CERAMIC SUPERGRADE

Case Study

Corroded Turbine Cooler Condenser Unit Rebuild

The iron face of a turbine cooler condenser unit deformed by corrosion at a power station is rebuilt to avoid the expensive installation of new parts

The cast iron face of the condenser unit was heavily corroded after 20 years of service

Ceramic Supergrade rebuilt the face, creating an ultra-smooth surface over the deformed cast iron with high resistance against future corrosion

Defect

The unit had been condensing steam into water for 20 years at an electrical power plant operated by the Puerto Rico Power Authority. After such long service, the cast iron face had been deformed by corrosion.

Spare parts for this type of condenser were no longer made, so replacing the face would have involved finding a company to fabricate a customised part and shipping it to Puerto Rico at considerable cost.

Installing a replacement condenser with a 20 year lifespan was not an expense the Power Authority could justify when the turbine was expected to be condemned long before that.

Solution

Sylmasta recommended **Ceramic Supergrade Epoxy Paste** to rebuild the damaged face and offer the original cast iron protection from future corrosion.

The condenser was cleaned and rods inserted into every tube hole in the face. This ensured none of the bronze tubes could be inadvertently filled with epoxy paste during the application.

Ceramic Supergrade was applied via a hand tool. It filled imperfections in the cast iron and created a new, ultra-smooth, waterproof face over the weakened cast iron with excellent corrosion and abrasion resistance.

Result

A full cure was achieved in 24 hours. The condenser was returned to the turbine and the system put back into operation.

The high-wear resistance of Ceramic Supergrade will keep the condenser in service until such time as the turbine is replaced.

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