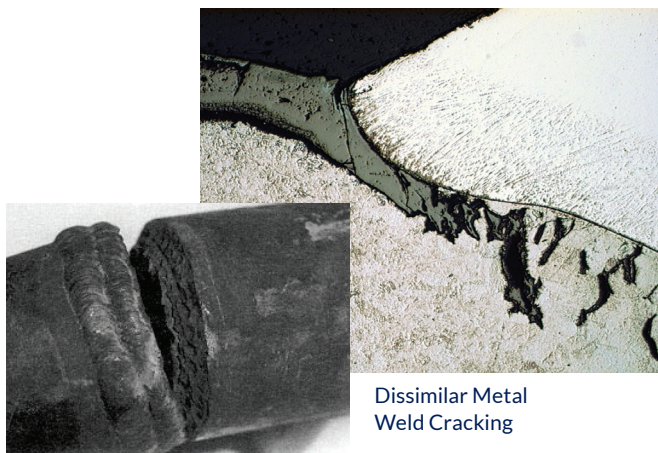


METALLURGICAL LABORATORY SERVICES



OVERVIEW

Riley Power Inc., a Babcock Power Inc.® company, designs, manufactures and provides after-market services for steam generators and fuel firing equipment for fossil fired and waste fuel fired plants. For more than six decades, Riley Power Inc. has provided expert boiler metallurgical analyses and comprehensive condition assessments in conjunction with Riley Power's Boiler Evaluation, Engineering and Field Services departments. Our metallurgical laboratory is capable of conducting extensive analyses services, including destructive and nondestructive condition assessments, failure analysis, finite element analysis, quality control and any other materials related concerns.



Dissimilar Metal
Weld Cracking

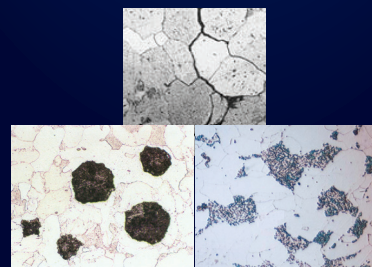
Boiler tube failures continue to be the leading cause of forced outages in the power industry. Diagnosis of the root cause is essential to mitigating failures and reducing time spent off line. Additionally, Riley Power recognizes that it is increasingly important to accomplish this, while operating with mounting regulation and budgetary constraints. A detailed metallurgical assessment can provide justification for future outage planning, budget management, and capital prioritization.

Rely on Riley Power Inc.'s metallurgical analyses to decrease operating, repair and maintenance costs and improve your plant's reliability. Ask for Boiler Evaluation or Technical Services.

CAPABILITIES

- Microstructural assessment
- Hardness testing
- Mechanical properties
- Scanning electron microscopy
- Material verification and selection
- Quality control
- Chemical analysis (internal and external deposits)
- Weld assessment
- Deposit loading analysis (water carrying tubes)
- Failure analysis, including:
 - Root cause determination
 - Corrosion (internal and external, including hydrogen damage, phosphate hideout, pitting, etc.)
 - Erosion and wall thinning
 - Over temperature conditions
 - Cracking (including fatigue, stress corrosion, and dissimilar metal welds)
 - Creep damage
- Remaining creep life analysis
- Remaining life analysis

Material Degradation



ANALYSIS

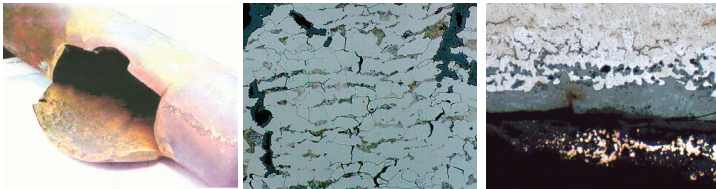
COAL FINENESS AND POWER CONSUMPTION COMPARISON

Often, an initial diagnosis can be provided within hours of receipt of the sample. A final report follows, including comprehensive analysis, color photographs, test results and recommendations for continued service, repair or replacement. Riley Power is dedicated to providing a complete metallurgical assessment, from initial diagnosis in the field to analysis in our laboratory facilities.

Non-destructive metallurgical analysis, in the form of microstructural replication (“replicas”), can also be performed. This technique occurs at the plant, on components where destructive testing is not practical. An on-site Riley Power engineer “replicates” the exact surface microstructure of the material. The replica is then sent back to Riley Power’s metallurgical laboratory for final analysis. This is often the best method for assessment of headers, high energy piping, and other large components.

BENEFITS

- A full metallurgical assessment provides confidence in the current and future condition of critical boiler components.
- Complete information about a failure mechanism allows for comprehensive preventative measures, repairs, and replacements before failures occur.
- The ability to foresee problems allows better planning of costs, manpower, outages and other resources.
- Component analyses can help identify other areas at risk for various damage mechanisms and degradation.



Hydrogen Damage



Fireside Corrosion



Replication Metallography of Header

SAFETY³ PEOPLE. POWER. PROJECTS.
We're giving safety the third degree.

Babcock Power Inc. and its subsidiaries place the safety, health and security of our people at the core of our company values. Our team is our most valuable resource, generating solutions everyday to deliver safe, clean, reliable energy globally. With a keen focus on safety, Babcock Power Inc. conducts business in a manner that protects our people, our customers and the environment. From innovation to generation, we are proud of our award-winning safety record and are committed to operating with integrity and excellence.

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