

Deepwater Direct Offloading System

Program

2010 Ultra-Deepwater Program

Project Number

10121-4407-01

Start Date

August 2012

Duration

15 Months

RPSEA Share

\$750,000

Cost Share

\$215,000

Prime Contractor

Remora Technology Inc.

Participants

ABS Consulting Inc.
Ecology & Environment Inc.
Peter M Lovie PE, LLC

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Reports and Publications

Research Objectives

The objective of Phase 1 of this project completed included verified, for U.S. deepwater operators, that the direct offloading system called the HiLoad DP met U.S. Gulf of Mexico (GOM) requirements to enable its functioning successfully for both steady-state state production situations as well as standby roles for emergency situations. The primary objective provided sufficient knowledge to proceed immediately with the final engineering and contracting process to make the HiLoad DP concept available to GOM operations. This project defined an alternative deepwater offloading solution that enables access to utilization of conventional standard tankers that are neither purpose built or fitted with any special means or equipment. The result of Phase 1 covered an adaptation of the current HiLoad DP prototype design to GOM requirements - taking operational elements, risk assessments, environmental and economic considerations into account. Upon the conclusion of Phase 1, Remora Technology Inc. fully reported to U.S. deepwater GOM operators for their further evaluation of utilization of the HiLoad DP offloading vessel in the GOM.

Background

Deepwater operators in the U.S. GOM have a need for deepwater direct offloading systems for multiple applications such as: (1) direct offloading from Floating Production Storage Offloading vessels (FPSO) of tanker (i.e., ship shape) and/or round configuration, in a steady-state production environment in ultra-deepwater (GOM), (2) to have the ability to offload liquid hydrocarbons from existing platforms that have been isolated by pipeline breaks such as occurred in the hurricanes of 2005, and (3) to load spilled oil from whatever source it may be collected, into a quickly available tanker for delivery to a U.S. GOM port. The restarting of offshore production in 2005 was made difficult by delays pertaining to the offloading issue and likewise the Macondo well blowout spill of 2010.

Approach

Remora Technology Inc. utilized previous experience and test results obtained throughout the 12 year long design and development period of the HiLoad DP prototype vessel, and the prototype's refitting for use offshore Brazil. The results from U.S. GOM specific simulations, model tests, draft design for US ports, hurricane strategies, economic and operational assessments, in conjunction with ongoing collaboration with U.S. GOM deepwater operators and industry experts has added significant value to this project. During execution of this project Remora Technology Inc. conducted 5 Working Group (WG) meetings and hosted a 2 day HiLoad DP Risk Assessment. The outcome and Industry contribution added experience and understanding of how the HiLoad DP solution could be further developed and implemented in the GOM.

Findings and Recommendations outside GOM

Ongoing work towards deepwater fields in Brazil have confirmed that implementation of a future generation HiLoad DP offloading vessel will increase overall offloading availability, significantly improve day-to-day operations, and at the same time increase safety in comparison to existing offloading solutions currently available on the market.

Future Plans

The next phase of this project is to release findings to industry and regulatory authorities. Interested operators can conduct detailed design and engineering of a HiLoad DP GOM vessel to enable bidding and construction as desired for individual needs.

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HiLoad DP GOM vessel