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Solstad offshore vessels converted

GIBDOCK | Solstad Offshore is redeploying two platform supply vessels as potable water and fuel oil carriers to service Brazil's offshore rig market for Petrobras, after completion of a major conversion project at Gibdock.

***Normand Trym* and *Normand Vibran* side by side**

The four week project saw the 2006-built *Normand Trym* (3,326 dwt) in drydock and the 2008-built *Normand Vibran* (3,376 dwt) alongside at the Gibraltar yard, in order that mud tanks on each 74m long by 16m wide UT755 LN vessel could be converted to store 1,500m^3 of fresh water storage, with other tanks converted for 800m^3 of fuel oil carriage.

This was said to be an extensive job in terms of planning and complexity, while limited access to tanks made welding challenging and restricted the number of men on board at any given time, dictating the pace of work.

As well as general steelwork, the job included installation of steel tank floors, which were prefabricated by Gibdock in order to minimize the need to weld in position. A 600 mm cofferdam arrangement needed to be built into the tank bottoms on both vessels to satisfy class requirements.

All converted tanks were blasted and coated, with a specialized 500 micron thick Sigma paint applied in a single operation. The job also saw the No:1A ballast water tank (Forepeak Tank) blasted and coated for carriage of fresh water.

According to Gibdock the modernization of existing pipe and valve work and the installation of new pipe work for fresh water carriage proved a demanding task as well, involving galvanization.

New criteria for floating offshore liquefied gas terminals

ABS | Classification society ABS has announced the release of its latest Guide for Floating Offshore Liquefied Gas Terminals, reflecting the latest structural design and analysis developments in gas handling, storage and transportation.

The new Guide provides criteria that can be applied to the classification of the hull structure of floating offshore liquefied gas terminals (FLGTs) with membrane tanks or independent prismatic tanks.

The newly released criteria from ABS addresses liquefied gas terminals with ship-shaped or barge-shaped hull forms, having single center cargo tanks or two cargo tanks abreast arranged along the centerline of the terminal's hull.

This new release is based on the design and analyses experience gained by the society from classing membrane tank LNG carriers, liquefied LNG and LPG gas carriers with independent tanks and FPSOs (Floating Production Storage and Offloading) .

Structural design challenges are being driven by the increase in the size of terminal hulls, shallow water load effects, frequent partial filling, offloading operations and critical interfaces between the hull and topside structure and between the hull and position mooring system.

FLGT concepts have broached the possibility of hull structures up to 450m in length and 70m in breadth, which would make them the largest ship-shaped units to be built. With the hull structure so large, designs with two cargo tanks abreast are being proposed to minimize the internal load effects, particularly from sloshing within the partially-filled tanks during loading and discharge operations.

The onsite environment is typically close to shore so shallow water effects, which can place more severe environmental loads on the hull structure than when it is in deeper water depth, need to be considered. Frequent partial tank filling is also an important factor in establishing adequate strength to resist the dynamic loads from sloshing.

Two other important considerations in the structural analysis include offloading operations and hull and topside interface. Offloading operations, either side-by-side or in tandem, have an impact on a floating terminal's response motions as the coupling effects and relative motions between the terminal's hull and offloading vessel must be taken into consideration. Analyses of the hull and topside interface are said to be critical as the size and weight of the topsides modules is significant.

To support the technical guidance it is now providing for FLGTs, ABS has developed proprietary software. The software provides calculations for evaluating structures considering buckling, yielding, ultimate strength and fatigue strength. Importantly, the floating terminal structural criteria takes into account low cycle fatigue which factors in the cyclic and more frequent loading and discharge nature of a floating terminal as compared to a trading LNG carrier.

ABS' evaluation of a floating gas project is based upon the application of prescriptive requirements, sea-keeping studies, structural strength and fatigue analysis, assessment of the containment system, including sloshing analyses and an evaluation of the station keeping systems. As applicable, ABS will review the topsides, the gas processing and liquefaction plants or the regasification modules and use advanced risk analysis to verify that accepted safety standards are attained.