CONFIDENTIAL CLIENT

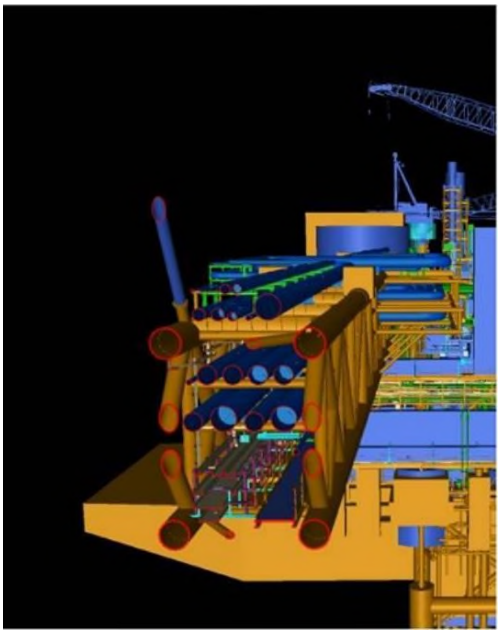
Carbon Capture and Storage (CCS) Platform Strengthening Study
Malaysia

In 2024, a Malaysian Energy Company commissioned ICON Engineering to conduct a Screening Study for the strengthening of a major gas Central Processing Platform (CPP). The platform is part of a wider complex, and is bridge connected to other platforms.

The CPP has a topsides operating weight in excess of 25,000 tonnes. The client wanted to study the impact of a containment management program, including Carbon Capture and Storage (CCS), on the CPP.

The containment management program required additional large diameter, high pressure piping to be routed on the CPP topsides. The additional weight of the piping was in the order of an additional 1,000 tonnes.

The objective of the Screening Study was to identify and evaluate possible structural support options for the platform to reduce stress levels in critical structural members.



CCS Feasibility Study Modelling

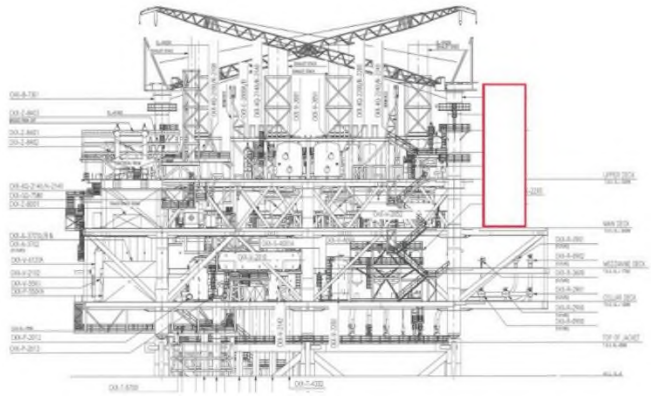
The support options (four major options) were developed and agreed with the client.

The client provided the existing SACS structural models for the CPP. Thereafter, for each of the options, the following work was undertaken:

- Structural analysis to assess the impact of the additional weight on the CPP;
- Construction methodology assessment; and
- Cost and schedule estimate.

Following completion of the above technical work, a qualitative comparative assessment was conducted to select the preferred solution. The qualitative assessment criteria included:

- Technical feasibility;
- Reserve load capacity;
- Fabrication complexity;
- Installation and transportation methodology;
- HSES considerations; and
- Future impact on operations, maintenance and decommissioning.



Details of the platform deck space

At the conclusion of the Screening Study a preferred structural option was selected. For the preferred option a forward work programme was defined and agreed with the client including:

- Site specific geotechnical data;
- Additional structural engineering - analysis and design;
- Detailed operations and HSES assessment;
- Construction engineering and planning;
- Detailed cost and schedule estimates; and
- Risk identification, analysis and mitigation.

Example of a CCS compression skid

Platform Data:

Water depth	Over 50m
Topsides Weight	Over 25,000 tonnes

ICON Engineering Pty Ltd
busdev@iconeng.com.au
Ph: +618 6313 5500