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Abstract

Objectives/Scope: This paper is to highlight the cost effective and engineering & construction optimization for offshore installation campaign for platform A & B utilizing Jack-Up Rig (JUR) and sharing the lesson learnt of the technical challenges during work execution. Light Weight Structure (LWS) has become one alternatives and cost-effective solutions for marginal field and fit-for-purposes kind of offshore facility in the recent years in meeting tight budget for Final Investment Decision (FID).

Methods, Procedures, Process: A minimal facility design approach was selected for this project due to limited capability of the selected JUR and this had become the fundamental concept during designing the LWS. Overall project approached to utilized JUR as an installation method for the platform has had a significant impact in overall installation cost as well as early monetization of first oil/gas. Both projects were located at offshore Malaysia at water depth approximately 40m. Highlights of engineering & construction optimization included the applied concept of design one and built many where both platforms were identical in design and installed by the same JUR. Other construction optimization applied include the substructure that was design with integrated trunnion to assist upending process without the need of additional buoyancy module that led to reduction of weight and reduce installation complexity.

The installation work utilizing JUR had its own challenges and required closed monitoring throughout the entire phase of engineering, procurement, construction, installation and commissioning. Challenges during installation phase will be highlighted as part of sharing the lesson learnt and potential future improvement to drive the cost optimization and minimized complexity of offshore installation by JUR.

Results, Observations, Conclusions: These projects had become a use case for future improvement that may undertake similar approached in driving cost effectiveness and engineering & construction optimization for LWS installation using JUR. It is technically feasible to install LWS using JUR especially for marginal field development and fir-for-purpose designed facilities at suitable field.

Novell/Additive Information: This paper should be an interest for marginal field development utilizing "fit-for-purpose" design facilities.