Offshore Conceptual Design

Deliverables

- Concept design
- Onshore processing plant
- Pipeline engineering
- Platform design
- E&I engineering
- Basis of design
- Equipment specification
- Project execution plan
- Contracting strategy
- Project schedule

Background

In 2010 Optimus carried out the conceptual design and project planning for the development of two offshore NUI minimum facility platforms at 65m and 83m depth. Optimus worked closely with Melrose to develop the concept in conjunction with the field development plan.

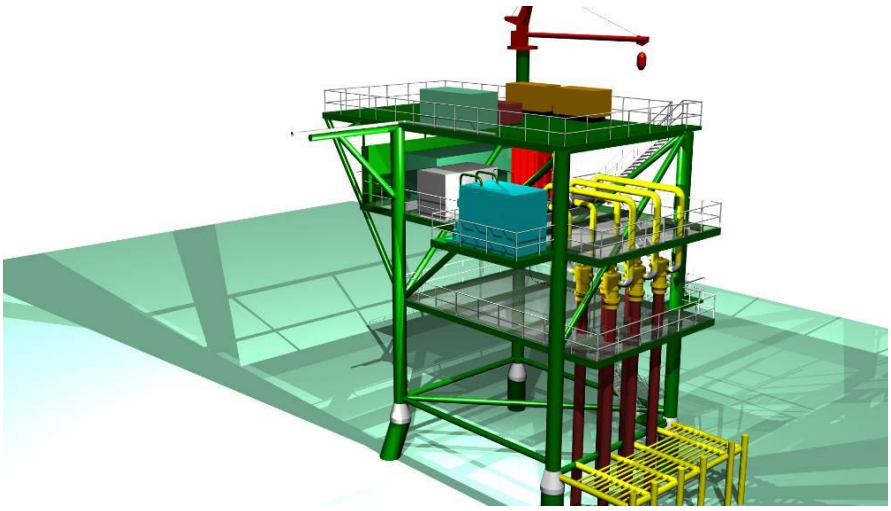
The project was split into the key packages, pipeline, onshore processing, offshore platform engineering to comprise a complete conceptual design and provide an accurate AFE and project schedule for the development. Optimus applied the fast-track project methodology to move swiftly from design to procurement, fabrication and offshore construction within the pertinent weather windows as well as within a budget that allowed the developments economics to remain strong.

Onshore Processing – The onshore processing design basis was developed to include inlet facilities, gas dehydration Liquids handling as well as a hydrates management system as well as fuel gas, venting and corrosion management system. The Galata Onshore Processing plant was taken as a starting point with Melrose envisaging a similar design for this project.

Pipeline Design – Optimus engaged with partners to provide the onshore and offshore pipeline definition. This included all sizing, assumed flow as well as materials and treatment specification for the pipelines.

Offshore platform engineering –

Optimus developed process, structural and facilities design for the minimum facilities 4-leg jacket designed for the inclusion of 20", 16" and 2" risers and 6 30" conductor slots. The platform facilities included the installation of a wind turbine and battery pack to provide enough power for the entire platform load. The water depth of the platforms was 68m and 82m.



Project Success –

The concept was accepted by all parties based on the fast-track model used by Optimus and Melrose on previous projects. The inclusion of the Melrose-preferred wind turbine power generation option was also developed for this concept. The concept formed part of the Melrose's field development plan used to declare commerciality of the project.

Multi-Discipline Engineering

Process - Concept and Front End study, through detail engineering to project and ops support
Safety and loss prevention - Industry experts each with more than 20 years experience
Structural - Conceptual, detailed and advanced analysis solutions for all structures, caissons and fabrications
Facilities - All disciplines including stress analysis, drafting, electrical, instrumentation and control, mechanical, piping
Business improvement - Facilitated decision-making, availability modelling, probabilistic cost and schedule risk and opportunity analysis for business and projects
Maintenance and operations support - Availability analysis and modelling
Commissioning - Engineers experienced in the commissioning of projects both on and offshore
Decommissioning - Preparation of decommissioning liability estimating, planning and management of decommissioning
Projects execution - Planning, scoping and management of brownfield and greenfield oil and gas projects
Manpower Resourcing - Provision of personnel for short and long term assignments

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