



## Cryogenic equipment preservation

### Case Study



## Using TM198 to protect pipework in a cryogenic environment.

Location	Chiapas Reform
Local Environment	Onshore Gas Processing
Date	December 2015
Condition	Dry, Windy
Total Coatings	4
Substrate Type	1 Valve and 3 clamps
Duration	1 Day

### Summary

Oxifree TM198 was used to protect 1 valve and 3 clamps on pipework on the Chiapas Reform, Criogenica 3 Nuevo Pemex. The valves and clamps had suffered extensive corrosion, despite the use of a protective paint coating. Oxifree TM198 provided the perfect solution with its proven ability to arrest and prevent further corrosion as well as being applied with minimal preparation to operational equipment without the need for a shutdown.

### Introduction

Nuevo Pemex Gas Processing Complex occupies an area of 464 hectares and is located in the state of Tabasco to 35 km. of the city of Villahermosa. The complex began operations in 1984 and its main activities are: removal of acid components (H<sub>2</sub>S and CO<sub>2</sub>) by processes Sweetening Gas and Condensate, use of H<sub>2</sub>S through the process Sulfur Recovery, separation of liquid hydrocarbons through a Ethane recovery process and liquables and obtaining products through fractionation process.

### Objective

One Valve 6" 300 # EN AV - 3207 EA 3104 and Three Clamp 6" were inspected and found to have paint cracking and a high degree of rust on the surfaces. The area is subject to extreme temperature changes as can be seen from the main image where the completed coating is frozen. TM198 is able to withstand these climate conditions.

# OXIFREE<sup>®</sup>

METAL PROTECTION

*Previous paint coatings had been used but had not been successful at halting corrosion*



After



Before



After



# Case Study

The solution was for Oxifree TM198 to be applied to halt any further corrosion, the areas would be cleaned of all contaminants including grease, and prepared for the application of Oxifree TM198.

## 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 wire brush, and an eco friendly degreaser solution. Paint was stripped using a Carcher 3200 PSI. After cleaning, aluminium tape was applied to bridge the flange gaps, then the first layer of Oxifree TM198 was applied. The first layer is approximately 2mm thick and a dielectric protection 30 KV. A second coating of TM198 was applied to achieve 4mm thickness and a dielectric coating and protection of 60 KV. This dielectric protection is an additional advantage for Site Safety.

A Polymelt 50 ATEX 2-22 machine was used for the application. The process took a total of 70 minutes to complete from cleaning through to end of application.

## Solution

The Oxifree TM198 coating was applied throughout the body of the valve and 3 clamps to protect them from further corrosion and contaminants. The coating provides protection immediately and will provide 100% protection against further corrosion and contamination. The coating may be removed for inspection at any time.

**OXIFREE**  
METAL PROTECTION

*Title of photos*



## Conclusion

The project was a success with very positive feedback from the client, and the protection using Oxifree TM198 allows the valve, clamps and studs to remain operational and protected from corrosion and contaminants. This extends the life of the equipment without the need to replace at a substantial cost.

The use of Oxifree TM198 reduces the cost of maintenance and/or replacement of equipment and allows for easy inspection and can be refilled.

The work will be reviewed within a year to assess the success of the project.