

Challenge

Issue

Damage from erosion and cavitation required three week's of repairs to address welding and grinding.

Goals

Reduce the effects of cavitation damage on turbine blades and reduce downtime associated with repairs.

Root Cause

Vanes of turbine were eroded and impacted due to high suspended solids content in water and cavitation from low flow.

Solution

Preparation

 Abrasive blast surface to Sa 2.5 with 3 mil (75 μm) angular profile

Application

- 1. Apply ARC 858 to the cavitation affected areas, rebuilding any metal loss
- 2. A subsequent top coat system using two alternating color coats of ARC 855 applied for a smooth surface finish

Results

Client Reported Productivity/Labor Savings

- ARC coating solutions reduced maintenance from 21 days per year to 3 days per year
- While cavitation still occurs, only the coating is being damaged which can be quickly and easily repaired



A Francis turbine prior to coating



Cavitation damage is evident after proper surface cleaning



Top coat of ARC 855 on the cavitation affected blades

Technical data reflects results of laboratory tests and is intended to indicate general characteristics only.

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