Hi-Load, Introducing DP to Standard Tankers

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Abstract

Remora Technology offers the next generation of offshore loading systems, which is anchorless, remotely operated and able to dock onto standard tankers of opportunity of any size.

Together with ConocoPhillips, the HiLoad concept has been developed over the three last years for loading and discharging of oil at offshore locations. The HiLoad has been thoroughly engineered and model tested, and is ready for fabrication.

The HiLoad is a dynamically positioned Loading Terminal that will be able to connect to any standard tanker that has a relatively flat bottom. It will dock onto the tanker in a similar way that a forklift picks up a pallet by use of a ballast system installed in the unit. After connection, a high capacity friction attachment system is activated in order to transfer forces from HiLoad to the ship.

The HiLoad unit is equipped with three thrusters that will be used to keep the tanker in position during the offloading operation. The HiLoad is equipped with a DP system, allowing the tanker to weather vane, (i.e. no heading control) this enables the HiLoad to hold the tanker in position during offloading with limited thruster forces compared to standard DP tankers. This has been backed with numerical simulations and position keeping tests at Marintek, Norway in co-operation with Kongsberg Simrad.

HiLoad is particularly developed for Deep Water applications and requires no mooring lines to the seabed.

The paper explains briefly the HiLoad technology. Special emphasize is given to the position keeping philosophy for the HiLoad and explains results from model test and numerical simulations done at Marintek. This illustrates that we are able to keep position errors within required limits without excessive use of thruster force.

The HiLoad technology can also be used for other applications and developments are ongoing for HiLoad as LNG terminal and crude oil receiving terminal.