

## Challenge

### Goals

- Restore and enhance heat exchange efficiency
- Corrosion protection and leak prevention

### Root Cause

Severe bi-metallic corrosion due to dissimilar metallurgy of the tubes and the tube sheet, exacerbated by chemically corrosive cooling water.

## Solution

### Preparation

- Steam clean at 100 bar (1400 psi) with steps to test for and remove chlorides
- Insert plugs to protect tubes
- Vacuum grit blast to Sa 2.5 with 3 mil (75 µm) angular profile

### Application

1. Rebuild pitted areas with [ARC 858](#)
2. Apply 2 coats of [ARC S2](#) total ~DFT: 60 mils (1500 µm)

## Results

### Client Reported

- >72 months of optimal service
- 36 months cost avoidance\*: \$35K
- 72 months savings per exchanger: \$70K
- Client protected > 100 condensers and heat exchangers with [ARC 858](#) and [ARC S2](#)

**Estimated total 72 mo. savings: \$7,000,000**

\*Cost avoidance: Tube, Sheets and Efficiencies

\$=USD



Corroded tube sheet



Surface preparation and tube protection



Protected tube sheet