

Challenge

Issue

Excessive damage to pump internals was reducing performance after only 5 years resulting in reduced base load operating efficiency of plant.

Goals

- Extend pump life longer than 5 years
- Reduce erosion/corrosion effects

Root Cause

Entrained solids coupled with high flow caused erosion and corrosion issues.

Solution

Preparation

- Decontaminate surfaces
- Grit blast to Sa 2.5 with 3 mil (75 µm) angular profile

Application

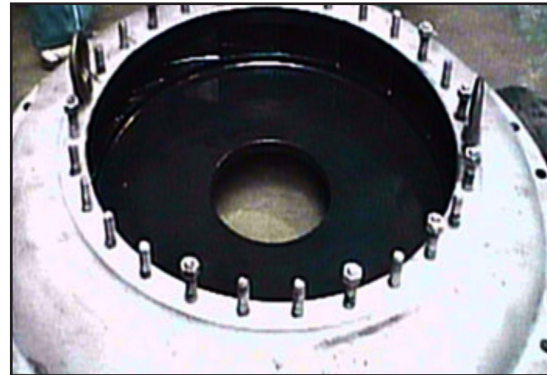
1. Apply **ARC 858** to rebuild eroded sections of pump
2. Apply 3 coats of **ARC 855** @ 15-20 mils (375-500 µm) per coat to entire wet end
3. Rebalance impellers

Results

- After 1 year in service, client reported 9% efficiency gain on first pump protected with ARC and no signs of further erosion to wet end at 10-year inspection cycle
- Achieved independently measured energy savings of 270 MWh per year
- Savings on energy costs for one pump: € 25K
- Anticipated energy savings: >€130K
 Client instigated a program to coat an additional 7 pumps with asset preservation of pumps



Erosion and corrosion of the pump after 5 years operation in river water



ARC 855 installation in the pump volute



After 10 years of operation, the ARC 855 coating shows no damage