RIG ENGINEERING

Rig Engineering Case Study 2349

Prospect Handling Frame and Angel Wings

www.rig-engineering.com
Tel. (+44) 1224 627200

Rig Name: *Prospect*

Rig Type: *semi-submersible*

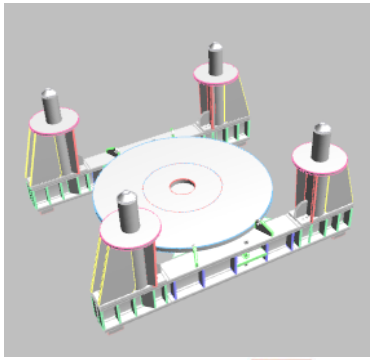
Owner name: *Transocean*

Classification Society: *DNV*

Pertinent code: *ASD*

Analyzed elements: *Nexen Tree Handling Skid Frame, Angel Wings Operation.*

Click below to see model 3D!



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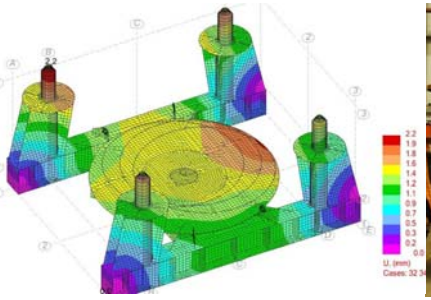
Project description: *To review existing BOP trolley and provide engineering, design and fabrication drawings to allow for Nexen Christmas Tree Running Operation. Existing capability of tree and BOP handling are to coexist and with least amount of alteration to allow for the vertical and horizontal tree running operations. For this project, existing trolley was sent in from offshore and the As Built has been measured and put in to CAD as starting off point. Then FEA model was made for subsequent stress state checking throughout the entire tree running and retrieving process including the accidental condition when the tree is supported while angel wings act as free cantilever with full dynamic amplification factor 0f 1.5G and 0.5G vertical and horizontal respectively. Recommendation and improvement to the system has been dispatched to enhance the functionality and ensure safe operations.*

Combined BOP / Christmas Tree Trolley

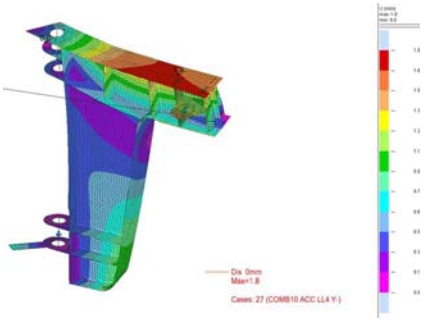


FEA Model

Befor Modification

After Modification

Angel Wings



Stress State During Operations

Before Modification

Added New Bracing

R.E. scope of work

Rig Engineering was tasked in assisting with following:

1) Accommodating Nexen tree, placed in offset position on the existing trolley.

2) Clash check with BOP carrier while running through carrier's opening.

3) Strength verification of angel wing in free cantilever mode (fork down) subject to accidental condition with tree in position.

4) Modify, strengthen trolley and angel wing where required.

5) Provide fabrication drawings for offshore and onshore implementation to allow for dual use of the existing BOP trolley.

The above jobs were initiated by NEXEN and the works were carried out via Transocean Inc. Team.

Engagement Condition

Upload your problem to us and give us relevant input to allow us to resolve your problem, we will need:

1. As built drawings to create 3D model.
2. Weight and COG of BOP components.
3. Environmental loads.

Key word: Rig Engineering, Nexen Tree Handling Skid Frame, Angle Wings Operation, BOP Handling.