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 suffering from heavy corrosion after 20 years of service

Ceramic Supergrade rebuilt the face, creating an ultra-smooth surface with high corrosion resistance

Defect

The unit had been condensing steam back 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 was heavily corroded and deformed. Parts for this type of condenser were no longer made, so replacing the face would have involved specially fabricating new fittings and shipping them to Puerto Rico.

Installing one new condenser with a 20 year lifespan at considerable expense could not be justified financially as the turbine would have to be condemned long before that.

Solution

Sylmasta recommended the use of **Ceramic Supergrade Epoxy Paste** to rebuild and refurbish the face, and protect it from further damage.

The condenser was cleaned and rods were inserted into every tube hole in the face, covering them so they did not become inadvertently filled with epoxy paste during the application.

Ceramic Supergrade was then applied via a hand tool, filling imperfections in the cast iron and creating a new ultra-smooth, waterproof face with high corrosion and abrasion resistance.

Result

Within 24 hours, the epoxy paste had cured and the system was put back in operation.

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