



OXIFREE

Corrosion Control Solution
Case Study: Application on Offshore
Platform for flange protection
Lam Son Joint Operating Company

THANG LONG-DONG DO FIELD, VIETNAM



OXIFREE[®] METAL PROTECTION

Client Profile

Client : Lam Son Joint
Operating Company
Field : Thang Long - Dong Do
Location : Cuu Long Basin, Vietnam
Industry : Oil & Gas Industry
Weather : Hot and Humid

Background

Lam Son Joint Operating Company (LSJOC) is an equally-owned venture between Petronas Carigali Sdn Bhd and PetroVietnam Exploration Production Corporation. LSJOC currently operates block 01/97 and block 02/97, offshore Vietnam. The Thang Long – Dong Do field which is located on these blocks, is developed with two well-head platforms and a Floating Production Storage and Offloading unit.

The Challenge

All offshore production assets are subjected to exposure to harsh marine environment including but not limited to salt water, salt mist and UV rays leading to corrosion of exposed metal components. LSJOC assets were subjected to similar conditions and sought a simple and effective solution to overcome this challenge. In March 2015, IEV received an award from LSJOC to provide a corrosion prevention system to flanges, bolts and nuts at Thang Long and Dong Do platforms to control and prevent corrosion on the components..

The Solution

The Oxifree Corrosion Prevention System - Oxifree TM198 coating was the recommended solution to address the conditions on both the platforms. All flanged connections on both platforms were encapsulated in Oxifree TM198 to protect the flange faces and bolts. Oxifree allows full movement of the stems while still providing maximum protection against contamination and corrosion. The solution is proven to significantly reduce maintenance costs and prolong the life of the metal components. It will also be a long term solution for the client in reducing offshore maintenance requirements.

Prior to coating, a minimum surface preparation was done which included cleaning of the bolts, nuts and flanges' surfaces from grease, loose/flaky rusts and moisture before Oxifree TM198 was applied. This is to isolate the atmospheric environment to prevent further ingress of water and/or oxygen and to ensure maximum productivity per day.

For more information about this project, email mgc@iev-group.com/info@iev-group.com



Thang Long Platform: Pig Launcher before cleaning



Thang Long Platform: Pig Launcher after cleaning and coating



Dong Do Platform: Gas Line after cleaning



Dong Do Platform: Gas Line after coating

The Process

The Polymelt 50 ATEX Machine was utilised to facilitate the coating of the flanges at the Main Deck, Cellar Deck, Mezzanine Deck and Sump Deck on the Dong Do and Thang Long platforms.

The Project was carried out in two campaigns:

First Campaign * Dong Do wellhead platform	Second Campaign * Thang Long wellhead platform
Coating operation on the process lines in sequence at the specific locations on Weather Deck, Main Deck, Mezzanine Deck, Sub-Main Deck and Sump Deck:	Coating operation on the process lines in sequence at the specific locations on Weather Deck, Main Deck, Mezzanine Deck, Sub-Main Deck and Sump Deck:
<ul style="list-style-type: none"> a) Diesel Pump & Diesel Storage Tank b) Pig Launcher & Over Pig Launcher c) Gas Lift manifold & Over Gas Lift Manifold d) Wellheads e) Corrosive Inhibitor / Demulsifier/ Chemical Tank f) Closed Drain Tank g) Open Drain system h) Water system i) Crane j) Chemical Injection System 	<ul style="list-style-type: none"> a) Diesel Pump & Diesel Storage Tank b) Water Pump c) Wellheads d) Press Gas Pipe e) Closed Drain Tank f) Open Drain system g) Pig Launcher & Over Pig Launcher h) Gas Lift manifold i) Other locations on Weather Deck
827 flanges were completely coated (100% of 1 st Campaign) in April 2015.	783 flanges were completely coated (100% of 2 nd Campaign) in May 2015.

Summary

A total of **1,610** flanges were successfully coated on both Thang Long and Dong Do platforms using Oxifree TM198 with an average of 35 flanges coated (two coats) per day (including surface preparation).

The time taken to apply two coats of Oxifree TM198 (including surface preparation) took only 41 days. This confirms Oxifree application efficiency compared to traditional blasting and normal paint.

Oxifree material has been thoroughly tested to 11688 hours of "industry standard" Salt Spray test, which complies with ASTM B117 corrosion testing which is equivalent to in excess of 20 years 'in the field'. Oxifree has also been through ASTM G56 UV/Weathering test and again exceeded required longevity with ease.

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