ZEROSION
Corrosion Defense LLC

CASE STUDY:

Pit valves

OVERVIEW

Zerosion Corrosion Defence were contacted by a well-known oil and gas company to help them protect 18 valve assemblies in 5 sump pits, in the south of England. The valve assemblies were situated in overflow pits from crude tanks, so were constantly filled with wastewater and oil.

The substrates required full body coating of 9 x 1.8m high valve assemblies, with 36” mating flange, and 9 x 80cm valves. Each valve was fitted to pipe protruding from the pit wall, with less than 10cm behind each body, some with less than 5 cm between side wall and valve body.

The valve assemblies had been in situ for 20 years and showed signs of their age. The client needed them protecting for the long term as a fit and forget system, that they can operate, should they need to.

Unfortunately, due to site restrictions (and the lack of an ATEX camera for the start of the project), we don’t have many photos.

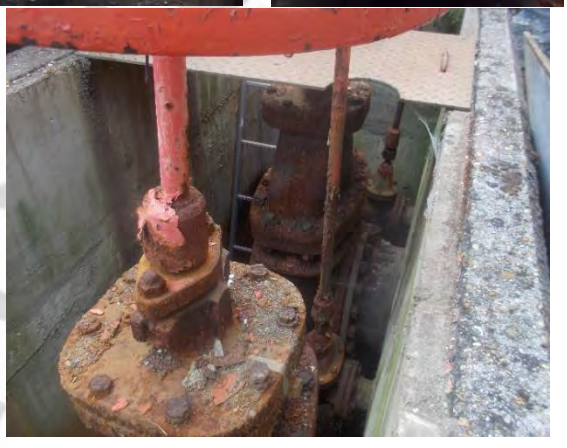
The Objective

The objective for all bolted section coating is to provide:

- To arrest and remove the established corrosion
- To protect the valves for the long-term.







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Technical/Project Approach

Deliverable	Description	Deliverable	Description
Manpower	1x ZCD Engineer	Budget	On budget
Duration	5 Days	Equipment	Zerosion application equipment, ATEX suitable equipment. Confined space escape kit, PRE equipment
Material Used	81 litres Z-FP 4 litres Z-AP	Site issues	ATEX site Confined space Weather and PRE equipment

The project

On the surface, this was a straightforward project, but once in the pits, in the middle of August, wearing full PPE, hooked onto a rescue tripod, and wearing PRE, it became hard work. The pits were approximately 2x1mx2meters deep and space was a premium, unfortunately, the walls had been built around the assemblies, so access to the rear was a challenge.

The valves were all cleaned using standard solvent cleaner and a brass wire brush, as there are quite a bit of oil and grease residue on the bodies. Once clean, a coating of the Zerosion Z99 and Z100 oxidation remover was applied, to ensure all crevices were free of moisture / oxidation. We then applied a 30µm coating of adhesive primer all over the body of each valve, each valve was left to fully cure (in the heat it didn't take long), before 3 coats of Zerosion was applied to the surface of each valve, in turn.

Due to site restrictions and work permits, we could only complete 1 pit per day, which put pressure on the team.

Each coating was thoroughly inspected and an average depth of 350microns per valve was applied.

Images