



POWER ENGINEERING CORPORATION

Challenge

Issue

Internal damage to dredge pumps reduced MTBR to <6 months, causing delays to harbour dredging project and forcing client to consider upgrading to higher alloy pumps.

Goals

1. Extend the life of existing pumps >6 months
2. Rapid repair turns around (<48 hours)

Root Cause

Combination of high chlorides and abrasive slurry passing accelerated erosive attack to as much as 12 mm in <6 months

Solution

Preparation

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

Application

1. Rebuild zones of high wear with ARC BX1 @ 240 mils (6 mm) minimal thickness
2. Apply two alternating colour topcoats of ARC S2 to all surfaces @ total DFT of 20 mils (500 µm)

Results

Client Reported

1. Repairs accomplished within 48 hours
2. After 6 months the repaired pumps continue to operate
3. Expected ARC coating repair cycle is 10-12 months – increasing MTBR by 3X

Additional Information

■ Client authorized an additional 2 pumps to be cycled through repair process as opposed to upgrade to higher alloys components



Worn pump **before** application of ARC BX1 and ARC S2



After application of ARC BX1 and ARC S2