

عنوان مقاله:

Sensitivity Analysis of Selected Random Variables of Existing Offshore Jacket Structures in Persian Gulf

محل انتشار:

هفدهمین همایش صنایع دریایی (سال: 1394)

تعداد صفحات اصل مقاله: 10

نویسندگان:

,Mostafa Zeinoddini - Prof, K. N. Toosi University of Technology and TWI Persia

,Hamid Golpour - Structural Integrity Section, TWI Persia

,Hadi Khalili - Structural Integrity Section, TWI Persia

,Hamid Matin Nikoo - Structural Integrity Section, TWI Persia

خلاصه مقاله:

Structural integrity evaluation of an existing offshore platform typically is based on a combination of non-linear structural analysis together with risk and reliability analysis. Quantitative assessment of the probability of failure of a jacket platform under extreme metocean loads is a multi-disciplinary task, poses significant challenges and involves a large number of uncertainties regarding the metocean hazards, structural system and modelling, loads, material behaviour and geotechnical information. The probability of failure is commonly estimated using a reliability analysis to account for uncertainties in derivation of both the loading and the strength. Different sources of uncertainties contribute to the platform ultimate strength. Sensitivity analysis should be carried out to provide quantitative information necessary for classifying random variables according to their importance. These measures are essential for reliability-based service life prediction of deteriorating materials and structures. Accordingly, in this paper, Tornado approach has been used to identify those variables that affect the failure most so that more research can focus on those variables. To this end, six existing offshore platforms located in Persian Gulf are investigated. The results have been presented in the form of a Tornado diagram which will graphically show the sensitivity of the target function to each random variable.

کلمات کلیدی:

Structural integrity, Sensitivity analysis, Random variables, Existing offshore structures

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/474516>

