

Industry: Coal Power Plant
End User: Datang Ningde Power Plant, Fujian, China
Application: Circulating Water Vertical Pump
Thordon Grades: Composite & SXL
Date of Original Installation: 2016

About:

The Datang Ningde Power Plant is a 2,520MW coal fired power plant located in Fujian, China. It is owned by Datang International Power Generation Co Ltd., and started producing power in 2006.

Challenge:

In 2018, the Datang Ningde plant started using AR®1 bearings in their Ebara water-circulating vertical pumps. During an inspection in 2022, engineers at the plant discovered that the AR®1 bearings had rotated in the housing due to vibration caused by a fastening screw failure. This caused excessive wear on the shaft seal as well as the bearing surface, resulting in increased maintenance costs. Plant engineers also noticed abrasive wear on the ID of the bearings.

Solution:

The water being pumped at the coal power plant was abrasive, which was causing wear on the AR®1 bearings. CY Engineering, Thordon's authorized distributor in China, contacted the plant engineers, as well as Pump OEM Ebara, with data demonstrating that Thordon's SXL and Composite materials had superior abrasive wear properties. Ebara recommended Thordon's SXL material to the Datang Ningde plant due to its outstanding past performance, which aligned with the pump design requirements. SXL was then fitted to three out of the eight pumps at the plant.

After discovering that additional pumps equipped with AR®1 bearings were causing problems and experiencing excessive wear, plant engineers sought assistance from CY Engineering to address the remaining pumps. The distributor recommended Thordon's Composite material, which has even better abrasion resistance than SXL, as a suitable replacement due to the high number of abrasives in the water.

Result:

In 2022, one of the pumps utilizing AR®1 bearings at the Datang Ningde plant was refit with Thordon's Composite bearings. These robust bearings from Thordon are projected to last 2 to 4 times longer than AR®1 and this is estimated to save the plant 30% in maintenance costs in comparison. During future maintenance cycles, the plant will convert the other four pumps operating using AR®1 bearings to Composite.

Based on the success of Thordon in these water-circulating pumps, the plant has also begun using Thordon pump bearings in their rain water pumps.

