

HEX GALVANIC CORROSION ELIMINATED WITH HVTS

Protecting the 1st and 3rd Stage Reactor Feed Heat Exchanger Tube Sheets



PROBLEM

Galvanic corrosion on the tube sheets caused severe metal wastage, requiring weld repairs and grinding.

SOLUTION

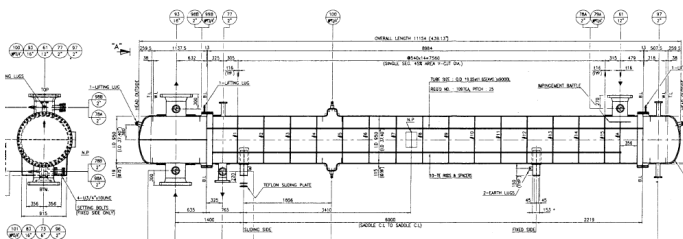
The plant operator decided to protect the tube sheets from further galvanic corrosion by installing a robust HVTS alloy cladding barrier.

The project was completed ahead of schedule to reduce critical path.

Galvanic Corrosion in Heat Exchangers

When galvanic corrosion occurs, the metal alloy of the heat exchanger equipment will be attacked, causing metal wastage and a loss of the metal wall thickness of the unit. If left unaddressed this can lead to leaks and a loss of containment.

Once the surface of the heat exchanger shell or tube sheet has started to corrode and pitting develops, metal loss increases due to the turbulent flow in this area, creating an even more aggressive erosion/corrosion cycle. It is therefore critical to mitigate corrosion mechanisms through corrosion management strategies, such as a surface corrosion barrier of high-temperature corrosion resistant alloy applied by IGS HVTS.

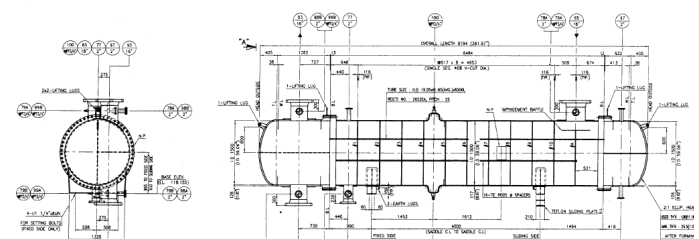


GA drawing of the 1st stage heater

Upgrading the Alloy with IGS HVTS

IGS HVTS cladding technology allows the process owner to upgrade the internal metal alloy in-situ without the creation of HAZ or the requirement for PWHT.

The IGS HVTS noble cladding is non-reactive and inert to the wide-ranging aggressive operating environments in heat exchangers, vessels, and columns. We develop specific alloys, freezing the metal condition and preventing any further internal metal wastage in your equipment's unique environment. This technology, combined with the unmatched site experience of IGS, provides the asset integrity manager with a turnkey, long-term solution to corrosion and, in consequence, an extension of the service life of the heat exchanger matching with its original design life.



GA drawing of the 3rd stage heater