HORIZONTAL DISTANCE EFFECT ANALYSIS IN SIDE BY SIDE CONFIGURATION BETWEEN FSRU AND LNGC DUE TO MOTION CHARACTERISTIC OF MULTIBODY AND COUPLING LINE TENSION

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ABSTRACT

The technology of LNG transfer between two floating vessels is a crucial component of FSRU operation. Side by side configuration of LNG transfer creates a gap (horizontal distance) between FSRU and LNGC body. This research has been carried out by investigating the influence of various horizontal distance between FSRU and LNGC towards its motion and coupling line tension. The horizontal distance based on operating criteria of loading arm issued by OCIMF : 2.5, 4, 6 and 8.5 meters. This paper will present a methodology of frequency domain to analyze multibody motion and time domain to analyze coupling line tension. Based on this research the variety of horizontal distance has no significant effect towards multibody motion by interval 1%. But it has significant effect towards the coupling line tension due to the heading of wave pressure working on its body. The oblique wave invents increasing the horizontal distance of length to the bigger load intensity of coupling line significant tension by interval 83 to 90% (line 4 of spring line) at steady state due to the increasing LNGC area impacted by wave pressure. And the beam wave influences decreasing of the horizontal distance towards the bigger load intensity of coupling line significant tension by interval 25 to 75% (line 7 of spring line) at steady state due to the wave diffraction impacted to LNGC area.

Keywords : Side by side, motion, coupling line tension