



OSPAR regulations

As 2006 approached, operators in the North Sea were faced with severe penalties under the pending OSPAR regulations which targeted operators with reducing the amount of oil they released into open water in the North Sea.

Wood Group was working with Amerada Hess on a sophisticated filtration system that would enable their Triton Floating, Production, Storage and Offloading (FPSO) vessel located in the North Sea to meet these pending regulations.

Space constraints and low NPSH

The project demanded ten high specification pumps to pump the produced water. These had to have a small enough footprint so that they could squeeze within the tight space constraints of the Triton vessel. The lack of decks also restricted the headroom available meaning that the pumps had to operate with a low Net Positive Suction Head (NPSH) leaving them prone to cavitation (where gas bubbles in the liquid rapidly collapse producing a shock wave) which can shorten the life expectancy of the impellers and other components.

In addition to these technical constraints, with a risk and reward prime contract in place, Wood Group required a tight 26-week delivery schedule to avoid the hefty penalties that would be levied if the operator did not meet the OSPAR deadline.

Drawing on their wealth of experience in delivering bespoke pumping solutions, Amarith were chosen by Wood Group as the only company able to meet the performance requirements within the space constraints, achieve the low NPSH and deliver all of this to the tight schedule demanded. ISO9001 was

a given and suppliers to Wood Group had to be registered with First Point Assessment Ltd, the oil and gas supply chain database used as the key tool by oil & gas purchasers to identify and select current and potential suppliers when awarding contracts or purchase orders.

Sophisticated hybrid design

To achieve the dimensional space constraints the Amarith design was a hybrid based on its proven 'C' series heavy duty ISO 5199 chemical pump, but incorporating up-rated API 610 bearing brackets.

The pumps were fitted with sophisticated 'upstream pumping' (USP) mechanical seals manufactured by John Crane that utilise seawater to provide a supply of cool, clean buffer fluid to the seal faces to ensure reliable operation on this abrasive media.

ATEX compliancy was achieved along with complete material traceability. The pumps were delivered with a comprehensive bespoke documentation set.



Significant reduction in oil released

On commissioning the pumps performed flawlessly enabling the filtration system to reduce the oil released from 40ppm to just 3ppm, which is below the new OSPAR regulations.

Amarinth has since been engaged in similar demanding projects in the North Sea with Maersk, ConocoPhillips and Shell.



Wood Group

Wood Group is a leading international energy services company, employing 20,000 people and operating from bases in 44 countries.

Wood Group has three businesses providing a range of engineering, production support, maintenance management, and industrial gas turbine overhaul and repair services to the oil & gas, and power generation industries worldwide.

It is among the global market leaders in deepwater engineering, offshore pipelines, artificial lift using electric submersible pumps, enhancement of oil & gas production in mature fields and the repair and overhaul of industrial gas turbines.



"The feedback about Amarith from the FPAL supplier performance was good and it's pleasing to hear that Amarith has taken on board the advice we offered as part of our supplier feedback and are continuing to improve. We would have no hesitation including Amarith in future projects."

Mr Graham Lund
Purchasing Manager

