

DEEPWATER

CP ELECTRICAL JUMPER RETROFIT ON SUBSEA EQUIPMENT: CHINOOK FIELD, GULF OF MEXICO

Deepwater installs a mini-gateway retrofit in the Gulf of Mexico

During a July 2012 baseline survey of Gulf of Mexico subsea equipment and pipelines, it was discovered that a crucial component of an umbilical control system was electrically isolated from cathodic protection. Deepwater was asked to design and manufacture a retrofitable electrical jumper system to connect the gateway to an adjacent structure (PLET), which would allow the umbilical component to “borrow” cathodic protection from the PLET’s anodes.

Total project time: 14 days

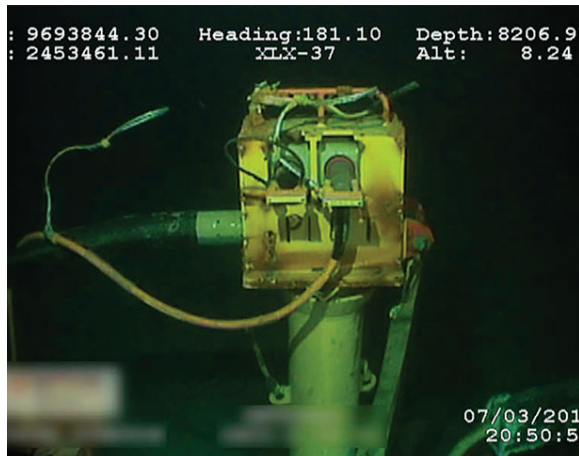
After active corrosion was observed on the mini-gateway, it was discovered the component was receiving no cathodic protection. The mini-gateway plugs into a receptacle on the PLET frame, a component that has no sacrificial anodes mounted directly to it. Mixed materials - stainless and carbon steels - in the absence of CP create a very aggressive galvanic coupling. Within a week, Deepwater had proposed a solution in the form of a custom-designed jumper system. This solution was immediately approved by Petrobras, and within one week, Deepwater designed, manufactured and shipped a custom RetroClamp™ jumper system to site.

The objective was to connect one RetroClamp™ to the pad-eye of the unprotected umbilical and another RetroClamp™ to the PLET tubular member below it (see photos). Flexible, high tensile strength jumper cables connected the two clamps. Once the ROV removed a shackle from the pad-eye, the installation of the RetroClamp™ system took less than half an hour. The umbilical’s CP potential shifted from -631mV (unprotected) to -841mV (protected) versus Ag/AgCl reference electrode.

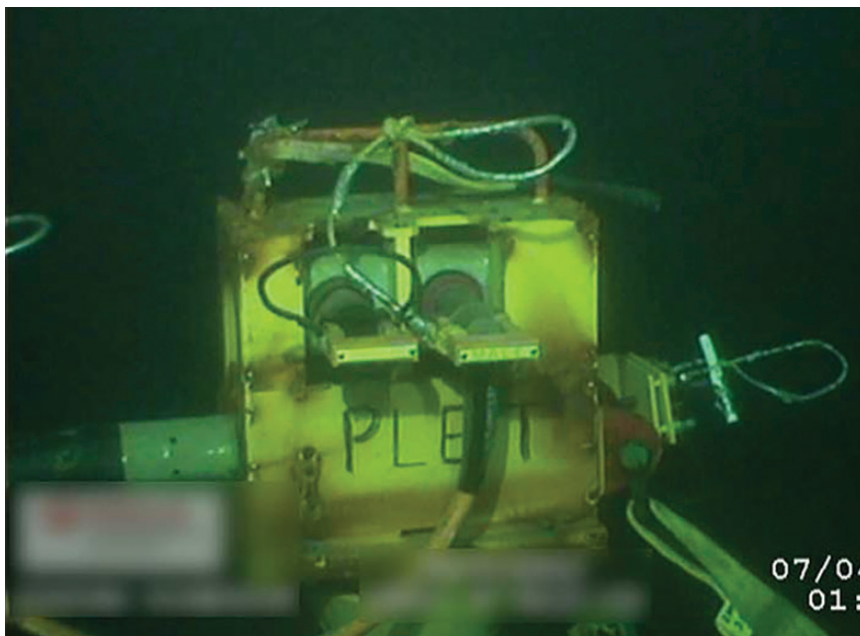
More info at www.stoprust.com



MINI-GATEWAY END VIEW
The mini-gateway showed active corrosion from lack of cathodic protection.



MINI-GATEWAY SIDE VIEW
Stainless and carbon steels - without CP - created an aggressive galvanic couple.



SPECIAL RETROCLAMP™ USED
A custom RetroClamp™ was designed to attach to the mini-gateway’s lifting eye (right side of photo).



CONTINUITY ESTABLISHED
RetroClamp™ end of bonding jumper connected to the PLET’s tubular receptacle.