

Challenge

Issue

Turbulent flow damages stay vanes, creating cavitation zones which impact turbine efficiency. Costly hard-face welding involves extensive downtime with poor results.

Goals

- Reduce maintenance costs
- Improve wear resistance of stay vanes
- Increase turbine efficiency

Root Cause

Metal loss due to abrasive solids in the water.



Grit blasted stay vane

Solution

Preparation

- High pressure water clean at 100 bar (1400 psi)
- Closed circuit grit blast to Sa 2.5 and a 3 mil (75 µm) angular profile

Application

1. Apply **ARC BX2*** to fill gaps >120 mils (3 mm) depth
2. Apply **ARC 858** as surfacing coat @ 20 mils (500 µm)
3. Overcoat with 2 coats of **ARC S2** @ 10 mils (250 µm)

*ARC BX2 is the "Bulk" package size of ARC 897



Rebuilt with ARC 858 and ARC 897

Results

Client Reported

- Applied ARC 80% faster than hard-faced welding (3 days vs 10 days)
- Rebuilt surface, reduced turbulent water flow
- Increased efficiency and run time
- Continuous runtime extended to 18 months



Top coated with 2 coats ARC S2