

Increase Revenue with Belzona 1341, a Hydrophobic Coating

ID: 9756

Industry: Power
 Application: CEP-Centrifugal Pumps
 Substrate: Carbon steel
 Products: Belzona 1311 (Ceramic R-Metal), Belzona 1341 (Supermetalgilde)

Customer Location: Cincinnati, OH
 Application Date: August 1989

Problem

In 1989 Cincinnati Gas & Electric, Columbus & Southern Ohio Electric Power and Dayton Power & Light entered into a deal to rebuild the William H. Zimmer Nuclear Power Plant to a coal fire plant. They had three main circulating water pumps that produced 150,000gpm each. A total of 450,000gpm was their capacity. However, they needed 600,000gpm. Their only choice was to add one more pump at a cost of a million dollars (1989). They asked if the Belzona 1341 (Supermetalgilde) would increase the flow from 450,000gpm to 600,000gpm and of course, we said "probably, maybe". They took the chance and coated the three pump casings only. After being put in service they found that the new capacity was producing 180,000gpm on each pump or 540,000gpm for the three. This equates to an increase in efficiency for the three pumps to approximately 17%. This negated the need for a fourth pump saving a million dollars in 1989 money.



This Nuclear Plant failed the pipe weld inspections and sat for 14 years before being converted to coal fired power plant. This shows the affects of corrosion from sitting in Ohio River water for over a decade.

The entirety of the pumps showed this type of pitting after grit blasting.

Belzona 1311 (Ceramic R-Metal) was used to rebuild all the pitted areas followed by two coats of Belzona 1341 (Supermetalgilde) which was brush applied.

Finished application.

Application Situation

Zimmer power plant was looking at spending an addition \$1M dollars (in 1989 dollars) to add a fourth pump in the conversion process from nuclear to coal. By using Belzona 1341 we were able to help them attain the required additional gpm's as it takes more water for coal than nuclear.

Application Method

The pump casing were grit blasted to SSPC SP-10, washed down with Belzona 9111 (Cleaner/Degreaser). Then the pitted areas were rebuilt with Belzona 1311 (Ceramic R-Metal). Two coats of Belzona 1341 (Supermetalgilde) were then applied by brush. Each pump took one day to coat.

For more examples of Belzona Know - How In Action, please visit <https://khia.belzona.com>

ISO 9001:2015
 FS 695214
 ISO 14001:2015
 EMS 695213

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 manufactured under an ISO
 9000 Registered Quality
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Belzona Facts

This application saved Cincinnati Gas & Electric over a million dollars by not having to install a fourth pump.

Over the 33 years this was in service, they gained \$11 Million dollars in additional revenue because of the hydrophobic coating. This created a revenue stream adding to their bottom line profitability.

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