

FEM analysis of deepwater drilling risers under the operability and hang-off working conditions^(PDF)

《船舶与海洋工程学报》 [ISSN:1002-2848/CN:61-1400/f] 期数: 2009年02 页码: 156--162 栏目: 出版日期: 2009-06-25

Title: FEM analysis of deepwater drilling risers under the operability and hang-off working conditions

作者: -

Author(s): [DAI Wei1*](#); [GAO Feng1](#) and [BAI Yong1](#); 2

1. College of Shipbuilding Engineering, Harbin Engineering University, Harbin 150001, China 2. OPR Inc., Houston TX77079, USA

关键词: [drilling riser](#); [operability](#); [hang-off](#); [FEM analysis](#)

分类号: -

DOI: -

文献标识码: A

摘要:

In recent years, numerous exploration activities of oil and gas industry have been conducted in ultra deep water. The global offshore industry is building systems today for drilling in even deeper water, progressively using new technologies, and significantly extending existing technologies. This is the general trend in the offshore oil and gas industry. So the technology of ultra-deepwater risers, which is the main tool in drilling oil, is more and more standard. This paper manly focuses on the global analysis of the drilling risers. And it is divided into two parts, operability analysis and hang-off analysis that are used to check the design of the riser. In this paper, the rotation angle and stress of the riser in the drilling mode are calculated to determine the operability envelop. The number of the buoyancy modules has been determined and according to the API standard, all the worked out values have been checked out. From all the above, it is concluded that the operability envelop is relatively small under harsh condition and the number of the buoyancy modules is a little large. And above all, the design of this riser is successful.

参考文献/REFERENCES

- [1] BAI Yong, BAI Qiang. Subsea pipelines and risers[M]. Amsterdam: Elsevier Science Ltd, 2005.
- [2] American Petroleum Institute. API RP 16Q Recommended practice for design, selection, operation and maintenance of marine drilling riser system[S]. Washington, D C: API Publishing Services, 1993.
- [3] American Petroleum Institute. API RP 2RD Design of risers for floating production systems (FPSs) and tension-leg platforms (TLPs)[S]. Washington, D C: API Publishing Services, 1998.
- [4] GUESNON J, GAILLARD C, RICHARD F. Ultra deep water drilling riser design and relative technology[M]. Oil & Gas Science and Technology, 2002, 57: 39-57.
- [5] EBOKEN N F F, LIMA E C P, MOURELLE M M. Nonlinear transient motion of deep sea riser[J]. Offshore Engineering, 1986: 21-26.

备注/Memo: -

更新日期/Last Update: 2010-05-20

导航/NAVIGATE

[本期目录/Table of Contents](#)

[下一篇/Next Article](#)

[上一篇/Previous Article](#)

工具/TOOLS

[引用本文的文章/References](#)

[下载 PDF/Download PDF\(491KB\)](#)

[立即打印本文/Print Now](#)

[推荐给朋友/Recommend](#)

统计/STATISTICS

[摘要浏览/Viewed](#) 387

[全文下载/Downloads](#) 272

[评论/Comments](#)

