Shaft Coatings

Preventing Corrosion on Horizontal Hydro Turbines

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Why - What

• Corrosion on Shafts Lead to Failures
  – Primarily on Double Runner Horizontal Units
Why - What

- Corrosion on Shafts Lead to Failures
  - Primarily on Double Runner Horizontal Units
- Tried Several Coatings
  - Polyurethane paint
  - Epoxy paint
  - Epoxy coating
- More Corrosion Resistant Material was Cost Prohibitive
Lloyd Shoals

- Polyurethane paint
- Applied in 2000/2001
- DID NOT WORK
Goat Rock U3
Goat Rock U3
Goat Rock U3

- Epoxy Paint
  - Often used as primer
  - Rated for immersion service
  - Per turbine vendor, performed well in P/T spiral case

- DID NOT WORK
  - Installed early 2006
  - Recently inspected - gone
Morgan Falls U3

- Epoxy Coating
  - 2 part epoxy
  - Flexible, tough
  - Normally used to coat ship propeller shafts
  - Promising results in river dredge
Morgan Falls U3

- Epoxy Coating
  - Applied with brush, troweled smooth
  - Turned on lathe under heat lights while curing
  - Recommended removal technique = machining
Morgan Falls U3
Morgan Falls U3
Morgan Falls U3

So???
DID IT WORK???
Morgan Falls U3
Any Suggestions?

• Forward any ideas to:
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