

# **“STRENGTH ANALYSIS OF DECK BARGE CONSTRUCTION IN THE LOADOUT PROCESS OF OFFSHORE BUILDING TYPE JACKET PLATFORM”**

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## ***ABSTRACT***

One of the critical fabrication processes of offshore buildings is the process of transferring the Topside structure from the top of the jetty to the transportation barge or often called the Loadout process. One of the analyses needed to ensure the loadout process runs smoothly and safely is an analysis of the strength of the barge deck construction when the loadout process occurs, namely where the strength of the barge deck construction is checked whether it is able to withstand the topside load during the load transfer from the top of the jetty to the top of the barge or from the edge of the barge to the final location. The last analysis carried out is a local analysis using ANSYS software on the barge area which is thought to be prone to failure during operation. Analysis is carried out 3 loadcases by calculating stress conditions, safety factors, and unity checks. The analysis results show that the maximum von misses stress in loadcase 1 is 145.56 N/mm<sup>2</sup> (UC = 0.78 < 1), loadcase 2 is 172.92 N/mm<sup>2</sup> (UC = 0.92 < 1), loadcase 3 is 119.18 N/mm<sup>2</sup> (UC = 0.64 < 1). Where all these stress values are still below the allowable stress or below the maximum limit required by AISC.

**Keywords:** Loadout, Topside, Barge.