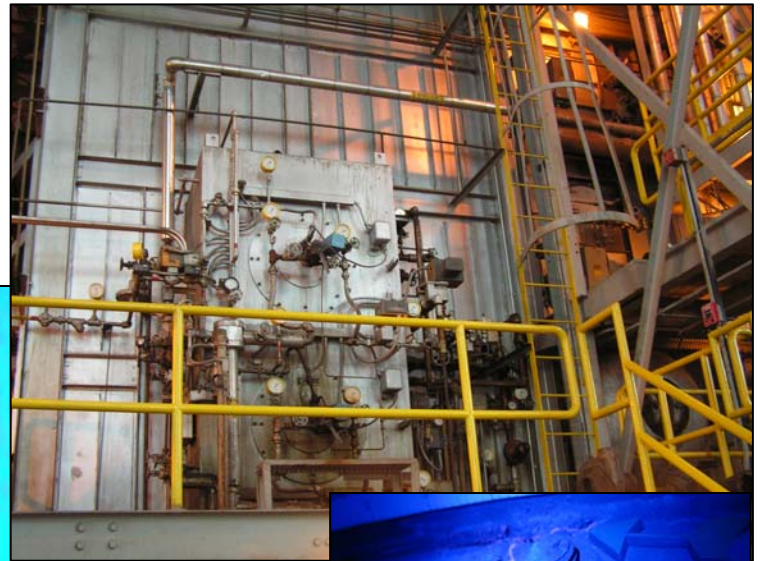
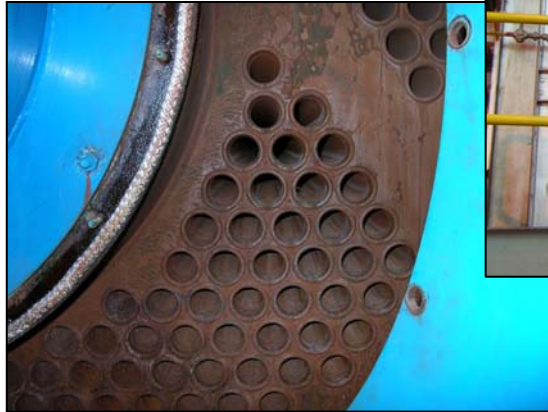


FACILITY FITNESS

BOILER and EQUIPMENT INSPECTION SERVICE



WHY Mechanical & Materials Engineering...

- **Objective and Independent** – We provide technical, operational, and management assessments to our clients based on our years of experience with equipment like yours. We do not sell equipment or chemicals.
- **Flexible** – We can be as "big" or as "small" as you need. Services can range from a few hours of inspection service to 100% compliance verification for all your quality assurance activities.
- **Client Focused** – We work for you. We are not selling chemicals or equipment. Our focus is strictly on making your equipment more efficient and reliable.
- **Responsive** – We respond quickly to urgent situations that require accelerated project schedules and high-levels of responsiveness.



Mechanical & Materials Engineering has been assisting our clients to operate their boilers and pressure vessels more reliably and efficiently for more than 25 years. We have now added Boiler and Pressure Vessel, Electrical and Quality Assurance inspection and assessment to the services we provide.

The National Board of Boilers and Pressure Vessels, US Federal Government, and ANSI have all established standards for the frequency of inspection of boilers and other pressure vessels. A list of the recommended inspection frequency for various types of equipment can be found on the back side of this brochure.

There are many companies that can "inspect" a boiler; however, Mechanical & Materials Engineering's highly qualified staff of experienced inspectors and engineers can do more. Our focus is to increase the reliability and efficiency of all your mechanical and electrical equipment. We provide an independent and

objective analyses of the equipment and your operating and maintenance practices to identify the strengths, weaknesses, opportunities and threats to reliable efficient operation. Specific services include:

Boiler and PV Inspection – Verify compliance to industry standards for operational readiness and pressure retaining capability.

Equipment Condition Evaluation

- Assess the condition of mechanical and electrical equipment.
- **Boiler and Pressure Vessel Condition and Useful Life Study** - A detailed, comprehensive evaluation of equipment to predict its remaining useful life, and to recommend ways to extend that life.

Electrical Inspection – Verify compliance with industry standards for operational readiness, maintenance, and testing for Electrical Distribution Systems.

Engineering Design Review - Provide review of equipment and systems design to verify they comply with established standards and regulations.

Third-Party Evaluation of Vendor-Provided Services - Provide objective and independent review of services including maintenance, operations, and boiler and feedwater chemical treatment.

Equipment Failure Investigation - Provide a root cause analysis of machinery equipment

failures including full metallurgical testing coupled with operational analysis.

Quality Management Evaluation - Provide a full range of QA services including development, implementation, and assessment.

Efficiency Improvement - Optimize water and steam utilization to help you operate with lower fuel and energy costs.

General Inspection Guide for Pressure Retaining Items

Item	Frequency	Inspection Recommended
Boilers & Pressure Vessels		
Power Boilers & High Temperature Hot Water Boilers	6 Months	Alternating Internal/External and Operational. Additionally, substitute the Internal/External for an Internal/External with Hydrostatic test every third year.
Low Pressure Steam Boilers & Low Temperature Hot Water Boilers	Annually	Alternating Internal/External and Operational. Additionally, substitute the Internal/External for an Internal/External with Hydrostatic test every third Inspection.
Non-fired Pressure Vessels	2 Years	Alternating Internal/External and Operational. Additionally, substitute the Internal/External for an Internal/External with Hydrostatic test every third Inspection.
Over Pressure Devices		
Power Boiler	6 Months	Manual check every 6 months, Annual pressure verification test
High Temperature Hot-Water Boilers	Annually	Pressure Verification Test
Low-Pressure Steam Heating Boilers	Quarterly	Manual check, Annual pressure verification test.
Water Heater	2 Months	Manual Check
Over Pressure Devices for Pressure Vessels and Piping		
Steam	Annual	Pressure Verification Test
Air & Clean Dry Gasses	3 Years	Pressure Verification Test
Propane Refrigerant	5 Years	Pressure Verification Test
All Others	Per Inspection History	Pressure Verification Test

Note: Information copied from the National Board of Boilers and Pressure Vessels Inspection Code, United States Government Federal Standards, and ANSI Standards.



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