



## CASE STUDY

Manufactured Since 1942 by: Apex Engineering Products Corporation

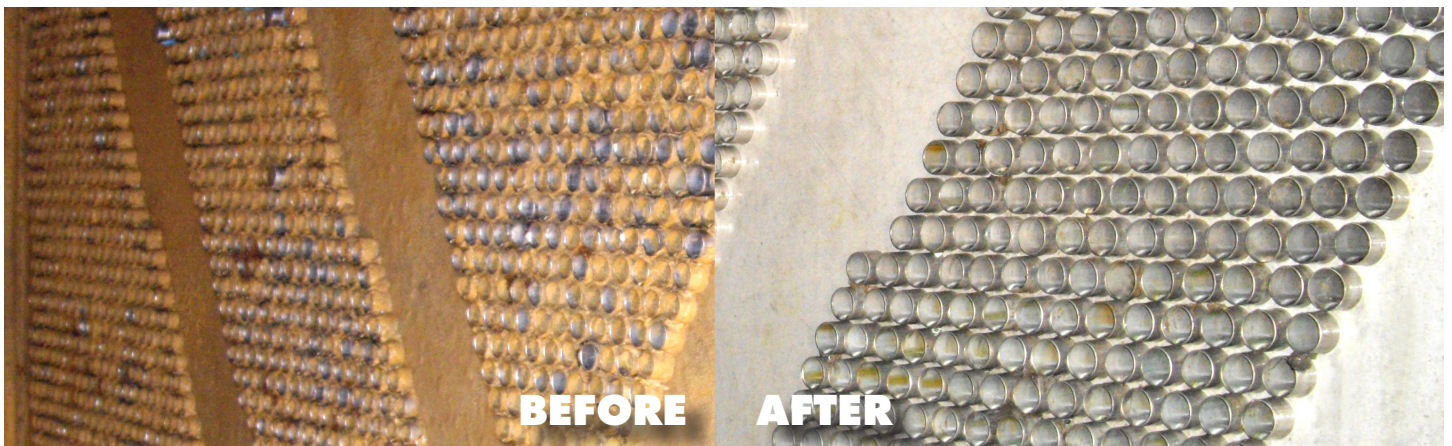


# 2200 MW POWER PLANT CONDENSER

The key to low cost power plant operation is maintaining clean, leak-free condenser tubes. Fouled condenser tubes have the greatest effect on operating efficiency which translates to a significant economic impact on plant operation. The reduced heat transfer from fouled tubes results in higher backpressure in the condenser and reduced turbine efficiency. This will increase fuel consumption and even reduce the power generation capacity of the plant.

A Florida combined cycle power plant was experiencing low heat transfer and overall inefficiency in their main turbine condenser. The backpressure had increased significantly since their last mechanical cleaning indicating a high amount of scale accumulation in the condenser tubes. This large main turbine condenser consisted of 16,424 stainless steel tubes with a volume of 31,350 gallons, the water boxes with a volume of 11,200 gallons for a total volume of 42,550 gallons. The condenser was set up for circulation by incorporating a 4" centrifugal pump to move the **RYDLYME** solution into the condenser and back to a vented 21,000 gallon Baker tank. They initially elected to clean half of the condenser with **RYDLYME** and the other half by feeding in 4,500 gallon of sulfuric acid to evaluate with method would be better in future cleanings

A total of 6,930 gallons of **RYDLYME** was used to realize a 32% solution that was circulated for 24 hours through half of the main turbine condenser.



### CHALLENGE

Significantly reduced heat transfer in the tubes of their main condenser due to heavy scale buildup resulting in reduced overall power plant efficiency.

### SOLUTION

Circulate 6,930 gallons (21 totes) of **RYDLYME** through half of the main condenser via a 4" centrifugal pump for 24 hours.

### RESULTS

**RYDLYME** completely removed the scale from the condenser tubes returning it to its designed efficiency. **RYDLYME** was the clear winner in the comparison as the sulfuric acid was deemed to "have little or no effect" in removing the scale from the condenser tubes. Additionally, it was observed that, not only was **RYDLYME** significantly faster than previous mechanical or chemical methods, it was much safer for their personnel.