

# GM2401 SHOWS NO VISIBLE SIGNS OF WEAR IN DIRTY WATER PUMP APPLICATION

When the engineers at Peach Bottom Atomic Station (Pennsylvania, USA) needed to improve the facility's river water circulation system, they were faced with two options: a costly upgrade of the water filtration system by installing new corrosion-free piping to protect the current bearings; or, a much less expensive upgrade of the Bingham pumps by replacing the bearings with Thordon GM2401. They choose the latter. Two years after installation, an inspection has revealed no visible signs of bearing wear, despite the dirty water conditions.

"Obviously, the Peach Bottom engineers are very pleased," says Larry Bohn, Sales Engineer for Fleetwood Industrial Products, the Thordon Bearings distributor in Pennsylvania. "They now expect to get several years out of the bearings before replacement is required."

## Long life in abrasive conditions

Thordon GM2401 is a tough elastomeric polymer bearing material that was introduced by Thordon in 1974. In applications around the globe, the product has demonstrated incredible wear resistance in extremely abrasive environments when used in combination with a hard shaft surface. The bearing material has significantly outperformed rubber - often by a factor of two or more - in pump and propeller shaft bearing applications.

"We needed reliable, water-lubricated pump bearings that could stand the test of time in abrasive-laden water

conditions," says Phillip Hennessy, Equipment Reliability Engineer for Exelon Nuclear, the operator of the station. "Thordon was the obvious choice."

Peach Bottom Atomic Power Station is situated on the Susquehanna River in York County, Pennsylvania, U.S.A. Peach Bottom has two boiling water reactors, which jointly produces over 2,300 megawatts. The station is co-owned by Public Service Electric & Gas of New Jersey and Exelon Corporation.

## A world of references

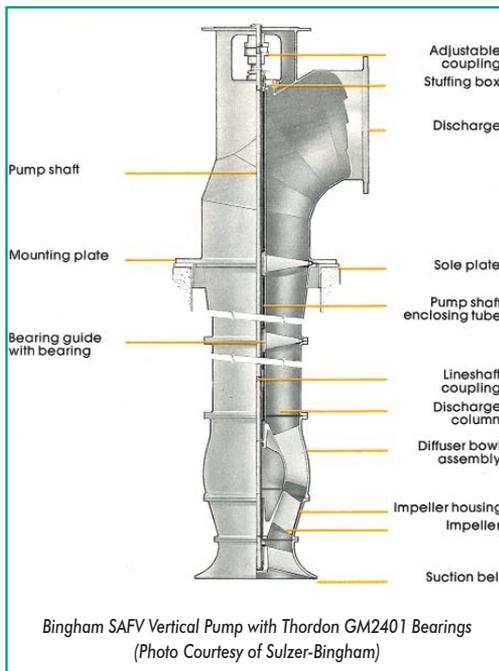
During plans to upgrade the river water circulation system, Peach Bottom engineers were enthusiastic - yet cautious - about a bearing material that claimed to perform well in dirty water. Replacing the pump bearings would be significantly less costly than replacing the piping. Yet, convincing evidence was required before Thordon GM2401 could be specified.

"That's where that staff at Thordon was very helpful," says Bohn. "The Peach Bottom people were definitely impressed by what we were telling them [about the bearing material], but they wanted to contact references before making a final decision."

Fortunately, references were not a problem.

Thordon GM2401 is installed in dozens of hydroelectric and pump systems worldwide. Numerous references were available involving applications that were just what the Peach Bottom engineers were looking for: large, vertical pump bearings operating in dirty river water and seawater. "Those references really helped us close the deal."

Peach Bottom is now another application of a long history of successes featuring Thordon GM2401. The bearings have been operating for approximately two years; running on 215 mm (8.5 in.) nickel-chrome-boron coated sleeves in the six Bingham pumps with a capacity of 250,000 GPM. Divers were recently sent into the river to inspect for bearing wear. They didn't find any. "In fact," says Hennessy, "they described the bearings using just one word: pristine." 



River water is circulated throughout the facility and is used for cooling a variety of systems and components. Although Susquehanna waters are relatively clear on most days, rain and other weather conditions can stir up silt from the river bed. These particles remain suspended in the water and are highly abrasive.