

# DEEPWATER

## NORTH CORMORANT PLATFORM GETS 8 RETROBUOY™ ICCP SYSTEMS: NORTHERN NORTH SEA

### ICCP installation consisting of eight 950 amp systems

The North Cormorant platform, owned and operated by TAQA, is a fixed steel jacket located approx. 100 miles North East of Shetland in the Northern North Sea in a water depth of approximately 160 metres. The platform was installed with a galvanic anode cathodic protection (CP) system, mounted directly onto the jacket. Over the past few years, it was evident from a number of subsea surveys and reviews that the CP system was nearing the end of its useful life and a retrofit CP system was required.

The ICCP system consisted of eight 950 amp systems, each comprising of a remote anode sled located on the seabed between 300m to 350m from the jacket. These sleds were specially developed by Deepwater, based on their previous track record of the 450 amp RetroBuoy™ buoyant anode units that have been installed at a number of locations worldwide.

The sleds developed are the largest DC rated sleds designed to date, and with this approach and optimisation, reduced the number of subsea systems from 16 to 8. This minimised installation time and costs, space topside for the topside power supplies, cable routing and the subsea cable protection systems between topside and the subsea RetroBuoys™. Each RetroBuoy™ and cable deployment took just 18 hours to fully deploy and install on the seabed.

Each RetroBuoy™ is powered by a dedicated air cooled transformer rectifier (TR) located topside. Due to the platform space constraints, all 8 TRs were installed in a self-contained A60 module onshore. The module was mounted and installed on a new overhang structure built on the platform, minimising offshore destruct and installation time.

Results: The final design consisted of 8 complete systems each with the following components:

- Large output RetroBuoy™ (seabed mounted impressed current remote anode sled)
- Subsea anode power cable (including pull-in head, subsea armour termination and bend restrictor)
- Cable hang-off assembly
- Stainless Steel Ex-d anode junction box
- Transformer rectifier (housed in an A60 module)
- Positive and negative topside power feed cables
- Structural negative connection (2 negative train connection points)
- CP monitoring equipment

Each ICCP system was rated at 75 volts 950 amps DC to meet the required current demand and voltage drops. Successful installation of the ICCP retrofit was carried out in the third quarter of 2015, 15 months after commencement of detailed design. The ICCP system was successfully commissioned in early 2016 marking a major milestone for ICCP retrofits as the largest offshore CP retrofit for one structure at a current capacity of 7,600 amps.

More info at [www.stoprust.com](http://www.stoprust.com)



**HARSH HOME**

The platform sits in 160 metres of water in the Northern North Sea.



**A BOATLOAD OF BUOYS**

Eight RetroBuoys™ were used for the CP retrofit.



**TRANSFORMER/RECTIFIERS**

Each RetroBuoy™ required one of these units located topside..