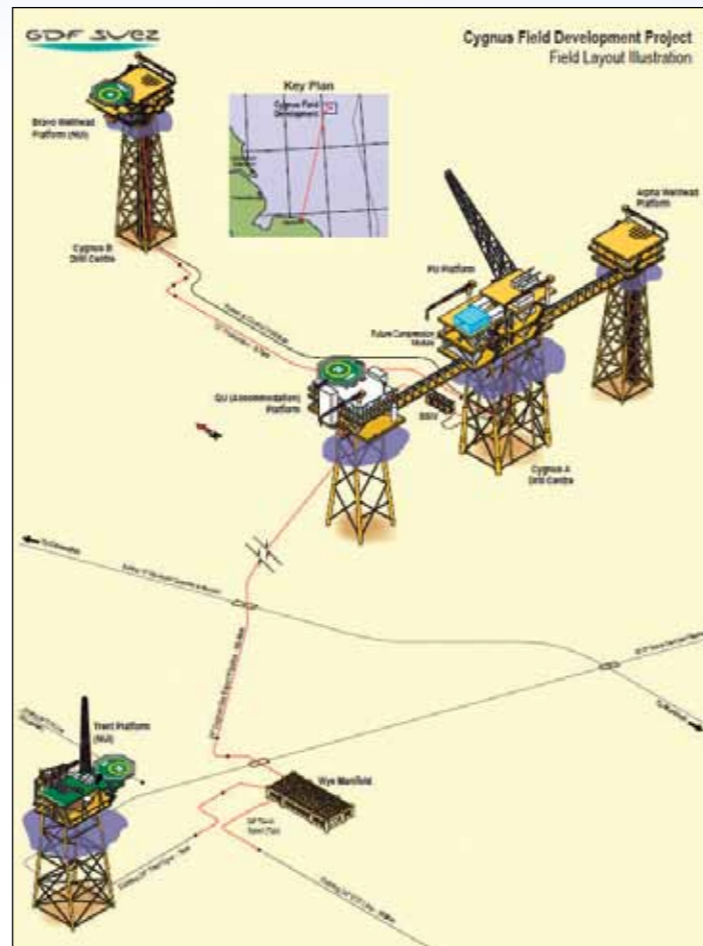


Escher commissioned to supply Triethylene Glycol Regeneration Package

In December 2012, Escher Process Modules (Escher) was commissioned to supply a Triethylene Glycol (TEG) Regeneration Package for GDF SUEZ E&P UK Ltd, with AMEC as contractor. The TEG Regeneration Package will be installed on a platform in the Cygnus Gas Field in the British zone of the North Sea. The platform is located 150 kilometres north-east of the town of Easington in County Durham.



The Cygnus Field development project will have two drilling locations. The first location is the central production, processing and Accommodation Platform Alpha CPF, in the eastern section of the Cygnus Field. The second location is the Brave WHP Satellite Wellhead Platform, which is linked to Alpha CPF and situated seven kilometres to the north-west of Alpha CPF. Extracted gas is transported via a 55 kilometres long 24 inch pipeline to the ETS pipeline (Esmond Transmission System), which comes on shore at the Bacton Gas Terminal (near North Walsham in County Norfolk).

Water must be removed from the natural gas before the gas can be transported from the platform to the mainland. This process is carried out in a so-called contactor, where triethylene glycol is brought into contact with the gas at an operating pressure of 100 bar(g) and a temperature of 35°C. The glycol removes water from the gas and is carried out at the bottom of the absorption column, while the dry gas exits from the top of the column. The triethylene glycol absorbs the water from the gas, and the resulting liquid is referred to as 'rich TEG'. Rich TEG comprises absorbed water and condensate from the natural gas. Of course, it must be possible to reuse the TEG. A regeneration skid will be supplied for this purpose. The main components of the regeneration skid are a reboiler, a flash drum, storage tanks, circulation pumps, and a number of heat exchangers. The TEG pressure is reduced in the flash drum, resulting in evaporation of the hydrocarbons in the TEG. The TEG temperature is increased to 204°C in the reboiler, resulting in evaporation of the water. The liquid is described as 'lean TEG' when it leaves the reboiler. The heat exchangers optimize the energy balance in the system and make sure that the TEG can be led back to the contactor at the required temperature of 35°C.

In the first and second quarter of 2013, Escher provided the basic engineering of the TEG Package and detailed engineering of the main components. The second and third quarter of 2013 were fully devoted to the manufacture and delivery of these components, the valves and instrumentation. The regeneration skid will be constructed and assembled during the period from September 2013 to February 2014. The contactor will be transported to the UK in late 2013. The regeneration skid and the TEG cooler skid will be transported to the UK in February 2014, and subsequently installed on the drilling platform.

