



## CDI ENERGY PRODUCTS

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CASE STUDY – JANUARY 2020

### **dures® 250 Outperforms Competition at Nuclear Power Plant**

Custom bushings in a seawater circulating pump result in doubling of MTBR from 2 years to 4 years.

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**CDI**  
ENERGY  
PRODUCTS®  
*A Michelin Group Company*



### **PROBLEM IDENTIFIED**

Circulating pumps at a nuclear facility are critical to safety and must perform with minimal downtime. A nuclear power plant on the East coast was experiencing significant problems with their bushings in a seawater circulating pump. These bushings were lasting well below accepted maintenance intervals. The resulting service interruptions not only cost time and money, but the unreliable bushings were becoming a serious safety concern.

### **TECHNICAL SOLUTION**

Process conditions:

- 54” Vertical single stage circulating water pump,
- Pump make and model - Sulzer 54YMS
- Media – Unfiltered Sea Water (marine life present)
- Pump Speed – 332 RPM
- Run conditions – start/stop weekly

CDI Energy Products, operating at the time as EGC Critical Components, replaced the competition's premium grade PEEK composite material with our dures® 250 bearing grade material to help the maintenance team limit their service interruptions caused by bushing failure. dures® 250 is a compression molded filled PEEK material that can be machined to extremely tight tolerances. We recommended this product because one of the critical performance features of dures® is extreme abrasion resistance up to 250°F. It also has excellent dry running capability which can be crucial in these type pumps. Considering the operating conditions and the project needs, we were confident dures® could solve the customer's technical and operational concerns.



## STUDY RESULTS

After 18 months of service, the pump was removed as part of a facility upgrade and all the components were measured and analyzed. The dures® 250 bushings showed wear of only 0.001"/0.002" which is a significant improvement over our competition's product. The same components were reinstalled in the pump and the pump remains in service today. The time and lifecycle cost savings led to a facility-wide change for the customer.

When new pumps were installed, the facility chose to stay with the dures® material, and conversion to dures® across the site for other equipment has become their standard practice.

## FURTHER INFORMATION

To learn how CDI Energy Products can improve performance in your operations, please visit our website at: [cdiproducts.com](http://cdiproducts.com).

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The descriptions, design and performance information, and recommended uses for the products described herein are based generally on our design and manufacturing experience, product testing in specific conditions, and industry standards. The foregoing information is for general guidance only and does not constitute a guaranty or warranty of design or warranty of performance. Every effort has been made to ensure the information provided is accurate and up to date. However, the information provided herein is provided "as-is" and we make no representations or warranties of any kind, express or implied, with respect to the information provided. We reserve the right to make product changes from time to time, without prior notification, which may change some of the information provided herein. All warranties regarding the products described herein will be given in writing at the time of sale of such products. Each purchaser of such products must decide if the products are suitable to the intended use of such purchaser.

## BETTER SCIENCE. BETTER SERVICE. BETTERSOLUTIONS.

- In pursuit of Better Science, our team replaced the competitions AR-1 material with our dures® 250 bearing grade material, which has extreme abrasion resistance up to 250°F.
- In pursuit of Better Service, stepped in to provide the sustained technical and engineering support our customer had been unable to receive while working with another vendor.
- In pursuit of Better Solutions, we looked for ways to improve the bushing safety while also mitigating maintenance needs and reducing costly service interruptions.