TITLE: - RISER SYSTEM AND ANALYSIS FOR FLOATER

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Abstract

At present, various types of riser system have been applied for floaters such as FPSO, FSO, FSU, etc. mainly for production lines as well as for water and gas injection lines. For shallow water applications, flexible riser with 'Lazy Wave', 'Lazy S' and Free Hanging Catenary (FHC) configurations are among the selected riser systems. For Deepwater applications, successfully deployed riser systems include the Steel Catenary Riser (SCR), the 'Lazy Wave' SCR, Flexible Riser and the Free Standing Hybrid (FSH) riser systems. In addition, there are also other viable riser concepts for floaters application such as the Tension Leg Riser (TLR) and the Hybrid Catenary Riser (HCR) systems.

In terms of riser analysis, the modelling of the riser in most riser analysis software is based on the Finite Element Method (FEM). All the characteristics of the riser as per the manufacturer datasheet form the input to the software. Standard conditions of the riser which are usually analysed is at 1) full of product flow, 2) full of seawater and 3) empty, in order to ensure the riser system is safe and sustainable along the full range of its operation. As a study case, the riser system analysis for FSU Nautica Muar and Tarpon WHP will be presented and elaborated in detail in this technical paper. All analysis were done using the DeepLines V4R4 software.