

DEEPWATER

CP RETROFIT OF EMAS PIPELINE, PLATFORM AND FLARE TOWER: GULF OF THAILAND

RetroPods™, RetroSleds™, RetroClamps™, RetroMats™ and CP Test Stations™ were used in the retrofit.

Deepwater Australasia Pty Ltd (DCA) was contracted by EMAS Energy to provide installation support for the cathodic protection life extension of PTT's assets in the Gulf of Thailand: ERP Platform, ERP Flare Tower and the RC210 24" pipeline from ERP to Khanom Shore Base. The Erawan Riser Platform (ERP) was installed in 1994 and was designed for a 20-year life. The CP system had been active for 22 years, two years beyond the original design life.

The existing anode CP system for the 24" gas pipeline was at the end of its design life, and to protect the pipeline until 2042 a new retrofit CP system was necessary. Using a pipeline CP attenuation model to calculate the CP requirements, a total of 81 RetroSleds™ were required to protect the 160.87 km pipeline, based on having the retrofit system last for 25 years (until 2042, based on a 2018 installation). Deepwater was contracted to provide supervision of the installation of 81 RetroSleds™ on the main export pipeline from the ERP, 12 CP Test Stations on the main export pipeline, 4 RetroMats™ on the main export pipeline and 20 RetroPods™ around the ERP and Flare Tower. Anti-Snag Mattresses were not used on any buried sections of pipeline since the excavated hole will naturally backfill.

81 RetroSleds™ with 162 RetroClamps™ (two clamps per sled) were slated for installation on the main export pipeline in both buried and unburied locations. For buried locations, a dredger was used to expose an adequate amount of pipeline for installation. However, 20 pipeline locations between KP128.57 and KP160.57 were buried beyond the access capabilities of the dredging equipment on board the vessel. All 20 installations in this region were removed from the scope by the client. As no new anodes (RetroSleds™) were installed in the more deeply buried sections of pipeline, those sections of pipeline will be protected by only the remaining life of any existing bracelet anodes.

Thirteen CP Test Stations were installed along the pipeline. This equates to one CP Test Station for every six RetroSleds™ (approximately one every 10 kilometers.) All CP Test Stations were successfully installed. There is a CP stab location on these clamps consisting of a piece of exposed steel (free of coating) where a Deep C Meter™ or other similar CP contact probe can easily take a CP reading of the pipeline when the clamp is in contact with the pipe.

For the locations where a CP Test Station™ was required but the pipeline was buried, a RetroMat-Stab CP Test Station™ was installed. This consists of a mattress cast with rope throughout it and a stab plate accessible on the mattress. The mattress was tied into a regular RetroClamp™ via tie-back cables. The ROV, using a Deep C Meter™ or other similar CP contact probe, can stab the plate on the mattress in the future when taking CP readings.

More info at www.stoprust.com



PODS FOR THE PLATFORM, SLEDS FOR THE PIPELINE
Retrofitting the platforms took 20 RetroPods™.



LOTS OF HARDWARE
The 160 km pipeline required 161 RetroClamps™ and 81 RetroSleds™



RETROPODS™ IN A ROW
Lower-profile RetroSleds™ were used on the pipeline retrofit.