

Study on the general layout of semi-submersible offshore drilling platforms based on process flow (PDF)

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Title: Study on the general layout of semi-submersible offshore drilling platforms based on process flow

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摘要: The general layout of 6th generation semi-submersible drilling platforms is the main factor impacting the efficiency of their drilling operations. This paper provides a compound/integrated algorithm based on process flow that is aimed at improving efficiency, while giving attention to stability and safety at the same time. The paper describes the process flow of dual drilling centers and a hierarchical division of rigs based on the different modes of transportation of various drilling support systems. The general layout-centripetal overall arrangement spatially was determined based on drilling efficiency. We derived our modules according to drilling functionality; the modules became our basic layout units. We applied different layout algorithm to mark out the upper and lower decks. That is, the upper deck was designed based on the lowest transportation cost while the lower deck's calculations were based on the best-fit scope. Storage configurations in columns and pontoons were also considered for the layout design. Finally the center of gravity was taken into consideration and the general layout was adjusted accordingly, to result in an optimal center of gravity. The methodology of the general layout can provide a reference for implementation of domestic designs of semi-submersible rigs.

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[上一篇/Previous Article](#)

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备注/Memo: -

