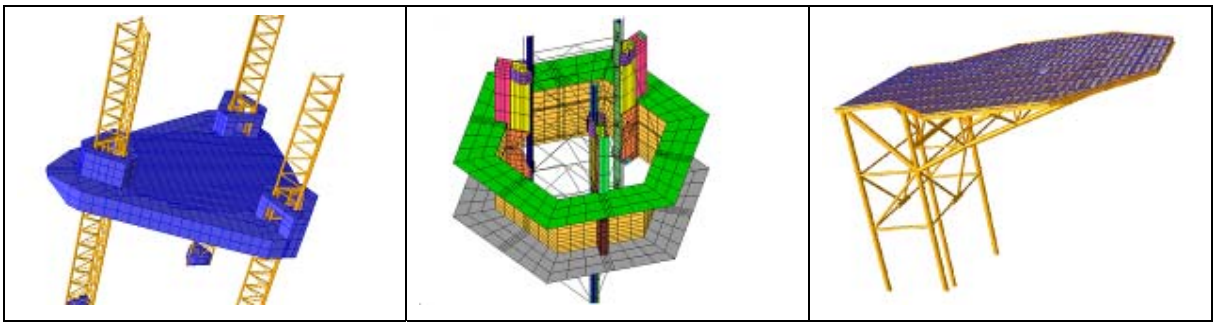
1. PROJECTS

1.1 Jack-Up Engineering



Jackup Rig Global Pearl

- Dynamic and static analysis of Jackup Rig Global Pearl: Feasibility analysis of upgrading the Global Pearl rig to meet enhanced operational performance covering all aspects required for classifying the modified rig under GL class requirements for the elevated and tow analysis for the rig upgrade study.
- Structural analysis of cantilever, drill floor, legs and derrick etc.

AD08-RIG

- Preparations of Nomograms for different Environmental conditions:
- Preparation of structural model of the rig stimulating all gravity loads and modifying the model to different water depths and analyzing the model for all possible combination of environmental factors in different water depths.
- Preparation of Marine Operations Manual (MOM) , a Class approved mandatory document

RIG-SAR-201

- Rig SAR-201 is Modeled & Analysed for Preparation of Nomograms for all possible water depths and environment conditions. The Maximum reaction on the leg due to different environmental combinations is tabulated and the allowable gravity loads for different environmental combinations are computed from the Nomograms prepared.
- Preparation of Marine Operations Manual (MOM)

Arab Drill 20 Jack Up Rig

- The fatigue analysis of the legs of the ARAB DRILL 20 JACK UP RIG for a water depth of 130 ft for a minimum fatigue life of 20 years. The assessments are performed for the field move condition and for the elevated condition for a number of hot spot locations in the leg structure

Rig ORIENTAL 1

- Preparation of Marine Operations Manual (MOM) due to change in mud pumps

Whisky Star 150 ft LiftBoat

- The WHISKEY STAR VII (WS-VII) is analysed in accordance with the latest ABS rules and report is generated for submission to ABS. The purpose of study was to estimate stress ratios in the legs for the elevated conditions, the jacking system components design loads and hull girder checks.
- The tow analysis of leg is carried for self weight of leg, wind and acceleration forces from the tow.

Kudeta 4305 Liftboat

- The WHISKEY STAR VII (WS-VII) is a three legged self-elevating self propelled mobile Lifeboat unit of steel construction, Analysis done in accordance with the latest ABS rules and report is generated for submission to ABS. The purpose of study was to estimate stress ratios in the legs for the elevated conditions, the jacking system components design loads and hull girder checks.

DOIL Rig

- To upgrade and convert Mat Type Jack-up rig "Shahid Modarress" (Bethlehem Yard). The rig is a BMC 200 design jack-up. The rig was stacked without class and the purpose of this design basis is to re-instate Class and operate the rig as a Cantilever Mat type Drilling rig for Royal Oyster intended for operations in Iranian waters.
- Crane Pedestal and foundation Analysis
- Design of ventilation system
- Work Scope Preparation for shipyard for quoting

NDC Rigs- Diyina, Al Yasat And Yemilah

- Feasibility study for Hitachi Rigs Diyina, Al Yasat and Yemilah on weight assessment and forces on legs after upgrade and report whether additional jacking gears are required
- Project involved modelling the rig in structural software, developing the environmental conditions & additional loads & prepare a detailed report according to the analysis conducted.

Adani barge

- Prepared a complete design package for the self elevating jack up platform (barge) intended for “Restricted services” in Coastal waters.
- Perform elevated analysis for changing operational parameters
- Preparation of Marine operation Manual

Pero Negro-4-Saipem

- Design, analysis, Class approval (RINA), detailed Engg drgs for new Raw Water Tower. Re-engineering (design, modeling, analysis, detailing) to modify, strengthen and comply with RINA/ ABS.
- Rules for Helideck.
- Barging analysis for repair of spud cans.

Rig Hercules 16

- Preparation of new Marine Operating Manual incorporating changes in operating procedures, parameters etc and obtaining ABS approval.
- Dropped object analysis on drill floor.
- Loading analysis and preparation of spread sheet for operations.
- Structural modifications, analysis on hull and deck members.
- Barging engineering

Rig Alvand (Iran)

- Complete survey and shipyard scope of work including detailed engineering study for the following
- Check existing Hull/ Legs/ Jackhouse
- Tow Suitability to Shipyard from existing site
- Stability
- Global Structural Analysis
- Leg strength for Tow

Rig Bima- Sea & Land Drilling Contractors (Brunei)

- Design, modeling, analysis, detailed engineering for upgrading Helideck structures for Sikorsky S 92
- Design of cantilever for increase in drilling envelope

KS Endeavor

- Flow diagrams and Isometric arrangement drawings for mud ditch flow lines, base oil line modification drawings, Drill floor airline modifications, fresh water and hot water lines for accommodation

SAR152

- Brake cooling line modification, Hydraulic lines for ST-80 and BPO units, modification on LP and HP mud lines.

RIG-"HAI YANG SHI YOU" FLOAT OFF OPERATION MANUAL

- The project covers the "Float off" operation of Jackup Rig " HAI YANG SHI YOU" proposed to be done at China. The Rig is Loaded on the Semisubmersible Heavy lift vessel "DEFU-2" initially, after securing the vessel by mooring at the Floatoff site the vessel is submerged to Float the Jackup Rig.The carrier vessel is submerged by using its inbuilt ballasting system.

Helideck Design for AD20

- Helideck is designed for operational and structural requirements for handling EC 155B1 type helicopter

Cantilever Design for Rig Global Pearl

- The cantilever is designed for increase in length . The push up and hold down structures are designed by finite element analysis.

FEA of JACK HOUSE for Rig Global Pearl

- The scope of the work is perform finite element analysis of the Jack house of Rig Global pearl and check the stresses in members are within the allowable limits as per DNV codes.

FEA of Spudcan for Rig Global Pearl

- The scope of the work is perform finite element analysis of the spudcan of Rig Global pearl and check the stresses in members are within the allowable limits as per DNV codes.

Structural Design Of Living Quarters Module-58 Man

- The 4 level quarters was modeled in SACs 5.2. Inplace, Lift, Transportation and Loadout analysis on the module was performed.

Structural Design Of Ler- Frade Fpso

- The 2 level Local Equipment room was modeled in SACs 5.2. DEC,DOC, TSC , Lift, Loadout and Preservice analysis on the module was performed.

Structural Design Of Ia/Ha Platform Topside

- The 4 level topside - Equipment room was modeled in SACs 5.2. Inplace and Preservice analysis was performed.

1.2 Platform Installations

MHN Project

MNP

- Launch analysis of 14000 t Jacket
- Evaluation of buoyancy connection load at different stages of installation like the loadout, transportation, launch and upending
- Ballast, stability and Longitudinal strength calculations for barge during launch
- Upending & floating analysis
- Fatigue analysis of chaser pile
- Pile drivability analysis
- Onbottom analysis
- Wet tow analysis

MLQ 2500 t jacket

- 3D Engineering Lift to evaluate the dynamic load on the crane
- Upending & Floatation analysis
- Mooring analysis of the Derrick barge
- Onbottom analysis
- Pile drivability analysis

MNF1 & MNF2 tripods

- Lift analysis
- 2-Block Upending analysis
- Onbottom analysis
- Pile drivability analysis

Atlantis Project

- Ballast, stability and Longitudinal strength calculations for barge during loadout.
- Tank assignment and pump requirements were provided.
- Ballast contingency (Ballasting through low tide and high tide cycle) for both cases.
- Intact, dynamic and damage stability calculations for the proposed tow taking into

account the stability criteria of MWS.
- Bollard Pull calculations was also provided.

Spirit Project (1998)

- Installation engineering for Shell Offshore's Spirit jacket in a water depth of 722 feet. this 9700 short ton structure was analyzed for structural loadout, transportation and launch (simulation and structural), and upend.
- Also performed a launch analysis in an environment, including wind, wave and current.

Salsa Project (1997)

- Installation engineering of the jacket in a water depth of 693 feet. The 10,200 short ton structure was, analyses included loadout, transportation, launch and upend, complete structural analysis and associated API code checks were also performed.
- Onsite forensic study to determine which flood valves failed during launch.

Virgo Project (1998)

- Installation engineering for the jacket in Viosca Knoll block 823 in the Gulf of Mexico (water depth 1130 feet). The analyses included launch, transportation, and upend. A stress analysis was performed for all installation procedures.

NIPPON OIL - Tecon – Helang Project (2001)

- Launch analysis from launch barge Saipem 45. Key points: Several configurations are checked (draft/trim of the barge, weights and CG for the jacket)

Dalia Development Project (2005)

- Launch analysis of the BTL offloading system from the CBL103 launch barge.

PREMIER PETROLEUM MYAMAIR Ltd – Tecon – Yetagun Field Development (1998)

- Launch analysis of jacket 'B'. Key points: 3 dimensional time domain analysis, trajectories, rocker arm loads.
- Structural analysis of Jacket 'B' during transportation. Key points: Spectral analysis, spectral code check of the jacket members, design of the sea-fastening and code check.

Cognac Project (1975-1979)

- Launch analysis engineering for the jacket in Mississippi Canyon block 194 in water depth of 1,025 feet.
- Designed the control system for the mating of sections.

TOTALFINA - Hyundai Heavy Industries – Bongkot 4-A Project (2009)

- Performed the launch and lowering analysis for the Bongkot 4-A field. Launch from the HB1006 launch barge. Jacket weight 44,882 K-nts.

- The jacket was designed to be near vertical position at the end of the launch. The launch analysis verified this; then the lowering sequence was designed to bring the jacket to a vertical position and lower it into place.

Eureka Project (1984)

- The planning and evaluation of the loadout, tow, and launch sequences for the jacket.

CABGOC Angola – Stolt Offshore – Sanha Condensate Project (2003)

- Upending Analysis of WPA jacket (2500 T). Key points: Define a scenario including controlled ballasting and lifting compatible with crane capacity and bottom clearance, define lifting load for detail design of lifting padayes.

- Upending Analysis of DPP jacket (3000 T)

APACHE Corp.- High Island 376-C Project (2008)

- Upend analysis of tripod jacket.
- Water depth 332 feet

- Jacket weight of 734 S-tons.

MAERSK Oil Qatar – Tecon – Al Shaheen field development Project (1997)

- Upending analyses of jackets 'BA' and 'CA'. Key points: Combined Lifting and ballasting of the structure, check of the stability at each event and minimum bottom clearance satisfied.

Indonesia – Bouygues Offshore – Peciko 3 Project

- Upending analysis of jacket SWP-G.Key points: Double lift.

Qatar – Tecon – Al Shaheen field development Project (1997)

- Docking analysis of jacket 'BA' from Castoro 8 vessel. Key points: impact force on the sea bottom pile due to the motion of the jacket/barge under wave load, maximum vertical motion of the jacket to insure minimum clearance.

AGIP A.R.C. – Tecon – Foukanda Field Development (2000)

- Docking analysis of jacket from Castoro 8 crane barge. Key points: Analysis done in two steps, first a time domain simulation is run considering the free hanged jacket, then at the time the velocity is maximum, the simulation is restarted and the pile connector made active. The first impact was considered.

CABGOC Angola – Stolt Offshore – Sanha Condensate Project (2003)

- Docking Analysis of WPA jacket (2500 T) from Polaris crane barge. Key points: Evaluate the forces on the conductor pile during mating operation.

Saipem - Sakhalin II Topsides Project (2004-2005)

- LUN-A and PAB decks transported and installed by SAIPEM by floatover method. At 28,000 tonnes, PA-B is one of the largest floatover installations ever. Key points: different types of connectors, wide range of stiffnesses, time domain simulation, impact loads & ballasting sequence.

WOODSIDE - North Rankin Project (2007)

- Floatover of NRB deck (23600 T) Key points: different types of connectors, wide range of stiffnesses, time domain simulation, impact loads & ballasting sequence.

QCON /Qatar Gas Flare

- Completed the engineering and rigging study for the installation of a 400 feet flare.
- Assisted in load testing arrangement and other modification works

BP- Holstein Truss Spar Project

- Spar upending and mooring. Topside mating. Prepared Ballast plan for load transfer.
- Launching, planning and analysis of launching a 600 ft. spar structure from a fabrication bulkhead.

Bengeula Belize Project

- Performed launch and transportation analysis of a compliant tower.

Lomba and Nemba Projects (1998)

- Transportation fatigue analysis of the decks and flares.

ENI CONGO – Tecon – Awa Paloukou development project (2007)

- Fatigue analysis of 4 legs 1600T jacket on top of Viking 6 cargo barge.during transportation. Key points: Flexibility of barge considered.

NNPC – Tecon – EAST AREA EPC2 Project (2004)

- Fatigue analysis of 3 decks loaded on the BOA VIKING cargo barge. Key points: Flexibility of the barge considered, as well as the influence of the loading of the decks.

MAERSK Oil & Gas As – Tecon – HALFDAN Project (2006)

- Fatigue analysis of several jackets and decks during transportation on cargo barges Giant 234 and Saipem 44 considered. Key points: Flexibility of the barges taken into account.

Bouygues Offshore – OSO/NGL Project (1997)

- Structural analysis of deck 'RX' (upper and lower sections) during transportation. Key points: Spectral analysis, spectral code check of the jacket members, design of the sea-fastening and code check.

MOBIL PRODUCING NIGERIA – Saipem SA – Yoho Development Project (2005)

- Piggy Back Tow on Blue Marlin/ Saipem 45 vessels of the YP deck. Key points: 3 bodies analysis. Structural check of the deck, considering the flexibility of the barge and the support vessel (Blue Marlin).

Eugene Island 361 platform.

- Analysis of the jacket and barge hydrodynamics and determining structural stresses during the salvage tow.

DEVON ENERGY - Corp BM-C-8 Campos Basin (2006)

- Transportation analysis of several pieces, including the 6462 kip deck, of the topsides on the Lanai barge

SHELL - Enchilada Platform Project.

- This involved a transportation analysis and several unique procedures during installation. The installation analysis included docking of the base section over pre-drilled wells, and mating of the top section with the base section.
- Two crane uprighting procedure was designed.

TEXACO - Harvest jacket Project

- Analysis to identify and suppress vortex shedding sensitive elements in the Texaco Harvest jacket for a trans-Pacific tow.

TTS International, Dubai

- Loadout engineering for all their loadouts – ballast calculations, heavy lift engineering, rigging study, towage approval including stability and bollard pull calculations. Nearly 50 loadout operations done till date

SBM MOPUSTOR Project (2008-2009)

- Find a working installation method for acceptable environment criteria for the connection of the MOPUSTOR jackup onto the gravity base. Simulation involving contact gap connectors, analysis of impact loads.
- Load out of MOPUSTOR Module on two barges side by side. Documents covering Engineering aspects such as ballast calculations, stability checks, and longitudinal strength of the barge and analysis for loadout, mooring, towing during the loadout were provided.

AGIP A.R.C. – Bos Congo – Foukanda & Mwafi field development (2001)

- Loadout of the 2 jackets on top of CB931 cargo barge. Key points: Ballast operation considering tide and pump capacities

SHELL - Perdido Project – Alaminos Canyon Block 857 in the Gulf of Mexico (2007-2009)

- Designed ballast sequence for topside loadout, weight 9900 s-tons. Work included longitudinal strength and use of a tappered skidbeam.
- Designed a real-time monitoring system to verify the fixed ballast installation.

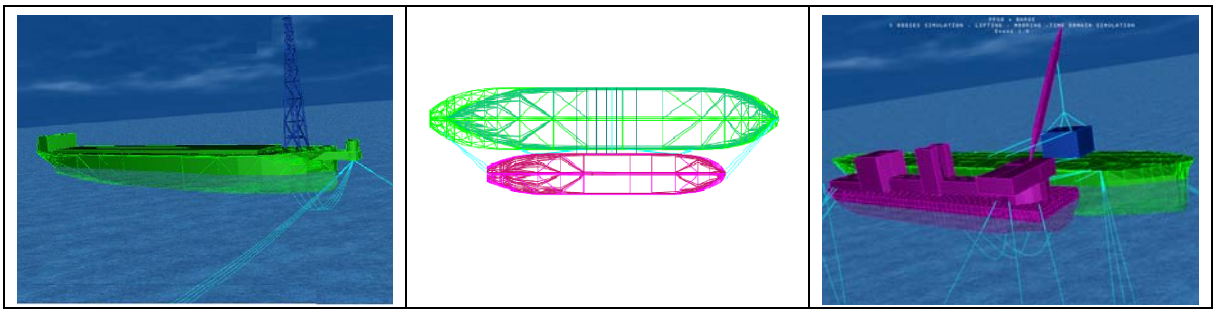
Service Marine Industries.

- Float-off operation design and analysis of a floating casino vessel from a launch barge.

Offshore Oil Marine Engineering Co (2009)

- Analyze the float-off of 200ft Jack-up Rig.
- This study used gap elements to connect the two bodies, and included a complete ballasting procedure and stability check for each stage of the float-off.

1.3 Mooring & Motion Analysis



SBM IMODCO – Saipem SA – Kuito 2 Upgrade Project (2002)

- Mooring analysis of several barges alongside the FPSO Kuito: check the adequacy mooring pattern, help designing the gangway structure. Barges considered are Castoro8, Bos230, Ayang2. Time domain simulations.

Sofresid – Yadana Project (2003)

- Mooring analysis of a supply boat connected to the leg of the jacket WP-3. Key points: damaged line, transient conditions.

Angola – Dande Jetty Project (2008)

- Dynamic berthing analysis of barge SB1 moored along the Dande Jetty. Key points: Mooring lines combined with taut hawsers, offsets issues.

Star Gulf – Azeri Project Phase 2 (2005)

- Mooring analysis of barge STB1 loaded with EA-PDQ jacket during several phases of the loadout and standby conditions. Key points: Catenary mooring lines combined with taut lines connected to the quay, Wind loads only.

Saipem SA – ERHA FPSO (2003, 2005)

- Mooring analysis of several barges alongside the FPSO. Key points: Time domain, hawser tensions, offsets.

Overdick – Trent Compression Platform Project (2005)

- Stability and Motion analysis of the floating unit. Key points: 9m diameter suctions cans located at the bottom of each of the 4 legs, added mass issues.

Saipem SA – Kizomba A & B Projects (2003-2004)

- Motion and Stability analyses for barges loaded with different kind of material during tow from the yard to the field. 30 Transportation analyses were done.

Angola – Saibos – Rosa Surf Project (2006)

- Motion and Stability analyses for barges loaded with different kind of material during tow from the yard to the field. 11 transportation analyses were done.

Akpo Field Development Project (2006)

- Motion and Stability analyses for barges loaded with different kind of material during tow from the yard to the field. 20 transportation analyses were done.

Mardyck Field (2002)

- Motion & Stability analysis during transportation of wind turbines on top of JUP111 barge.

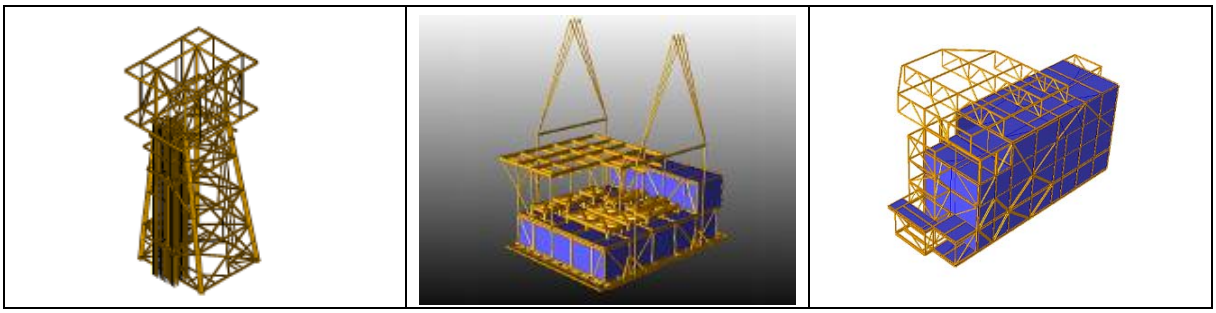
NPCC (2009)

- Modeling of DLB-1000 vessel. RAO calculations of free floating vessel. Key points: large number of configuration cases, 200 (water depth, draft trim) .

Stolt Offshore – Scarab/Saffron Development project (2002)

- Stability analysis of floating PLEM caisson (19 x 17 x 3.5 m). Key points: Internal pressure in the 9 cells is considered and adjusted.

1.4 Inplace Analysis of Floating and Fixed structures



BV offshore Jacket Design Verification

- . Green Palm Marine Consultancy on behalf of Bureau Veritas has done the independent design verification of the 18 jacket platforms in GTStrudl (fatigue, seismic and inplace analyses).

SS Erawan

- An inplace, transportation, lifting and skidding analysis was performed for a 50 man living quarters.

Girasol FPSO (1998, 2003)

- Global stress analysis of the hull, grillage and modules considered as a whole during under operational conditions. Shimming of the grillage.
- Rosalirio project. Stress analysis for the additional modules linked to the RosaLirio project

SS IA,HA Topsides

- In-service analysis (Operating and Storm conditions).
- Pre-service analysis (Lift and Transportation analysis).
- Blast checks for wall, Dropped object study on Level 2 and Level 4.
- Deck plate and secondary design.
- Joint design.

Specialist Services –CONOCO-PHILIPS 58 Man Accommodation Module Design

- An inplace, lifting and transportation analysis was performed for a 50 man living quarters.
- Detailed drawing for the module.

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LER Module Design –CCTC –SBM-CHEVRON

- An inplace, lifting and transportation and was performed for an accommodation module.
- Detailed drawing for the module

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ERHA FPSO (2003, 2005)

- Modeling of the ERHA FPSO. Hydro-structure model suitable for fatigue analysis of the 21 topsides.

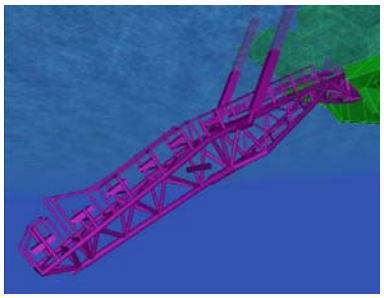
Lufeng 13-1

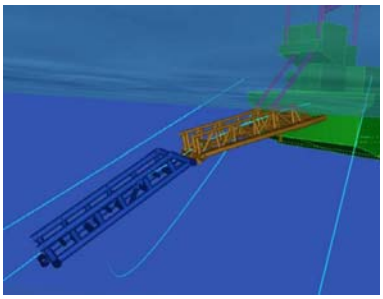
- Performed inplace, fatigue, loadout, launch, and transportation of a 496 ft. water depth jacket for the South China Sea.

Trent Compression Platform Project (2005)

- Lift analysis of the buoyant hull of the jackup by means of lifting slings connected to the top of the jacket legs. Key points: 50 environment conditions are studied, 2 topside weights and 3 different load transfer phases are considered.

1.5 Subsea & Pipe Laying





Ramboll Oil & Gas – Maydan Field (1996)

- Check of dynamic amplification due to wave on the stinger and pipe – frequency domain.

SAIPEM SA, CPC project (2000)

- Pipelaying analysis of 42” pipe from BOS355 barge in 60 m water depth.
- Key points :S-Laying,Time domain analysis, stress in the pipe, mooring configuration.

SAIPEM SA (1997)

- Parametric study. J-Laying, several depths, several pipe diameters.

SAIPEM ASIA - Shah Deniz2 Project (2009)

- Dynamic pipelaying analysis considering an articulated 2 segments stinger, for a 16" pipe in almost 600 m waterdepth. Key points: pipe stress, allowable sea states for the mooring configuration and reactions at the stinger hinges.

VALENTINE MARITIME (2008)

- Abudhabi, 16 inch pipeline repair project. Mooring arrangement of OM1 barge. 16" pipeline with the Ocean Maintainer I Barge.

Neptune Export Laterals Project.

- Technical and design support for the design, fabrication and installation, as well as design verification for the two 20" Oil and 12" Gas export lateral SCRs and Pipelines.
- The SCRs will be connected to the Neptune SeaStar TLP located in GC 613 in 4400 ft water depth. The length of the pipelines is approximately 23 miles.

STOLT OFFSHORE - NSP Project (2006)

- New Stinger Polaris, Motion Analysis during a pipe lying operation.
- Load induced by the motions to the cable system connecting the stringer to the barge.

BG Exploration & Production India

- Mooring pattern during laying of the 20" Export Gas Pipeline and the 20" Infield Gas Pipeline with the Global's Derrick Lay Barge.

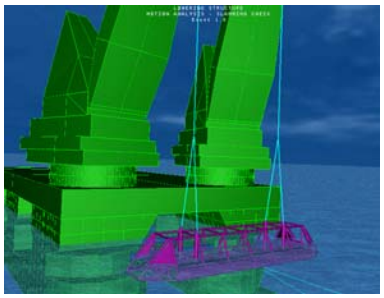
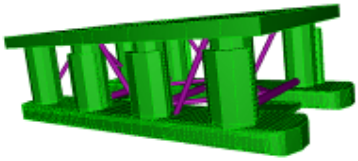
Shenzi Field Development Project.

- Technical and design oversight, fabrication and installation support for the Shenzi field development in general and the 2x8inch and 2x10-inch production, 2x6-inchgas lift SCRs and their flowlines segments in particular.

Genghis Khan Project.

- Technical and design oversight, procurement and installation support and execution of all elements of the Genghis Khan subsea tie back dual 6.625" flowlines and SCRs with wet insulation to the Marco Polo TLP in GC 608 in 4300 ft water depth.

1.6 Feasibility Studies


Combined Tender And Deep Water Floating Drilling Barge Concept Design – For Indonesian Waters

- Basic Layout
- Mooring Analysis
- Stability Analysis
- Structural Analysis
- Complete Specifications And Basic Design Concept Development

ABK - SBM Buoy Removal

- Engineering study (modelling and simulation) for a commercially viable solution using ballasting and crane for removal of a decommissioned buoy for Total ABK, Abu Dhabi.

IPM IRAN FPSO - Mooring Study

- Feasibility study for FPSO mooring in different configurations for different tanker sizes. Both spread moored system and turret system are analyzed to find suitable solution for the field development project.

NDC Rig

- Feasibility study for Hitachi Rigs Diyina, Al Yasat and Yemilah on weight assessment and forces on legs after upgrade and report the same.
- Requirement of additional jacking gears were also given. Project involved modelling the rig in structural software, developing the environmental conditions & additional.

Halter Marine

- Dynamic launch study of a Roll-on/Roll-off passenger vessel launched from a shipyard for Halter Marine.

AGIP GAS – Western Libya Gas Project (2004)

- Feasibility study of Lowering of a Protection Structure Manifold from different vessels. Final vessel S7000. Key points: Time domain simulations, Large depth, slamming forces tension, added masses.

ABB SOIMI – Tecon – FPSO Mooring analysis (1999)

- Mooring analysis. Key points: Feasibility study of spread moored tanker. Shape derived from Ultramarine's library.

AGIP KCO – Bos Shelf – Sunkar Drilling Rig (2006)

- Feasibility Launch analysis of the Sunkar drilling rig unit. Key points: the pontoon is launched from the quay. The rocker-arms are sliding units. Motions, velocities, accelerations at various points, bottom clearance check, skidway reactions.