

Challenge

Issue

Catalyst pumps required frequent repair resulting in system shutdowns.

Goals

Increase MTBR by at least 50% with resulting reductions in maintenance spends

Root Cause

Catalyst particle size reduction from 20 to 5 μm due to reduce clearance in pumps. High temperatures and the chemical scale build-up on wetted edge of pump resulted in increased amperage and energy.



Before: Pump and back plate showing scaling, impeller is new.

Solution

Preparation

Catalyst residue was removed followed by grit blasting to Sa 2.5 cleanliness with 75+ micron profile.

Application

Three alternating color coats (Gray, Blue, Gray) of ARC HT-S were manually applied by brush to a total DFT of 800 – 1000 microns (31 – 40 mils).



In process: manual apply three coats of ARC HT-S.

Results

Client Reported

After six months in service, client stated there was no damage to coating. Over the six months run time, there was no increase in motor amperage demand indicating that clearances were maintained. Client is extremely satisfied with ARC solution and decided to coat remaining five catalyst pumps in process.

Return on Investment

MTBR increased to six months (50%) at the present time. Since the impeller has not been replaced, plant saved >\$2,000.



After: Finished pump components, before assembly.