



Protecting flanges onshore

Case Study

Zero  Corrosion

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METAL PROTECTION

Protecting an onshore processing plant from further corrosion

Location	Uithuizen, The Netherlands
Local Environment	Onshore processing plant
Date	December 2015
Condition	Cold weather, icy at times
Total Coatings	204
Substrate Type	Flanges
Duration	18 days

Summary

Zero Corrosion were called in by NGT to protect an initial 155 flanges in a corroded state. The rate of corrosion is due to the location of the plant near the coast where the mixture of salt, wind and rain means a constant wet and dry process on the metal surface.

TM198 provided the perfect solution being applied with minimal preparation to live pipework, halting further corrosion

Introduction

Noordgastransport B.V. was established in 1973 for the treatment and transportation of natural gas. They now process and supply a substantial portion of the natural gas that is extracted from the Dutch continental shelf and beyond. After treatment, the gas is delivered to the pipeline network of Gas Transport Services B.V., which manages the national gas transportation network.

The processing plant is located in Uithuizen and the gas is delivered there via offshore pipeline systems.

Objective

NGT were experiencing significant corrosion problems due to their close proximity to the coast. Corroded equipment is clearly visible on their equipment across the plant. Zero Corrosion were called in to protect an initial 155 flanges for varying sizes with Oxifree TM198.

The initial scope actually extended to 162 flanges which was then later increased by 42 flanges to 204 flanges. All coated flanges were noted on a daily basis and double-checked at the end of the project.

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The extent of corrosion can clearly be seen before application



After



Before



After



Case Study

Since TM198 can be applied to live equipment there was no need to shut down any operations so the plant could remain fully operational. The application of TM198 would halt any further corrosion and protect the flanges immediately, allowing for inspection at any time.

Process

Before work could commence the electric supply for the machine had to be prepared and then a crane used to lift the machine up on to the scaffolding to begin the work at height.

Minimal surface preparation is required with the application of TM198, any loose surface was simply brushed away with a wire brush before coating.

With the number of flanges to be protected, the team worked 10 hour days to speed up the overall process of application. A team of 2 Oxifree trained technicians completed the applications over 18 days (with the increase in scope). Additional personnel were used to assist due to the nature of the work being at height.

The machine used was a Polymelt 50 Atex suitable for applications in the hazardous environment the team were operating in.

A range of flange sizes were coated from 8" to 40" diameter.

Scaffolding supplied by NGT was in place to assist in the flange applications at height and was modified when required by our application team for suitable access to the flanges.

Solution

The Oxifree applications to the initial scope of work (162 flanges) was successfully completed within the timeframe of the initial Budget Estimate (12.5 days) despite the scaffolding being in place for the lower flanges. The extra scope of work was completed in 5.5 days.

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The scope of work was increased to accommodate further corroded assemblies



Conclusion

Client Response (via Onstream Project Services who have a Partnership agreement with Zero Corrosion) – “NGT were happy with the project, we have been informed we will coat the same number of flanges towards the end of 2016 and the rest of the refinery over the next 5 years”.

Whilst working on site, Zero Corrosion recommended that further flanges be protected which showed visible signs of corrosion. This would ensure protection of the equipment and ensure the flanges remained fully operational. These were the additional 42 flanges that were coated over the course of the project, bringing the project total to 204 flanges.

The application of TM198 will extend the life of these assets and protect them from harsh environment they are exposed to on the coast. The material can easily be removed for inspection and simply refilled.

