



AR[®]1 INCREASES RELIABILITY OF SCREEN WASH PUMPS

CUSTOMER BACKGROUND

Screen wash pumps are used worldwide in power plants for high-pressure cleaning of debris from traveling screens. The traveling screens “filter” water intake from rivers, lakes, oceans or other sources before the water is taken into the plant. These screens sometimes become overly saturated with debris, which is “sprayed” off by the screen wash pumps. A top five U.S. nuclear generating station on the Delaware River was having difficulty obtaining reliable service from the rubber cutlass and Thordon bearings it was using.

CUSTOMER GOALS

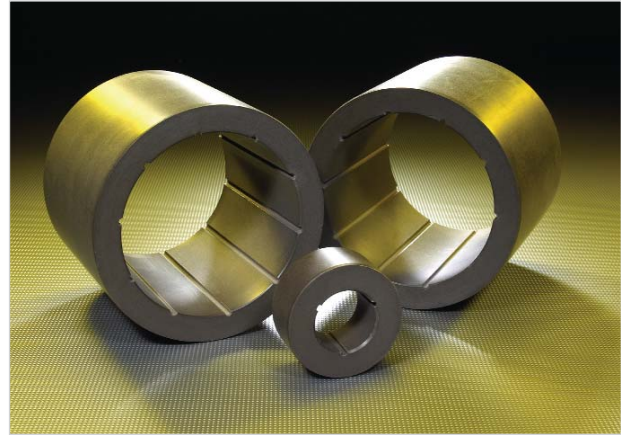
- Improve pump performance
- Extend MTBF (mean time between failure) from nine months to three – five years
- Minimize vibrations and costly pump repairs

CHALLENGE

Plant location permitted an onslaught of massive amounts of “phragmite” every spring when the river thawed. Phragmite is a term used for dead vegetation usually associated with river grass. This phragmite is sucked into the screen wash pump intake, causing it to wind around impellers and shafts, resulting in vibration spikes and premature bearing failure. In addition, the Delaware River is known for its unique mud/silt abrasive makeup that often plays havoc with traditionally used materials.

SOLUTION

The customer installed Greene Tweed AR[®]1 bushings for inline and bowl locations and chopping blades in the pump intake to chop up the phragmite before it gets drawn into the pump.



AR1 Bearings

BENEFITS

The AR1 bearings were initially installed in the first week of March 2007. In the spring of 2007 the customer reported that the “phragmite season” was the worst in 100 years, with unprecedented amounts of dead river grass floating into the pump intakes. Customer stated that “Rubber cutlass and Thordon would never have survived that amount of phragmite intake.” Not only has the AR1 survived, but not a single pump out of 17 converted to AR1 has failed to date.

RESULTS

Customer has accelerated its use of AR1 in larger circulation pumps and the remaining screen wash pumps because of the initial success.

Technical Data

Pump model:	13CMC-5 Johnston/Sulzer Vertical Screen Wash Pumps
Pump GPM:	1,500 (5,678 LPM)
Pump head:	287 @ 1800 RPM
Shaft diameter:	1.688 in. (42.87 mm)
Media:	Abrasive river water with seasonal phragmite

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