques, depending on the specific unit history and operating conditions. B&W offers a wide range of industry-standard nondestructive evaluation (NDE) techniques in conjunction with our proprietary techniques to offer a customized inspection program, including:

- FST-Gage® for continuous UT thickness mapping
- NOTIS® superheater and reheater tube testing
- Phased array ultrasonic testing (PAUT)
- Time of flight diffraction (TOFD)
- Ultrasonic thickness (UT) measurements
- Wet fluorescent magnetic particle testing (WFMT)
- Dye penetrant testing (PT)
- Hone & Glow® for bore hole ligament cracking
- Video borescope inspection
- Visual inspections
- Metallurgical surface replications
- Laboratory analyses



From package boilers to large power generating units

B&W's complete range of condition assessment services includes comprehensive testing throughout the boiler and associated components, including:

- High-temperature headers
- Low-temperature headers
- Boiler and associated piping
- Superheater tubes
- Waterwall tubes
- Steam drums

In addition to boiler inspections, specialized testing and evaluations are available on environmental equipment, tubular air heaters and spray attemperators, to name a few. B&W service specialists can assist with water chemistry and boiler chemical cleaning, structural evaluations, air heater inspection and maintenance, and the operation and maintenance of coal pulverizers. Our worldwide network of field service engineers provides the experienced technical support you need – whether your equipment was designed by B&W or another manufacturer.



Laboratory services

Utilizing modern equipment, B&W's in-house laboratory boiler component testing services are backed by more than 150 years of experience and know-how in providing steam generation equipment to power utilities and industrial facilities worldwide.

As an integral part of B&W's complete boiler aftermarket service offerings, our laboratory services provide much more than just numbers. Our skilled laboratory analysts and expert boiler engineers can determine the reasons for a tube failure, help predict future problems that may arise, and provide guidance and recommendations for long-range asset planning, all from one source.

With a wide range of laboratory boiler testing services available, we can provide a complete diagnosis and treatment plan for your critical steam generating assets.



Laboratory Services
Failure analysis
Chemical cleaning qualification
Remaining life assessment
Heat treatment evaluations
Dimensional analysis
Hardness
Microhardness
Metallographic evaluation
Microscopic evaluation
Surface roughness measurements
Deposit weight density (DWD)
ASTM testing
A-262 Susceptibility of Stainless Steels to IGA
G-28 Susceptibility of Ni-Cr Alloys to IGA
G-48 Pitting and Crevice Corrosion Behavior
G-78 Crevice Corrosion Behavior in Cl Solutions
G-108 Sensitization of 304SS using EPR
Electrochemical evaluations
Chemical analysis (metals)
SEM-EDS evaluation
Tensile testing
Deposit chemical analysis
Fracture toughness evaluation



The Babcock & Wilcox Company

1200 E Market Street, Suite 650
Akron, Ohio, U.S.A. 44305
Phone: +1 330.753.4511

www.babcock.com    

The information contained herein is provided for general information purposes only and is not intended nor to be construed as a warranty, an offer, or any representation of contractual or other legal responsibility.

FST-GAGE, *NOTIS* and *Hone & Glow* are trademarks of The Babcock & Wilcox Company.



ENERGY | ENVIRONMENTAL

Established in 1867, Babcock & Wilcox is a global leader in advanced energy and environmental technologies and services for the power, industrial and renewable markets.

For more information or to contact us, visit our website at www.babcock.com.