

Improvement of Fixed Offshore Structures' Boat Landing Performance Using Practicable Design Criteria

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Abstract : Boat landings on fixed offshore structure are designed to absorb the impact energy from the boats approaching the platform for crew transfer. As the size and speed of operating boats vary, the design and maintenance of the boat landings become more challenging. Different oil and gas operators adopting different design criteria for the boat landing design in the region of South East Asia. Rubber strip is used to increase the capacity of the boat landing in absorbing bigger impact energy. Recently, it has been reported that all the rubber strips peel off the boat landing frame within one to two years, and replacement is required to avoid puncturing of the boat's hull by the exposed sharp edges and bolts used to secure the rubber strip. The capacity of the boat landing in absorbing the impact energy is reduced after the failure of the rubber strip and results in failure of the steel members. The replacement of the rubber strip is costly as it requires a diving spread. The objective of this study is to propose the most practicable criteria to be adopted by oil and gas operators in the design of the boat landings in the region of South East Asia to improve the performance of the boat landing and assure safe operation and cheaper maintenance. This study explores the current design and maintenance challenges of boat landing and compares between the criteria adopted by different operators. In addition, this study explains the reasons behind the denting of many of the boat landing. It also evaluates the effect of grout and rubber strip in the capacity of the boat landing and jacket legs and highlight. Boat landing model and analysis using USFOS and SACS software are carried out and presented in this study considering different design criteria. This study proposes the most practicable criteria to be used in designing the boat landing in South East Asia region to save cost and achieve better performance, safe operation and less cost and maintenance.

Keywords : boat landing, grout, plastic hinge, rubber strip

Conference Title : ICMT 2017 : International Conference on Marine Technology

Conference Location : London, United Kingdom

Conference Dates : March 14-15, 2017