An Ocean of Possibility

CALM Buoy
Orwell Offshore’s range of products includes a simple, cost effective Catenary Anchor Leg Moored (CALM) Buoy design for loading and offloading products. CALM Buoys are the most popular and widely-used type of offshore loading terminal, and have been installed for a wide range of applications, water depths and vessel sizes. When working with such an adaptable product, Orwell Offshore’s versatility allows us to enter the project with confidence and genuine conviction. We have all the required core skills in-house and ready to apply, giving you reassurance that the project is being handled seamlessly and coherently.

Technical data:
CALM Buoys are typically designed for water depths between 20-100 metres (although there are a few deep water cases), and are connected to a shore storage facility by means of a submarine pipeline. Typically, CALM terminals are used for the transfer of one product such as crude oil, however the design of the fluid swivels can handle several products simultaneously, including crude oil, refined petroleum, LPG and fresh water.

Key features:
• Slewing bearing that allows the turntable and tanker to freely weathervane
• Standard design for fast track delivery including industry standard components
• Easily accessible main bearing which can be fully maintained or replaced in a dry and open environment in case of damage

Key benefits:
• Reduced operating costs due to tugs not usually being required for berthing or un-berthing
• Tanker turnaround time of generally less than 24 hours
• Considerably lower cost than for a fixed-jetty facility
• Designed to comply with the rules and regulations of all leading classification societies and local authorities where applicable.
Orwell Offshore has a proven project portfolio which includes a CALM Buoy adapted for production in South East Asian waters. The design has been developed for an existing field in South East Asia – a region that experiences periodic extreme weather during monsoonal seasons.

The production buoy is developed to accommodate two 6” production risers and two control umbilicals with scope to connect additional lines. A six point mooring system anchors the buoy to the seabed and is designed to withstand sea states of up to 11m significant wave height.

The production buoy has an overall diameter of 20m, a hull depth of 7.5m, a swivel stack housing height of 10m and a design displacement of 833te. The swivel stack is designed to rotate on a 3m bearing which enables a tanker to connect to the buoy and freely weathervane 360º in seas of up to 3.5m significant wave height. The CALM buoy provides a readily accessible connection point to the subsea production system for marginal fields.
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