



MODEC Develops “MODEC NOAH™” and “M350™” Next Generation New Built FPSO Hulls

Tokyo, August 2, 2019 – MODEC, Inc. (“MODEC”) is pleased to announce that it has developed the “MODEC NOAH” and “M350”, next generation new built hulls for Floating Production Storage and Offloading (FPSO) vessels utilizing its extensive knowledge, experience and proven successes in engineering, construction, operations and maintenance of FPSOs as a leading company in this industry.

In recent years, large FPSOs have mainly been based on converting used Very Large Crude Carriers (VLCCs). However, as a result of increases in required crude oil and gas production capacities, the topsides have become bigger and heavier, which has led to insufficient deck space area and insufficient crude oil storage capacity. Additionally, the durations of the client contracts are increasing, thereby requiring longer FPSO design lives. Going forward it is expected that there will be a heightened demand for new built FPSO hulls.

In response to these demands from the market, MODEC joined forces with Mitsui E&S Shipbuilding Co., Ltd. (“Mitsui E&S Shipbuilding”) to develop a next generation new built hull for FPSOs called the “MODEC NOAH”.

The “MODEC NOAH” is based on a next generation hull design for FPSOs (called the “noah-FPSO Hull”, with “NOAH” standing for “New Offshore Adapted Hull”) that had already been developed by Mitsui E&S Shipbuilding, one of the most experienced companies that has engineered and constructed more than 2,000 vessels. However, the “MODEC NOAH” is MODEC’s own new hull design for FPSOs, and it was developed with the aim of achieving MODEC’s top priority of maximizing the lifecycle value that each FPSO can provide to clients and other stakeholders through their whole lifetime, more than 20 years from the start until the end of operations. Furthermore, MODEC has developed the “MODEC NOAH”, which seeks to overcome challenges that have constituted technical limitations in oil tanker conversion FPSOs. Key features of the “MODEC NOAH” are:

- (1) Adaptable to a wide range of shipyards around the world;
- (2) Large deck area to cope with the trend toward larger, heavier and more complex topsides;
- (3) Modular design concept, to accommodate a large variety of requirements for various FPSO projects, including various mooring configurations;
- (4) Standardization of fore/aft modules and the parallel-body module with adjustable lengths which can be separately constructed at different shipyards, thus significantly expanding the options for construction locations, as well as scheduling flexibility based on dock availability;
- (5) Strategic unique hull form consisting of flat or 2-dimensional bending plates, which can reduce construction costs while maintaining seakeeping properties and minimizing green water and slamming loads impact;
- (6) Adoption of a unique design of the hull which enables a machinery room volume, beneficial changes for the functionality of the piping, and an improvement in safety of the living quarters;
- (7) Adoption of a hull form that allows the storage tanks to be continuously inspected during stable ongoing operations by providing sufficient inspection accesses;
- (8) Work efficient layout for adequate maintenance activities required in the long-term operations; and
- (9) More comfortable living area for crewmembers that takes into account their working environment and living environment.

MODEC received Approval in Principle (AiP) for the design of “MODEC NOAH” from the American Bureau of Shipping (ABS) in March 2019, as well as from the Bureau Veritas (BV) and the DNV GL in May 2019.



MODEC NOAH

Furthermore, offshore oil and gas fields all differ depending on the region, in terms of the form of the crude oil or natural gas as well as environmental conditions such as water depth, waves, winds, currents and tides. The specifications of each FPSO need to match the project specific conditions, as well as the standards defined by the client.

MODEC has also developed a second next generation new built FPSO hull, the “M350”, which has received AiPs from the American Bureau of Shipping (ABS) and DNV GL. The “M350” has been jointly developed with Dalian Shipbuilding Industry Co., Ltd. (DSIC), a subsidiary of China Shipbuilding Industry Corporation (CSIC), with ultra-modern shipbuilding facilities and technologies.



M350

With two next generation new built FPSO hulls in MODEC’s portfolio, namely, “MODEC NOAH” and “M350”, MODEC is very well prepared to meet the new market demands for larger FPSOs.

In addition MODEC continues to offer FPSOs based on existing tanker conversions, depending on client requirements.

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The information contained in this news release is true and accurate at the time of publication; however, it may be subject to change without prior notice.