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REANALYSIS OF OFFSHORE STRUCTURE

by :
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SUMMARY

The platform for the present offshore structure off the coast of Sarawak was designed for fifteen conductors. However, due to the increase in the demand for petroleum, an additional three conductors was required. This will make the total number of conductors to be eighteen. Due to the increase in the number of conductors, a reanalysis of the whole structure was needed to ascertain its integrity and strength.

In this report, the structure was reanalysed as a space frame structure. For the space frame structural analysis, a software called LUSAS was used. It is a general purpose finite element computer system designed to solve a comprehensive range of engineering problems. A general description of the software can be found in chapter 3.0.

CONTENTS :

1.0 Introduction

In this report, a reanalysis of an offshore super structure was done. A space frame method of analysis was used. The space frame method uses a software called LUSAS.

The re-analysis of the super structure is required for reasons of installation of three new conductors, additional to the fifteen conductors already allowed for, and subsequent consequences due to loads from the drilling rig, located above the new conductors. The three new conductors will be installed on the south side of the platforms adjacent to row 2. The offshore structure is given the name 'ABBY'.

1.1 Platform Description

Abby-A is an existing drilling platform, located in 230 ft waterdepth in the Baram Delta area, off the coast of Sarawak.

Location : N 1,651,200'

E 1,430,000'

Refer to figure 1.1.

Basically, the platform consists of a four-bay jacket with 8 jacket and 8 skirt piles of 42 inch diameter, supporting 2 decks (cellar and main deck) of overall dimension 131 ft x 52 ft. It is link connected to the production platform, ABB-A by a 150 ft long bridge.

The jacket supports 15 conductors, each of diameter 26", a boatlanding and risers.