Application Profile

DuPont™ Vespel® CR-6100

Replacing Wear Parts for Boiler Feed Pump Helps Reduce Operating Costs.

Photo source: Hydro Scotford, Inc.

Application

A large hydrocarbon processing facility in Central Alberta was using a nine-stage horizontally split-between-bearings pump (right photo) with 12-chrome stationary and rotating wear components to feed water to a boiler.

Challenges

The facility's engineers wanted to find a way to eliminate running a second pump because it greatly increased operating cost, and they needed to avoid a recurrence of seizure incidents previously encountered with the primary pump.

Solution

Vespel® CR-6100 parts. The operator installed Vespel® CR-6100 parts as stationary wear components (left photo shows one in a metal case ring holder) in the primary pump. Clearance is about half that of the original design specifications of 0.016 in. (0.406 mm) for metal parts. Hydro Scotford Inc., of Ft. Saskatchewan, Alberta, engineered the conversion and provided the parts.

Benefits

Sharply lower operating cost and increased efficiency. Increased efficiency achieved with the clearance reduction enabled by Vespel® CR-6100 parts made it possible to operate at full capacity with a single pump instead of two. The elimination of the second pump saved $100,000 per year in operating cost. In addition, the pump now draws 5% less amperage, saving $6200 annually based on a typical North American power cost of $0.06/kWh.

More Benefits

No seizures, no repair costs to date. As of January 2011, the pump has operated for three and a half years without a single seizure failure. That has saved $65,000 in annual repair costs that would have been needed with metal wear components, adding up to nearly $200,000 in three years.

Reduced vibration. With Vespel® CR-6100 parts, the pump runs with much less vibration than previously.

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