CONFIDENTIAL CLIENT

Concept Study and FEED, Wellhead Platform Offshore Vietnam

ICON Engineering was engaged by a Vietnamese Energy Company to conduct a Concept Study and FEED for a wellhead platform (WHP). This wellhead platform design was planned for multiple future locations for the Company's future field development programme.

The work programme was divided into two distinct stages, namely:

1. WHP Concept Study; and
2. FEED

The Stage 1 Concept Study considered four alternative platform structural configurations. The four structural configurations were assessed with installation options of either a traditional heavy lift crane barge, or a jackup drilling rig.

The concept study's initial task was to define the facility's requirements and topsides extent for the WHP. Thereafter, the topsides size and weight were quantified.

The four WHP structural configurations that were comparatively reviewed included:

- Conductor Supported Platform - Multi Piece;
- Braced Monopod;
- Single-piece Vertical Jacket; and
- Traditional Battered-leg Jacket

These four WHP configurations as described above were ranked relative to the following criteria:

- Installation and Transportation;
- Drilling and Well Construction;
- Schedule;
- Platform Fabrication;
- Operations & HSE; and
- Total Installed Cost

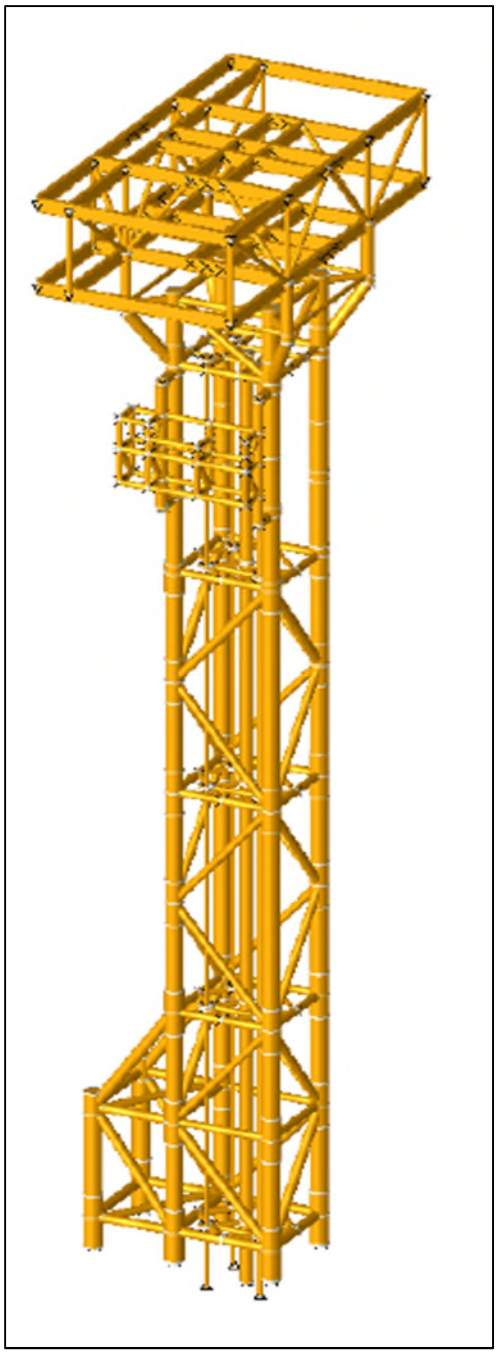
At completion of the Stage 1 Concept Study stage, the selected WHP configuration was the single-piece vertical jacket. (see figure).

Due to the extreme storm criteria, two outrigger piles were required in addition to the four jacket leg piles. The piles for the four jacket legs were the well conductors, resulting in significant cost savings.

The Stage 2 FEED stage was performed on the selected single-piece vertical jacket. The FEED was primarily focused on the structural design of the jacket, piles and topsides.

The FEED consisted of the following analyses:

- In-place analysis for extreme and operating conditions;
- Fatigue; and
- Boat impact



Selected WHP Configuration

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