

عنوان مقاله:

The Effect of FPSO's Mooring System on Dynamic Response and Fatigue Life of Riser

محل انتشار:

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خلاصه مقاله:

The effects of mooring system selection (turret and spread) are investigated on dynamic performance and fatigue life of steel catenary riser (SCR) and lazy-wave steel catenary riser (LWSCR) as two of the most conventionally used flexible risers. The fully coupled hull, mooring, and riser models are simulated by finite element method under the same environmental conditions and floater specification. It was demonstrated that the changes in the mooring system from turret to spread have more influence on SCR than LWSCR in terms of the displacement range of the TDP, dynamic response, and maximum von-misses stress. The fatigue results of the two types of risers are considerably affected by mooring systems selection. According to the results, it can be inferred that the use of the turret mooring system increases the fatigue life of SCR while in LWSCR, the spread mooring system improves fatigue life.

کلمات کلیدی:

Turret/spread mooring, Catenary riser, Lazy-wave, FPSO, Mooring-riser interaction

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