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OVERTURNING RELIABILITY ANALYSIS OF JACK-UP PLATFORMS USING SPREADSHEET

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ABSTRACT

In designing jack ups to resist environmental loading, decisions are made under a great deal of uncertainty that may lead to a finite risk of exceeding limit states of the structures. In order to minimize the risks, conventional safety factors based on deterministic analyses, are commonly used. This paper present a simple spreadsheet based reliability analysis for assessing the safety of independent leg jack up platforms subjected to the overturning effect of environmental loads. The intention is to develop and illustrate procedures that can be used by structural engineers to assign conditional probabilities of failure to jack ups as a function of environmental loads.