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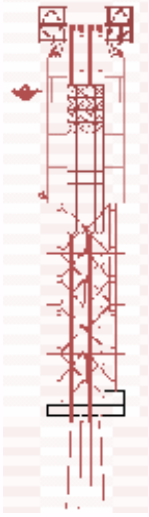
BP- Horn Mountain

CASE STUDY BP: Horn Mountain, Gulf of Mexico

Top Tension Riser Verification and Installation Analysis



The Horn Mountain Field is located 84 miles offshore in Mississippi Canyon Block 126 and 127 in a water depth of 5,423ft. This represents the deepest dry tree production riser installation as of 2002.

The Horn Mountain field is being developed with a Truss Spar-based production facility. The spar will have completion, sidetrack and workover capabilities in order to service the wells.

The 106ft x 555ft Truss Spar accommodates a wellbay with 14 production top tensioned riser (TTR) slots and 2 import steel catenary riser (SCR) well slots.

Tension for the risers is provided by air cans of 12ft outer diameter. Each air can has double chamber redundancy.

SOLUTION

- Verification of the TTR designs including VIV, fatigue and interference analysis.
- Dual casing riser tension factor selection
- Finite element modelling and analysis.
- Requirements for inner casing and pre-stretch and tubing slack off.
- Analysis results and tensioning distribution.
- Installation mechanism and procedures

RESULTS

- Determination of tension factors and tension distributions for a range of riser operating conditions including production, workover, completion, well kill and shut in.
- Appropriate elongations between casing and tubing were specified for the installation phase.
- Operating matrix provided for use as a basis to evaluate tension factor design and tension distributions within the risers.

If you would like more details, please contact us at Aberdeen@mcs.com

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