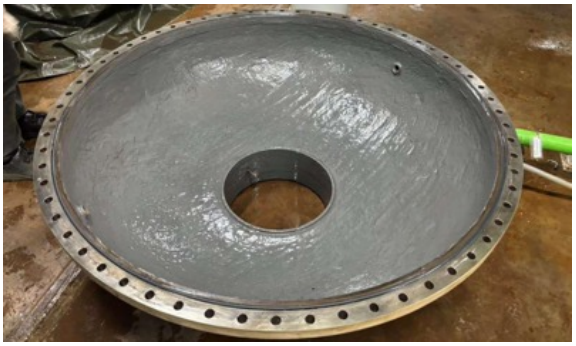
Liquid Metal
Epoxy Repair Coating

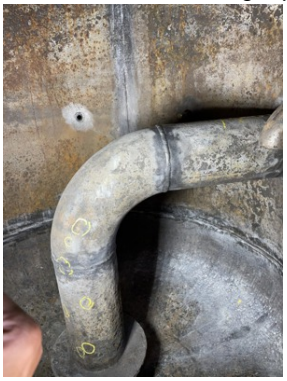
Case Study

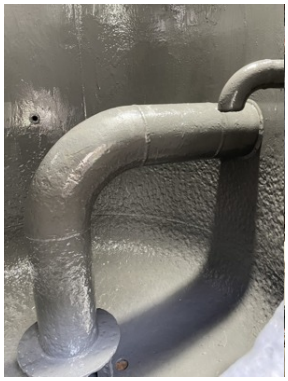
Power Plant Heat Exchanger Corrosion Protection

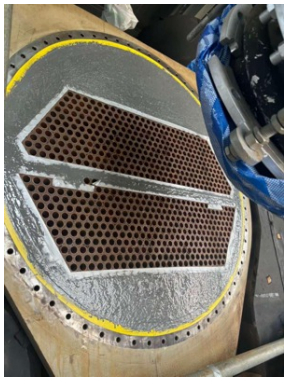
A power plant in Thailand uses Liquid Metal to protect a heat exchanger plenum chamber, tubes and a condenser faceplate against corrosion



Liquid Metal repaired the heavily corroded metalwork inside the heat exchanger plenum chamber







Worn tubes inside the chamber and the condenser faceplate were also refurbished with Liquid Metal

Defect

Extreme temperatures, high pressure and unpurified water passing through the plenum chamber created ideal conditions inside for corrosion and cavitation.

A standard epoxy coating had been used for many years to protect the chamber. But the rate of corrosion meant a new coating had to be applied annually.

To reduce downtime and disruption, the plant were now seeking a more robust, effective coating which did not require yearly re-application.

Solution

Analysing conditions inside the chamber helped formulate a specification for an ideal epoxy coating.

Temperature resistance needed to be as high as 149°C with long-term performance at operational temperatures of 25–40°C. It had to be resistant to pH 8-10 and pressure up to 3 bar.

Based on these requirements, Sylmasta recommended **Liquid Metal Epoxy Coating.** Three coatings 1mm thick were painted onto the internal metalwork, tubes and condenser faceplate.

The repair created a 3mm thick metallic outer layer over the original parts, offering ultimate protection against corrosion and cavitation.

Result

Six months later and the plant contacted Sylmasta to say an inspection revealed Liquid Metal had fully performed with no deterioration to any coated surface.

Liquid Metal has since been used to protect 22 blowdown tanks at this plant, and different systems at other power plants across Thailand.

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