

DEEPWATER

ICCP RETROFIT: NEPTUNE SPAR, GULF OF MEXICO

In August / September 2009, Deepwater Corrosion Services retrofitted the cathodic protection system on the Neptune Spar.

The original cathodic protection system on the hull was approximately 300 sacrificial aluminum anodes. Neptune required a life extension significantly in excess of the original 15-year service life, including the CP system. At the request of the operator, Deepwater designed, supplied and commissioned a 15-year life-extension impressed-current CP system (ICCP).

The retrofit cathodic protection (CP) system included:

- 2 x custom 500 amp RetroBuoys™ with shear keys
- 2 x transformer rectifiers
- 6,660 plus feet of dynamic 7-conductor 3/0 AWG subsea power cable
- 2 x Polatrak DR 3 reference electrodes (installed at Neptune's keel during the cable pull-in)

Installed in 1997, Neptune is a classic spar located in the Gulf of Mexico (Viosca Knoll block 826) in approximately 1,930 feet of seawater. Flowlines and umbilicals are pulled in through three sets of blister tubes located on the side of the spar hull. The two RetroBuoys™ were manufactured in Deepwater's Houston, Texas facilities and terminated dockside in Fourchon, Louisiana onto JDR cables. Both assemblies were then loaded onto Oceaneering's 254-foot long multi-service vessel, Ocean Intervention II. For each system, the RetroBuoy™ was deployed through an A-frame to its seabed target box. The RetroBuoys™ were designed with a shear key mud-mat to pierce the soil and withstand forces exerted by meteorological / oceanographic conditions and the Spar's lateral drilling offset.

The cathodic-protection monitoring system comprises two each Polatrak™ DR-3 dual-reference electrodes terminated to dual armored, shielded, twisted pair 12 AWG cables. The DR-3 probes are mounted near the lower opening of the blister tube at the keel. The cables were piggy-backed up along the section of subsea power cable routed through the blister tubes and terminated into a topside junction box. Cathodic protection potential measurements are monitored and recorded by the on-board SCADA system. The entire subsea system was installed in less than 72 hours.

More info at www.stoprust.com



ROUGH NEIGHBORHOOD
The platform sits in 1,930 ft of water in the Gulf of Mexico.



RAPID INSTALLATION
A RetroBuoy™ is about to be loaded onto the work boat.



ONE DOWN, ONE TO GO
Positioning the second RetroBuoy™ for deployment.