
Services Performed

IRC investigated thermal and blast ratings for two firewalls on the Blue Ocean ETLP. Topsides potential fire and explosion events were modeled using in-house tools and industry accepted software packages.

Objectives

- Assess the characteristics of fire events to determine jet and pool fire sizes, durations, and frequencies
- Assess the suitability, extent, and need for thermal and/or blast protection provided by firewalls based on release scenarios defined by the facility's isolatable inventories
- Provide input into the design to improve safety of the facility

Project Description

FloaTEC has initiated the Blue Ocean project to define, design and deliver an Extended Leg Tension Platform (ETLP) on speculation for the global deepwater market. The Blue Ocean ETLP is a "shelved" design intended for use in the Gulf of Mexico region. IRC was contracted to ensure that the design of firewalls on the ETLP met standards for thermal and blast protection for offshore platforms as defined by UKOOA and ABS.

Modeling of explosions was undertaken using the CFD simulator *CEBAM*. Thermal consequences were modeled using IRC's in-house tool *HEPHAESTUS* and the industry accepted consequence modeling software *CIRRUS*.

The study concluded that explosion and thermal consequences were low on the main deck, justifying a decreased level of protection for the Living Quarters. Due to a lack of ventilation on the lower decks, IRC recommended the use of explosion vents with a blast rated wall to protect personnel from credible fire and explosion events.



Key Benefits to Client

- The fire and explosion risk analysis performed by IRC provided input to the firewall design with no delay to the project
- The firewall design was determined to be suitable for installation of the facility anywhere in the intended deepwater Gulf of Mexico region