PEMEX
TRANSFORMACIÓN INDUSTRIAL ®

Protection of a drain valve showcases TM198 success

Case Study

ShemenSal

OXIFREE®
METAL PROTECTION

Successful protection of a drain valve heavily corroded with rust and paint cracking.

Location	CPG Morelos, Coatzacoalcos
Local Environment	Onshore
Date	November 2014
Condition	Dry, windy
Total Coatings	1
Substrate Type	Valve
Duration	1 day

Summary

Shemensal conducted a trial at the Coatzacoalcos Area Gas Processing Complex on a drain valve which had become heavily corroded. A before and after test was to be done where only part of the valve was protected, leaving the other half exposed for comparison. The application was made and six months later it was removed for inspection.

Introduction

The Coatzacoalcos Area Gas Processing Complex it is located at the southeast zone of the country, in the Pajaritos industrial zone, Coatzacoalcos municipality, Veracruz. The complex is an important part of Pemex business because it is the link between production and commercialization. Morelos is one of 2 fractionation plants which commenced operation in 1990.

Objective

Drain Valve 2 "300 # in TE-5507 CPG Morelos was found to be heavily corroded with rust and paint cracking. It was decided the area should be cleaned of all contaminants including grease and prepared for the application of Oxifree TM198. TM198 was the best solution as no shutdown was required, the surface preparation required was minimal and did not require additional equipment.

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The drain valve was cleaned of contaminants and grease.

After

Before

After

Case Study

Process

A team consisting of a supervisor and an application technician completed the project (trained by Oxifree Global).

The area was cleared of contaminants and degreased using a eco friendly degreaser solution along with wire brush, to speed up the process. After cleaning, aluminium tape was used to cover any gaps and reduce the material used.

Oxifree TM198 was applied to the recommended thickness of 4mm which has a dielectric coating and protection of 60 KV. This dielectric protection is an additional advantage for Site Safety.

A Polymelt 50 AI machine was used for the application. The process took a total of 50 minutes to complete from cleaning through to end of application. Despite the windy conditions the application was a success.

Application process

Solution

This application was part of a trial for Pemex, so it was agreed that only the top flange would be protected by TM198. The bottom flange would be left exposed to assess the level of corrosion that may occur and to prove the effectiveness of Oxifree TM198.

Oxifree TM198 is easily removed to allow for inspection and maintenance which would support this trial.

Conclusion

On May 25 2015 (six months later), the coating was inspected to evaluate the effectiveness of Oxifree TM198 and its protection versus the degree of corrosion on the unprotected surface.

It was found that the unprotected flange and bolts were once again corroding due to environmental conditions.

Conclusion continued

On the protected substrate the existing coating was cut away (without damage) to reveal that no further corrosion had occurred. This ease for inspection is a fundamental feature of TM198. Once a small section has been cut away, the open area can be refilled.

On full inspection there was no evidence of any corrosion on the protected surface and the valve parts were fully operational.

The project was deemed a success with very positive feedback from the client. The valve had remained operational and protected, extending the life of the equipment and saving cost.

Oxifree TM198 is recommended for all types of metal structures, including those with complex assemblies where other traditional coating types would be impossible to apply. It is recommended for metal structures under extreme conditions of high corrosion rates such as rain, salt spray and chemical splash, UV rays and harsh climate conditions.

The protection provided by the coating will extend the life of the metal assets it protects saving costs to both CapEx and OpEx.