



**Rig Name:** Prospect

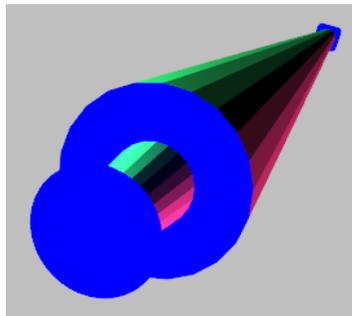
**Rig Type:** semi-submersible

**Owner name:** Transocean

**Classification Society:** DNV

**Code design:** ASD (WSD method)

**Click below to see model 3D!**



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**Project description:** Rig Engineering (RE) has been tasked by Transocean Inc. (TOI) to check capacity of existing mouse hole. The analysis approach is generally in accordance with the requirement of the DNV-OS-C201 Structural Design of Offshore Units (WSD Method), October 2008. Load criteria used for calculations and screening have been defined based on information supplied by the client.

### Existing Mouse hole in use



General appearance of existing mouse hole

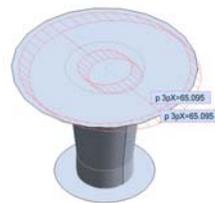


Bottom part of mouse hole

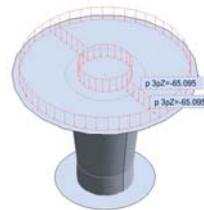


Deck hole

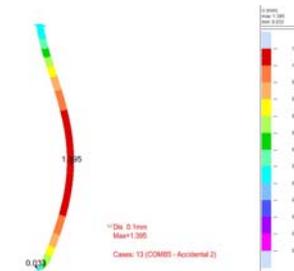
### FE Model and stress state visualization



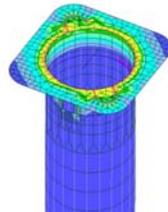
Loads applied to the bottom of mouse hole



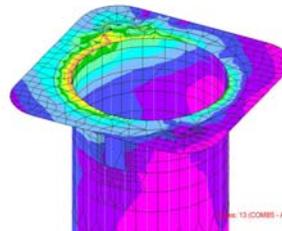
Cases: 3 (Live Load 1 -Z)



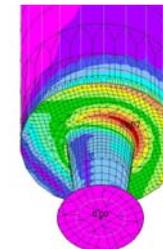
Deformation Plot (Accidental Condition with full Dynamic Amplification Factor DAF)



Cases: 9e11



Stress Plot



Cases: 13 (COMB1 - Accidental 2)

### **R.E. scope of work**

Step by step actions were done to establish the load carrying capacity of the existing mouse hole in current use. These are:

- A) From rig supplied photo, generate questionnaires to allow geometry and thickness of the construction to be drawn up.
- B) Built FEA structural model of the mouse hole based on the rig supplied information.
- C) Load the structural FEA model with various combination of tubular inside with particular emphasis placed on the concentric loading at the bottom of the disc at the mouse hole's end.
- D) Arrive and report at various loading limit.
- E) Provide recommended means to improve on the performance of the existing construction and issue fabrication drawings for offshore implementation.

### **Engagement Condition**

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

1. Dimensions of mouse hole and deck hole.
2. Drill collar number and length.

Key word: Mouse hole, Transocean, Rig Engineering, Drill collar, Case study.