



Boiler Life Assessment Services

In plants, the boiler has typically been the most trouble prone piece of equipment, being the most likely to be the origin of a problem that leads to a forced outage. Because of this, there are well defined techniques to assess the condition and manage the lifecycle of boiler equipment for optimum reliability and operate efficiently.

AMCO Integrity has established expertise in the life assessment of components from boilers operating in the creep and fatigue conditions. The viability of future operation can be called in to question when a boiler begins experiencing failures, reducing production, increasing forced shutdowns and low efficiency. Today, plants are being operated to meet new financial expectations, and that combined with limited financial resources, reduced maintenance budgets, staff reductions, and fewer, shorter outages, makes managing these plants a difficult challenge. The pressures of power generation efficiency have also led to higher operating temperatures and newer materials, some of which are leading to new types of problems and failures in power plants.

The decision to run, re-rate, replace or retire is one that can only be answered by in-depth, cross-discipline analysis. In particular, the gap between engineering and economic questions can be difficult to bridge.

AMCO Integrity can provide a full Boiler Life Assessment service which can include the following –

- On-site inspection using advanced NDE.
- Metallographic evaluation.
- Review of design drawings.
- Finite Element modeling and stress analysis.
- Remaining Life Assessment calculations.
- Development of inspection procedures.
- Life Extension recommendations.
- Weld repair (including advanced techniques for cold weld repair).
- Component replacements where appropriate.



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AMCO Integrity is more than ready to help clients meet the new challenges that face both older and newer plants. We can assess the remaining life of boiler components under operating conditions, offering real increases in safe operating life or increase in inspection intervals where appropriate. Advanced warning of creep, creep/corrosion and creep fatigue failures can avoid expensive unplanned outages while avoiding undue maintenance or premature replication surveys. Improved repair welds, including cold weld repairs, can reduce the delay in returning a plant to service and may be suitable for long term service, thus avoiding replacement at the next scheduled outage.

In many boilers, the design life of the unit is determined by the creep properties of the tubing. In almost all cases the initial tube thickness will be greater than the theoretical minimum used in the original calculations, resulting in lower operating stresses than those used to calculate the design life. The actual life of the tubing depends on the real properties of the tubing, the rate of tube thinning (due to corrosion and/or erosion) and the operating conditions throughout the boiler life.

We have provided support and consulting services to the plant industry for more than 15 years, and has transformed that formidable experience and expertise into an integrated, multidisciplinary approach that combines engineering analysis, advanced nondestructive examination, materials evaluations, design review, repair technologies, and data management to attain the best possible solutions for plant owners and operators.