

Safety management of deep water station-keeping systems(PDF)

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Title: Safety management of deep water station-keeping systems

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摘要: Based on relevant in-service experience, this paper discusses how risks associated with station-keeping systems can be controlled through adequate design criteria, inspection, repair and maintenance practice, as well as quality assurance and control of the engineering processes. Particular focus must be placed on quantitative design for system robustness. The application of structural reliability analysis to quantify safety is briefly reviewed. In particular it was emphasized that reliability predictions based on normal uncertainties and variability yielded lower failure rates than those experienced for predictions of hulls and catenary mooring systems; gross errors in design, fabrication and operation were responsible. For this reason the broad safety management approach mentioned above was proposed. Moreover, it was found that this approach needed to be supported by a quantitative risk assessment. Finally, the challenges in dealing with the effects of human factors in risk management are outlined, along with means to deal with them in a qualitative manner, by the so-called barrier method to limit risk.

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