Case History-011153

Cast Iron Waterbox Rebuild

PROBLEM:

By 1983, at a New England utility, the cast iron waterboxes, were subjected to many years of salt water attack. The corrosion was almost to the failure point, and the waterboxes were leaking at a few points. Replacement of the old waterboxes, ieven if possible, would take from 1.5 to 2 years to have them fabricated. Welding was not considered as the heat stress might cause cracking and complete failure of the waterboxes and shutdown of the plant.

SOLUTION:

DUROMAR, INC. was contracted to rebuild the surface using our thick film, permeation and abrasion resistant epoxy lining, **SAR.** After completely removing the thick crust of scale and digging out the graphitized pits, the surface was steamed to remove chlorides, dried and sandblasted to near-white metal. The rough surface was reprofiled with **SAR** which in some areas required over 1" of material. Then the complete surface was covered with a minimum film thickness of 80 mils DFT. To decrease drag and improve impact resistance, a topcoat of **EAC** @ 40 mils DFT was applied.

RESULTS:

The **DUROMAR** lining of approximately 120 mils of heavily filled, **SAR** and **EAC,** was found to add considerable strength to the now thinned cast iron surfaces. It has been shown that at this thickness, 1/3 to 1/2 the original strength can be added back to the lined surface. The work was performed during a normal outage time period and the waterboxes were put back into service with no additional downtime. The system was stable and leak free.

CURRENT STATUS:

The plant was decommissioned in 1993, but the rebuilt waterboxes performed perfectly during this period with no leaking or lost generation due to waterbox problems.

COMMENTS:

As with all **DUROMAR** products, the **SAR** and **EAC** are 100% solids, *Zero VOC*, solvent free, and contain no carcinogens or heavy metals. This makes application easy and safe for both the applicators and the environment. This process has also been successfully used to line carbon steel waterboxes with similar excellent long term results.

706 Washington Street, Pembroke, MA 02359 USA • Tel. (781) 826-2525 • Fax (781) 826-2150
www.duromar.com