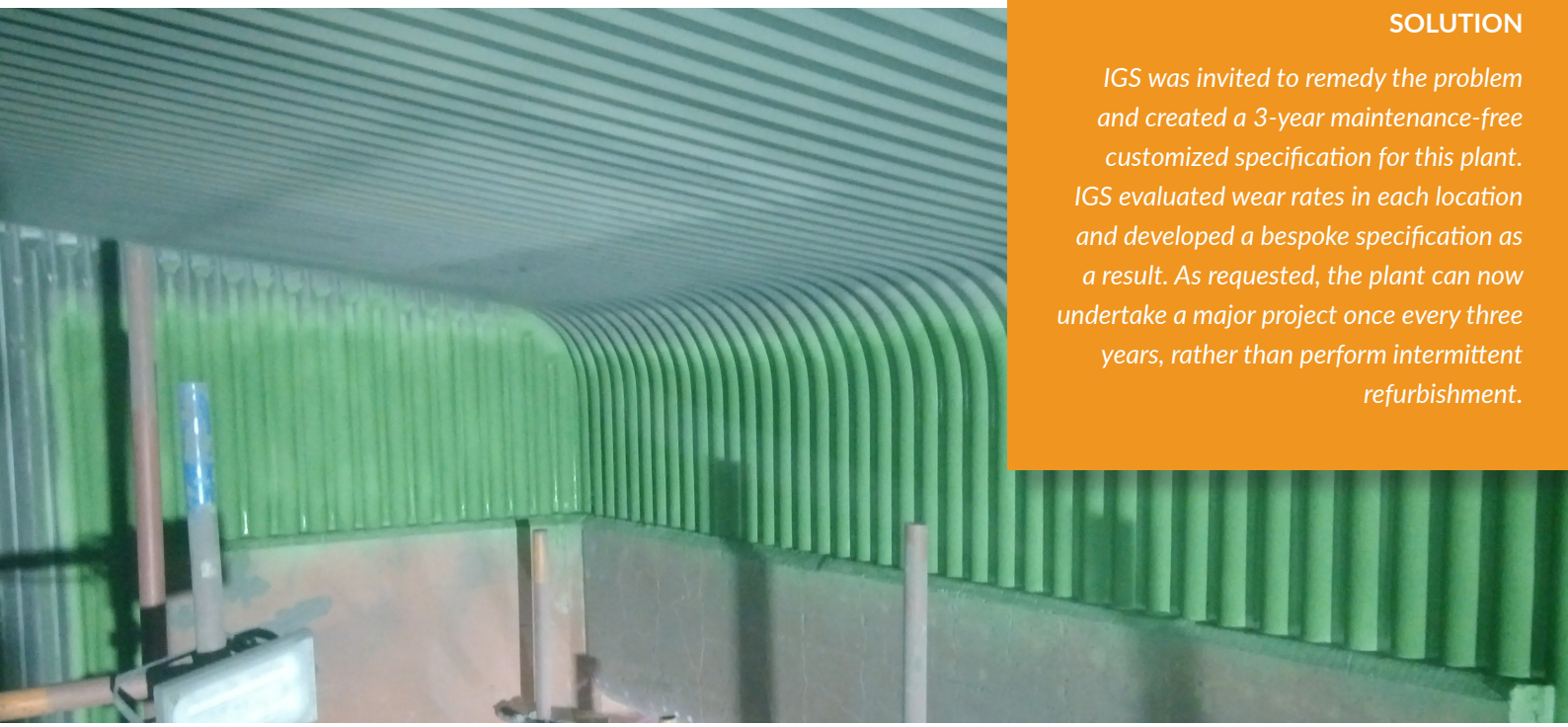
3-YEAR MAINTENANCE-FREE SPECIFICATION | CUSTOMIZED BOILER CLADDING

PROBLEM

A significant erosion problem was identified in a relatively new boiler that was only in operation for one year.

SOLUTION

IGS was invited to remedy the problem and created a 3-year maintenance-free customized specification for this plant. IGS evaluated wear rates in each location and developed a bespoke specification as a result. As requested, the plant can now undertake a major project once every three years, rather than perform intermittent refurbishment.



Boiler Units and Wastage Mechanisms

This Fertilizer Plant in Pakistan is operating a Cogeneration Plant to supply steam to their parent business. Boiler reliability is imperative to them.

Two CFB boilers went into operation. A year after being in service, a big erosion problem was discovered, necessitating a long-term solution.

Tube Replacement

The client had completed some initial emergency tube replacement. Tube replacement is problematic in CFB boilers, both short and long-term.

Most problematic is the short-term impact on the outage schedule, and the long-term is the localized erosion at the weld-joint where panels are joined.

This joint will experience severe localized erosion for the life of the boiler. Tube replacement is a costly exercise. It can be 3-5 times more expensive than preventative maintenance. Moreover, the erosion is not stopped, and these costs are recurring annually.

IGS HVTS Application

IGS was invited to provide engineering, consultancy and application services due to their proven global experience with boiler maintenance.

IGS mobilized a team to site for the 2019 application and the 2020 inspection, engineering work, and 2nd cladding application. Ed Griffith, IGS CFB Boiler SME, commented: "We picked the worst affected area to make sure the sample is representative and showed them how to perform grinding and mechanical repair, prior to application, correctly. We then inspected this sample after one year in service."

view inside the CFB boiler - erosion damage on the membrane

HVTS after One Year in Service

This 50m² HVTS alloy cladding sample application has performed as expected and prevented any further erosion damage in that area, while the unprotected adjacent regions continued to degrade.

IGS HVTS technician preparing for application

Protection Verified

IGS inspected the HVTS alloy cladding in units 1 and 2 using exhaustive Magnetic Lift-Off (i.e., MLO), Visual Survey, and MLO SEE report. The condition of the existing cladding in both units was found to be in excellent overall condition.

IGS HVTS inspection - no remedial action required

Customized Specification

The plant asked IGS to develop a customized HVTS specification, designed to remain maintenance-free for three years. 450m² of HVTS alloy cladding was applied as part of their long-term reliability strategy. The scope was defined based on visual inspection, extensive UT data analysis, and the cladding thickness monitoring to develop a cladding thickness recommendation per erosion zone.

IGS HVTS thickness readings being taken

Bespoke HVTS Solution

Following IGS' involvement, these CFB boilers have remained reliable, and IGS continues to work closely with the client to maintain pro-active management of boiler reliability. IGS works with plants to develop the right maintenance solution for their needs. IGS' deep understanding of material science and metal wastage mechanisms within boilers allows us to create a fit-for-purpose maintenance program, ensuring lasting boiler reliability.

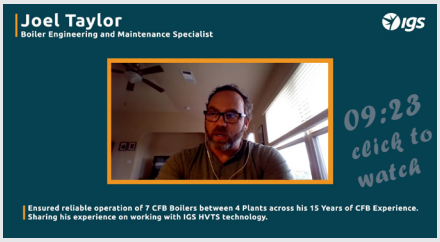
CFB Boiler panels protected with IGS HVTS

Expert View

Two CFB Boiler experts, with combined 40 years CFB boiler operation and maintenance experience, have shared their views on how working with IGS has helped them enhance their CFB boiler reliability over the years.

Watch their interviews or contact us for interview transcripts.

Interviewing CFB Boiler Operators with Decades of Experience



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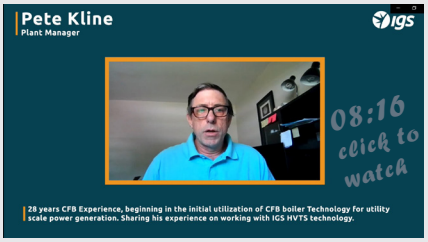

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