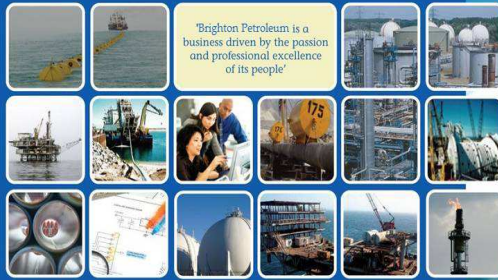
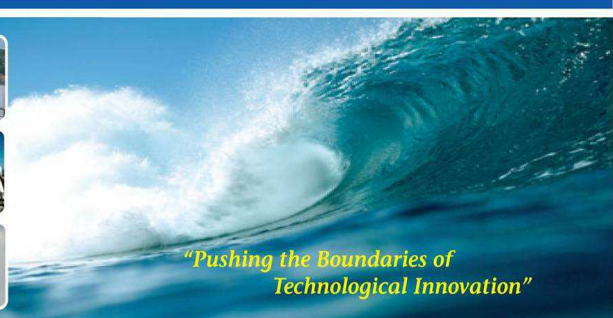


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OFFSHORE SYSTEMS

PROJECT NAME : Bunga-Kekwa C Platform Project
BUSINESS AREA : Offshore System
CATEGORY : Offshore LWS Platform
SCOPE : Conceptual Design

CLIENT : Talisman Energy
ROLE : Engineering Design Contac.
DURATION : 6-Months
YEAR : 2010

PROJECT DESCRIPTION :

The Bunga Kekwa-C Platform is located in Block PM3 South China Sea, offshore Terengganu, Malaysia. The facilities are designed for a production capacity of 20,000 b/d of oil in 55m Water Depth, which include:

- 6 slot Bunga Kekwa-C Wellhead Platform (WHP).
- Time charter of a Floating Production, Storage and Offloading (FPSO) system.

Brighton Petroleum was contracted to perform the Conceptual Design based on a Light Weight minimal facilities platform.

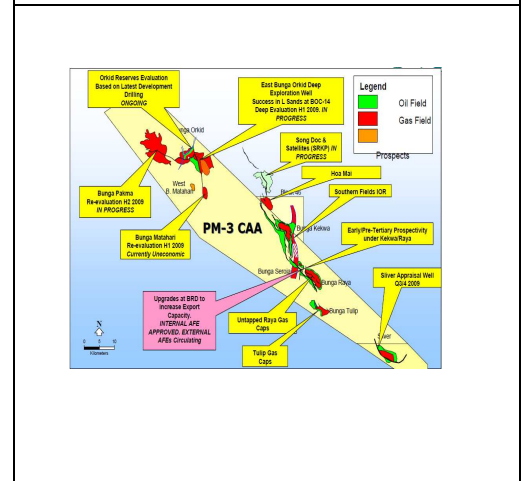
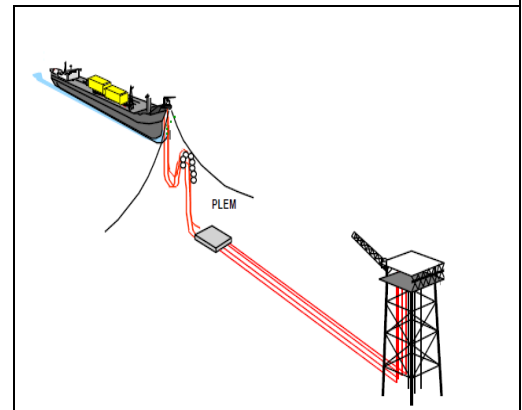
SCOPE OF WORK :

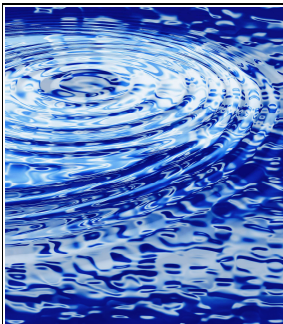
The SOW comprise of conceptual design of the Bunga Kekwa-C platform

- Preparation of concept design briefs including technical studies and analysis; drawings, and other engineering documentation as required to enable completion of the works related to topsides and sub-structure
- Project Controlling / Corresponding
- Interface Management
- Survey Supervising

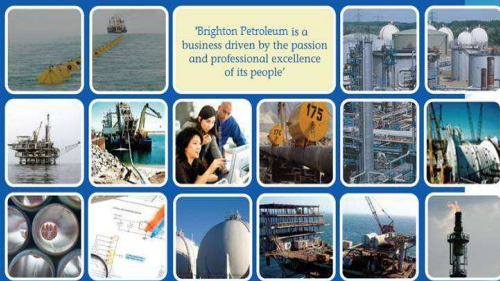
KEY ACHIEVEMENT :

- No HSE or technical integrity issues
- On budget and on time
- Major Cost savings on Procurement, Fabrication and Installation
- First Oil Achievable before expectation.

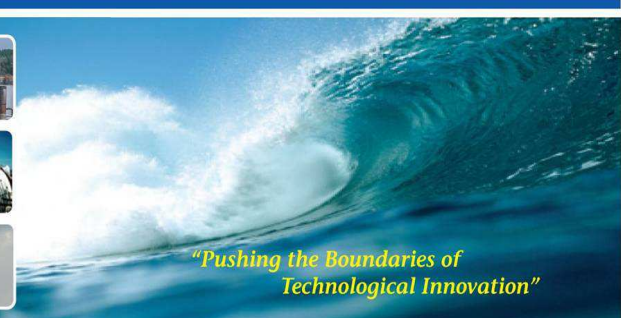




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OFFSHORE SYSTEMS

PROJECT NAME	: Bumi, Bulan and Suriya Gas Development Proj.	CLIENT	: CARIGALI HESS
BUSINESS AREA	: Subsea & Offshore Technology	ROLE	: Main Engineering Contractor
CATEGORY	: Offshore Pipeline System	DURATION	: 8-Months
SCOPE	: Detailed Engineering Design	YEAR	: 2007

PROJECT DESCRIPTION :

The Bumi, Bulan and Suriya gas fields, located in the Malaysia-Thailand Joint Development Area (MTJDA), is being planned to be developed by Carigali Hess Operating Company Sdn Bhd (Carigali Hess).

The base case field development consists of three new well head platforms (WHP), namely Bumi A (BMA), Suriya A (SYA) and Bulan A (BLA). The fields are located in Block A-18, approximately 150 km NE of Kota Bharu and approximately 100 km South of the Bangkok field in approximately 60m of water depth in the Malaysia-Thailand Joint Development Area.

Development of Bumi, Bulan and Suriya gas fields is planned to supply an additional 400 mmscfd sales gas for export. Gas from these fields will be delivered via sub-sea pipelines to Cakerawala Riser Platform (CKR). Additional gas treatment facilities will be installed on Cakerawala Processing Platform (CKP). Additional gas compression facilities will be provided on CKR.

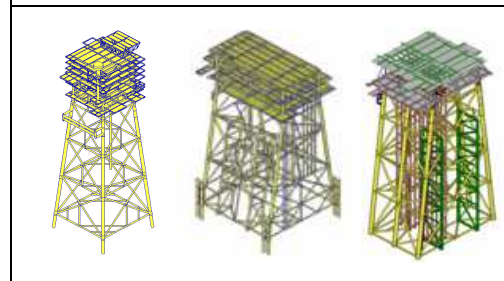
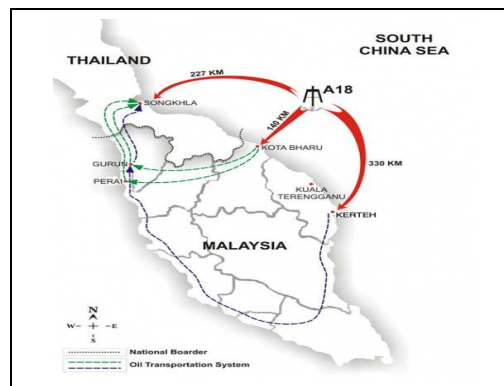
SCOPE OF WORK :

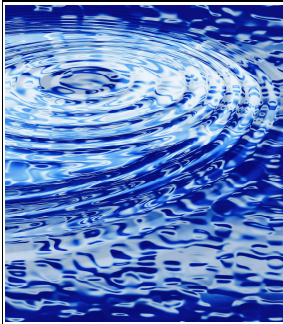
The SOW comprise of detailed design of three wellhead platform namely BMA-A, SYA-A and BLA-A and associated infield cladded HP/HT pipelines ranging from 20" to 26" in size:

- Detail design by preparation of Technical documents including Reports, Technical Notes and analysis, drawings, data sheets, specifications, requisitions and other engineering documentation as required enabling completion of the works.

KEY ACHIEVEMENT :

- Zero Lost Time Injury
- HPHT Pipeline
- Lateral Buckling Assessment & Mitigation

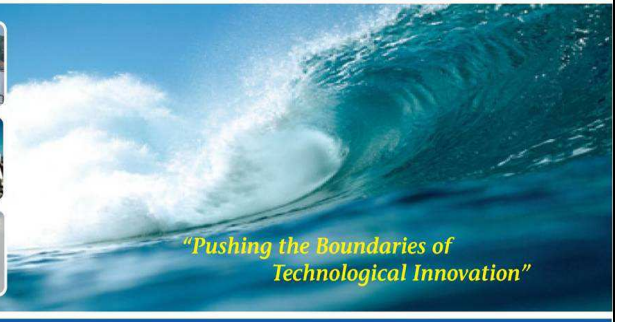




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OFFSHORE SYSTEMS

PROJECT NAME : LNG Floating Terminal West Java Development
BUSINESS AREA : Onshore System & Subsea Systems
CATEGORY : Onshore Process Plant & Subsea Pipeline
SCOPE : Detailed Engineering Design

CLIENT : Gas Negara
ROLE : Engineering Consultant
DURATION : 9-Months
YEAR : 2009

PROJECT DESCRIPTION :

PGN the Vendor for the sale of gas embarked to development the LNG Floating Storage and Re-gasification Terminal (FSRT), subsea gas pipeline and Onshore Receiving Facility ("ORF") facilities at the receiving point at Muara Karang power plant site in North Jakarta.

The FSRT facility provides a reliable/alternative source of gas supply to fulfill gas requirement for Power Plants and Gas Distribution Grid in Jakarta and West Java. The capacity of the Floating Terminal is designed to be 3.0 MTPA with a maximum peak rating of 500MMscfd, and the gas will be supplied from the receiving point in Muara Karang.

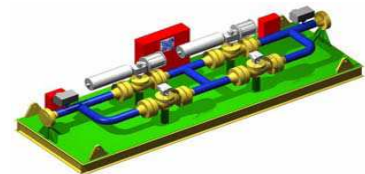
SCOPE OF WORK :

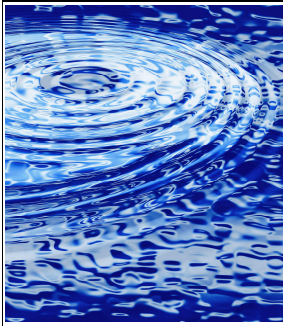
Detailed Design Engineering Scope of Work carried out is applicable to the Pipeline and ORF described as follows:

- **Subsea Pipeline**
 - 24-Inch x 14km Subsea Gas Pipeline From FSRU to ORF
- **Onshore Receiving Facility (ORF)**
 - Pig Receiver
 - 2 x 100% Filters
 - 2 x 100% Pressure let down station
 - 2 x 100% Sales Gas Metering System
 - Cold Vent
 - Instrument Air system
 - Potable Water system
 - Control and metering station room
 - Telecommunication
 - Fire & Gas detection and Firefighting equipment
 - ESD System

KEY ACHIEVEMENT :

- No HSE or technical integrity issues
- Minimal changes to scope and schedule
- No surprises or unplanned events
- First Gas on schedule for September 2011





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OFFSHORE SYSTEMS

PROJECT NAME : Tanot Gas Gathering Proj.
BUSINESS AREA : Onshore systems
CATEGORY : Gas Gathering Systems
SCOPE : Conceptual Design & FEED

CLIENT : Jodhpur
ROLE : Engineering Consultant
DURATION : 14-Months
YEAR : 2005

PROJECT DESCRIPTION :

The Tanot Gas condensate fields are located in Block 2767-1 in Western Rajasthan India, and 120km from Jaisalmer township.

Gas was discovered by exploration well, in 2003. The structure was identified based on the 254 line-km 2D seismic data acquired during the initial exploration phase and detailed G&G evaluation.

An appraisal well, drilled in 2005 encountered 30m and 32m of net hydrocarbon bearing sand in two Formations and flowed 8.2-19.6 MMSCFD gas, 2090-2940 STBD condensate and 316-662 STBD water. Based on the static model, Tanot Field is estimated to contain Gas-Initially-In-Place of 737 BSCF.

SCOPE OF WORK :

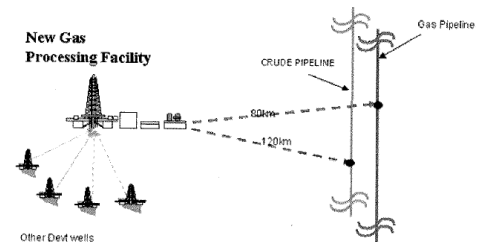
Detailed Design Engineering Scope of Work carried out is applicable to the GPF and Onshore Pipeline described as follows:

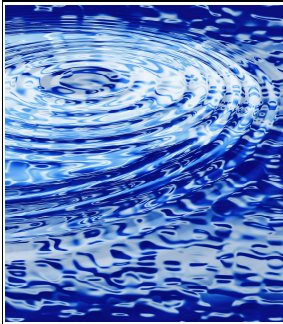
- **Gas Processing Facility (GPF)**
 - Sour Gas Treating Unit
 - Hydrocarbon Dew Point Control Unit
 - Test Separators
 - Condensate Stabilization Unit
 - Export Compressor and Pumps
- **Onshore Pipelines**
 - 4 x 8-inch Multiphase Gathering Lines
 - 1 x 8-inch x 80km Condensate Export Pipeline
 - 1 x 16-inch x 120km Gas Export Pipeline



KEY ACHIEVEMENT :

- Zero Lost Time Injury

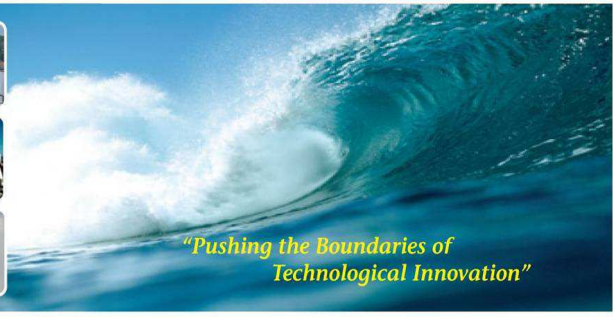




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OFFSHORE SYSTEMS

PROJECT NAME : PC4 HP/HT Subsea Pipeline
BUSINESS AREA : Subsea & Offshore Technology
CATEGORY : Offshore Pipeline System
SCOPE : Conceptual, FEED & Detailed Eng Design

CLIENT : PCSB/SHELL
ROLE : Main Engineering Contractor
DURATION : 18-Months
YEAR : 2006

PROJECT DESCRIPTION :

PETRONAS Carigali Sdn Bhd (CARIGALI) and Shell is undertaking the development of PC4 field which is located approximately 148 km offshore Bintulu at a water depth of 79 meters in block SK310.

Production from PC4 field is very crucial to uplift the shortage of gas supply to MLNG of 220mmscf/d expected in year 2008 and 2009. Gas production from PC4 will be tie back to B11 hub via a 12" pipeline for a distance of 25 km. The gas will be custody metered prior to going into B11 processing facilities. B11 is jointly owned by (Sarawak Shell Bhd) SSB and CARIGALI with 50:50 ownership and operated by SSB while PC4 is wholly owned by CARIGALI

Subsea Pipeline Description:

Pipeline Size : 12-Inch
 Pipeline Length : 25-km
 Water Depth : 100-meters
 Grade : X-65
 Service : FWS

SCOPE OF WORK :

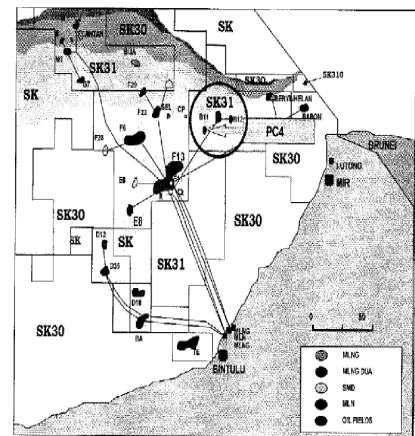
- Pipeline & Riser Routing
- Internal Corrosion and Material Selection
- Pipeline & Riser Mechanical Design
- Pipeline Stability, Span, Cathodic Protection, etc...
- Pipeline Steady-State & Transient Analysis
- Riser Design
- Installation Analysis
- Engineering Specs, Datasheets, MTO's & Drawings
- Pipeline & Riser Cost Estimation

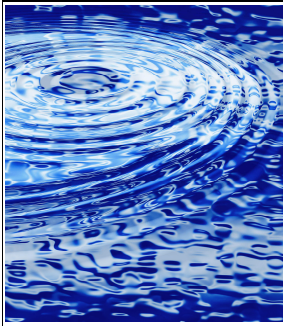
Key Flow Assurance Highlights:

- Pipeline Sizing.
- Insulation Coating Design
- Initial Start-up and Production Restart
- Normal Operations, Turndown and Ramp-up
- Shutdown, Cool down and Pipeline Blow down
- Pipeline Operating Manual
- Pipeline Hydrate Management Plan

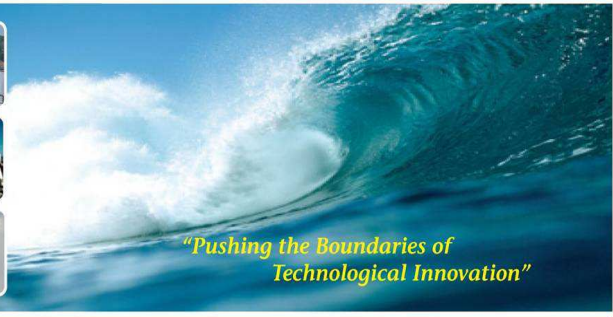
KEY ACHIEVEMENT :

- Zero Lost Time Injury
- Low Cost Solution to Prevent Hydrate formation and to control lateral buckling





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OFFSHORE SYSTEMS

PROJECT NAME : Layang Field Development Project
BUSINESS AREA : Subsea System
CATEGORY : Subsea Pipeline Design
SCOPE : Conceptual & FEED

CLIENT : Nippon Oil
ROLE : Main Engineering Contractor
DURATION : 9-Months
YEAR : 2009

PROJECT DESCRIPTION :

Nippon Oil Exploration (Malaysia) Ltd (NIPPON) embarked on developing the Layang development. The Layang field will be tied back to the existing production facilities at Helang Field in block SK-10 operated by NIPPON. Production Platform feeds into the MLNG-Tiga LNG production facilities.

Production from Layang is to be produced via a wellhead platform with a pipeline transporting gas and condensate to the Helang platform. The production fluids from Layang commingle with existing production from Helang and be transported via the existing export pipeline to the onshore LNG facilities.

Subsea Pipeline Description:

Pipeline Size : 12-Inch
 Pipeline Length : 7-km
 Water Depth : 100-meters
 Grade : X-65
 Service : FWS

SCOPE OF WORK :

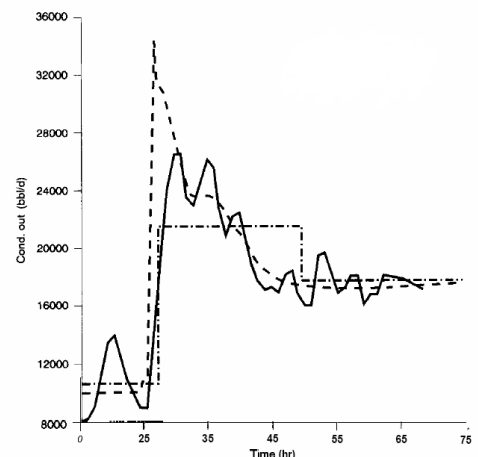
- Pipeline & Riser Routing
- Pipeline & Riser Mechanical Design
- Pipeline Stability, Span, Cathodic Protection, etc...
- Riser Design
- Pipeline Steady-State & Transient Analysis
- Installation Analysis
- Engineering Specs, Datasheets, MTO's & Drawings
- Pipeline & Riser Cost Estimation
- Pipeline ITB Documentation

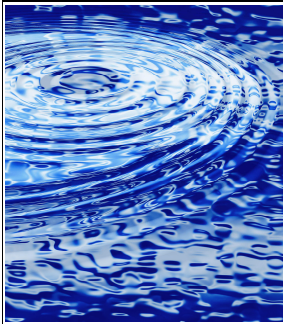
Key Flow Assurance Highlights:

- Pipeline Sizing.
- Model Benchmarking (HP, IP, LP & Turndown)
- Initial Start-up and Production Restart
- Normal Operations, Turndown and Ramp-up
- Shutdown, Cool down and Pipeline depressurization
- Pipeline Operating Manual
- Pipeline Hydrate Management Plan

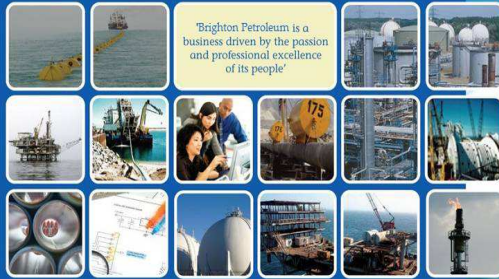
KEY ACHIEVEMENT :

- Zero Lost Time Injury
- Level 1 & 2 Lateral Buckling Assessment

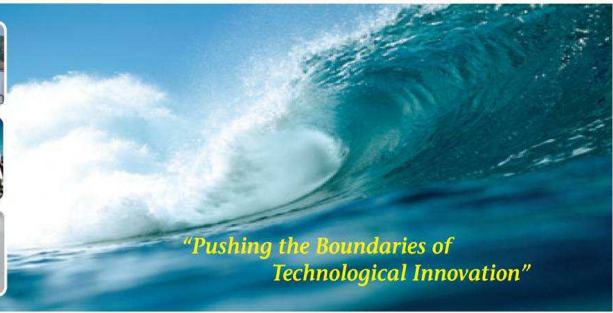




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OFFSHORE SYSTEMS

PROJECT NAME : Resalat Field Conceptual Design
BUSINESS AREA : Offshore Systems
CATEGORY : Offshore Platform
SCOPE : Offshore Pipeline System
Detailed Engineering Design

CLIENT : IOOC
ROLE : Main Engineering Design Contractor
DURATION : 9-Months
YEAR : 2005

PROJECT DESCRIPTION :

IOOC intends to carry out Pre-FEED/FEED engineering of the Resalat Offshore Complex renovation works. Pre-FEED/FEED studies shall be performed to design facilities for production of 100,000 stock barrel per day of crude oil in two trains of 50,000 SBOPD (net crude) each (one train in service and one train as stand-by) and a test separator with 15,000 barrel of crude oil per day capacity in another train. In addition to these production facilities, a water injection system will be design to inject 105,000 BPD of seawater after adequate treatment.

Resalat project consist of :

- 1 Nos of Drilling Platform
- 1 Nos of Production Platform
- 1 Nos of Service Platform
- 1 Flare Platform

SCOPE OF WORK :

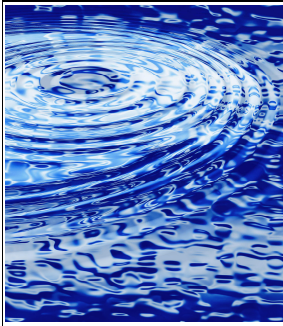
This involves the engineering design services of the following activities:

- Design Endorsement
- Route survey and soil investigation
- Inspection of existing platform/facilities
- Analysis and verification of existing structure
- Economical studies and estimation
- Develop work scope of engineering procurement & construction package for tender document.

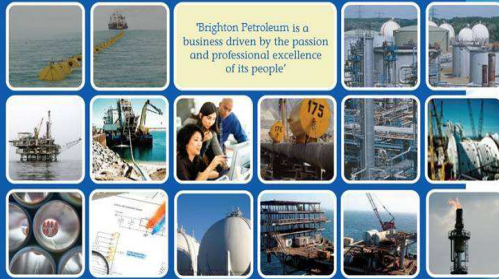


KEY ACHIVEMENT :

- Zero lost time injury
- Project completed successfully



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OFFSHORE SYSTEMS

PROJECT NAME : Reshadat Jacket Detailed Design Project
BUSINESS AREA : Offshore System
CATEGORY : Offshore Platform
SCOPE : Detailed Engineering Design

CLIENT : IOOC/Tasdid
ROLE : Main Engineering Design Contractor
DURATION : 12-Months
YEAR : 2007

PROJECT DESCRIPTION :

The Reshadat Field, formerly called Rostam, is located in the Persian Gulf 110kms south-west of Lavan Island. The Reshadat Field comprises two satellite wellhead platforms; R3 and R4 and a central complex R7 consisting of a wellhead platform and production and service platforms. The central complex was damaged during the Iran/Iraq war, the R7 wells being set on fire and burning for several months. The complex is currently shut down and is to be replaced by new facilities.

New production (P4), quarters (Q4), wellhead (W4) and flare (F4) platforms to be located close to the existing R4 platform. P4, Q4, W4 and F4 will be bridge-linked. A new wellhead platform (W0) to be located south of the existing R7 complex. R7, R3 and R4 to be abandoned.

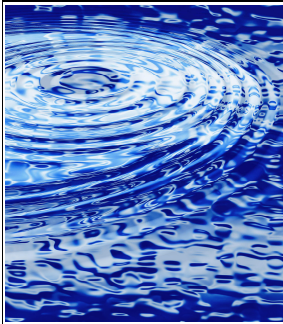
SCOPE OF WORK :

- Endorsement of the Basic Engineering Design Package.
- Detailed engineering
- Provision of documentation for submission to COMPANY's designated Certifying Authority and Marine Warranty Surveyor; assist COMPANY with liaison with the Authorities.
- Preparation of specifications for detail design, fabrication, procurement, installation and other activities.
- Perform all necessary HAZID's, HAZOPs, HSE and layout reviews to verify the suitability of the in-place design and installation procedures.
- Perform Interface engineering with other project parties



KEY ACHIVEMENT :

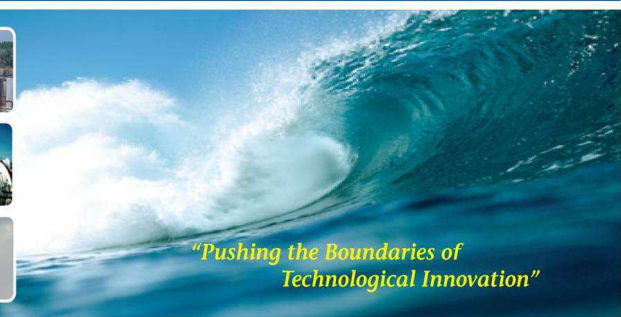
- Zero Lost Time Injury
- Project competed successfully



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OFFSHORE SYSTEMS

PROJECT NAME : South Pars Gas Field Development Project
Phases 15 And 16 Offshore Platforms

BUSINESS AREA : Offshore System

CATEGORY : Offshore Platform

SCOPE : Detailed Engineering Design
Post Engineering Assistance

CLIENT : POGC/IOEC/ISOICO

ROLE : Main Engineering Design
Contractor

DURATION : 40-Months

YEAR : 2008

PROJECT DESCRIPTION :

The south pars gas field located 100 Km offshore shall be developed to produce 2 bscfd reservoir fluid from two development phases, 1 bscfd each, and to transport the fluids to the mainland (Assaluyeh) at a distance of approximately 100 Km for further treatment.

These two development phases referred to as phases 15 and 16 will be integrated into the overall development plan of the south Pars gas field.

The facilities shall be developed on the basis of supplying treated lean gas to the domestic gas network and ethane gas to the petrochemical complex at the required specifications while maximizing liquid recovery as C3 / C4 LG and stabilized hydrocarbon condensate for export

SCOPE OF WORK :

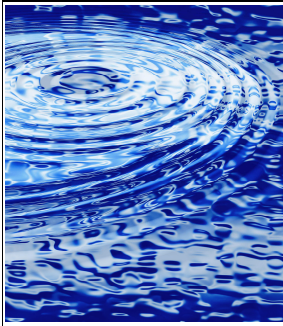
The SOW comprise of Basic and detail design of three platforms wellhead platform namely WHP1, WHP2 and WHP3 :

- Basic and detail design by preparation of design briefs including studies and analysis, drawings, data sheets, specifications, requisitions and other engineering documentation as required to enable completion of the works.
- Post Engineering assistance during installation, construction and commissioning.

KEY ACHIVEMENT :

- No HSE or Technical Integrity Issues
- No surprises or unplanned events
- Integrated planning & concurrent activities incorporated





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OFFSHORE SYSTEMS

PROJECT NAME :	Bumi, Bulan and Suriya Gas Development Project (HP/HT Pipeline)	LOCATION :	Malaysia
BUSINESS AREA :	Offshore System	DURATION :	6-Months
CATEGORY :	Offshore Pipeline System	OPERATOR :	CARIGALI HESS
		CONTRACTOR :	Kencana HL

PROJECT DESCRIPTION :

The Bumi, Bulan and Suriya gas fields, located in the Malaysia-Thailand Joint Development Area (MTJDA), is being planned to be developed by Carigali Hess Operating Company Sdn Bhd (Carigali Hess) on behalf of its shareholders and the Malaysia Thailand Joint Authority (MTJA).

The base case field development consists of three new well head platforms (WHP), namely Bumi A (BMA), Suriya A (SYA) and Bulan A (BLA). The fields are located in Block A-18, approximately 150 km NE of Kota Bharu and approximately 100 km South of the Bongkot field in approximately 60m of water depth in the Malaysia-Thailand Joint Development Area.

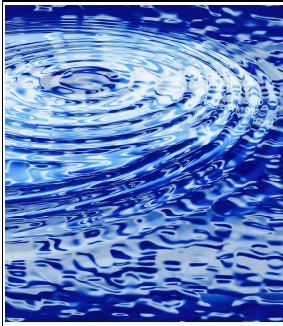
Development of Bumi, Bulan and Suriya gas fields is planned to supply an additional 400 mmscfd sales gas for export. Gas from these fields will be delivered via sub-sea pipelines to Cakerawala Riser Platform (CKR). Additional gas treatment facilities will be installed on Cakerawala Processing Platform (CKP). Additional gas compression facilities will be provided on CKR.

SCOPE OF WORK :

Carigali Hess Operating Company Sdn Bhd (Carigali Hess) has awarded the EPIC contract for Bumi, Bulan & Suriya Gas field Development to Kencana HL Sdn Bhd.

Kencana HL Sdn Bhd (KHL) in turn, has awarded SLT Engineering Sdn Bhd (SLT) to perform the detailed engineering design including lateral buckling assessment procedure and to verify/optimize the FEED design of the following pipeline systems:

- One approximately 16.0 km, 26-inch CRA (AISI 316L) gas pipeline from BMA to CKR [Ref.31].
- One approximately 8.5 km, 20-inch CRA (AISI 316L) gas pipeline from BLA to CKR [Ref.30].
- One approximately 12.7 km, 20-inch CRA (AISI 316L) gas pipeline from SYA to CKR [Ref.32].



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OFFSHORE SYSTEMS

PROJECT NAME : Gulshan & Firdowsi Field Development
BUSINESS AREA : Subsea and Offshore system
CATEGORY : Offshore Pipeline and SPM

LOCATION : Middle East
DURATION : 10-Month
CLIENT : SKSOG
YEAR : 2008 (Active)

PROJECT DESCRIPTION :

The Golshan and Firdowsi gas fields are located about 180 km south east of Bushehr between the South Pars and North Pars fields. The Golshan field is 65 km south west of Iran landfall and 25 km north of the Iran sea border and Firdowsi is approximately 30 km west of the Golshan field. The fields are located in shallow water with maximum depth of 75 m in the Persian Gulf area.

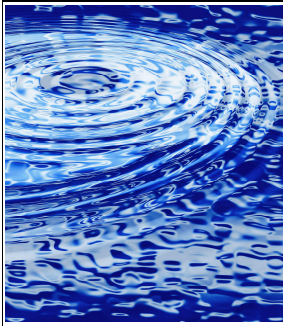
The Golshan gas field development is intended to produce a sustainable potential of 2Bscfd of gas to feed a Liquefied Natural Gas (LNG) plant located near Bandar-e-Dayyer. It is intended that Firdowsi gas will be dedicated to a downstream use, such as power generation or domestic usage, producing at a rate around 500MMscfd.

SCOPE OF WORK :

The Pipeline Engineering Group (PEG) design scope for Golshan and Firdowsi Gas Fields Development Project includes the basic design (pre-feed) and feed engineering of the followings:

- Two (2) off carbon steel 32-inches multiphase pipelines from the Golshan field platforms to onshore tie-in.
- Two (2) off carbon steel 4-inches MEG injection pipelines from the onshore tie-in to Golshan field platforms as piggy back.
- One (1) off carbon steel 20-inches multiphase pipeline from the Firdowsi field platform to onshore tie-in.
- One (1) off carbon steel 4-inches MEG injection pipeline from the onshore tie-in to Firdowsi field platform as piggy back.
- One (1) off carbon steel (typically 30-inches) crude oil pipeline from onshore terminal to PLEM tie-in.
- One (1) off pipeline end manifold (PLEM) designed for crud offloading and loop system.

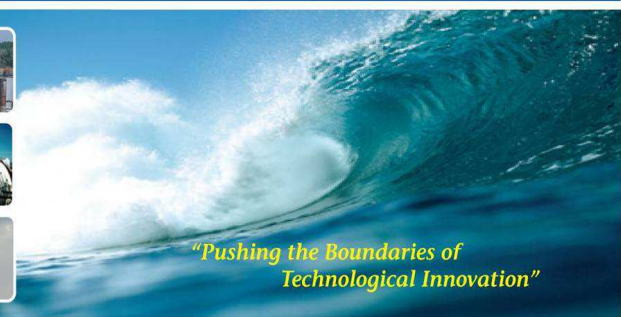
The feed engineering design will also define specifications and functional operation of one Single Point Mooring (SPM) for the completion of the entire offloading system.



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OFFSHORE SYSTEMS

PROJECT NAME : Guntong C Pipeline Repair Project

LOCATION : Malaysia

BUSINESS AREA : Offshore System

DURATION : 3-Months

CATEGORY : Offshore Platform

OPERATOR : PETRONAS

CONTRACTOR : ESSO/MMC

PROJECT DESCRIPTION :

Exxon Mobil Exploration and Production Malaysia Inc. (EMEPMI), is undertaking a feasibility study to convert an existing 8-Inch water injection pipeline, from Guntong A to Guntong C, into a full well stream pipeline from Guntong C to Guntong A.

EMEPMI has contracted MMC Oil & Gas Engineering Sdn Bhd (MMC) as the main engineering Contractor.

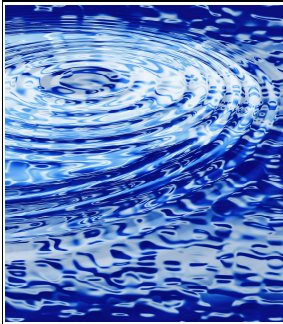
MMC has Sub-Contracted Brighton Petroleum to perform the subsea pipeline verification engineering services.

SCOPE OF WORK :

The above mentioned Engineering Verification activities will be performed for the pipeline system summarized in Table below:

Summary of Project Pipeline Description

Service	Pipe Size (in)	From	To	Approximate length (m)
Multiphase	8	Guntong C	Guntong A	3500



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OFFSHORE SYSTEMS

PROJECT NAME : Aboozar Topside Integrity & Upgrade Project
BUSINESS AREA : Asset & Integrity Management
CATEGORY : Project Management & Control

LOCATION : Middle East
DURATION : 8-Months
OPERATOR : IOOC
CONTRACTOR : Marron Sazeh

PROJECT DESCRIPTION :

Company intends to develop existing facilities on AB-new platform in Aboozar oilfield that is located in Persian Gulf. Company intends to appoint specialist PC Contractors to perform the procurement and construction of the piping of new 24" Aboozar export oil header and vertical pig launcher, piping and platform extension.

The Aboozar Offshore Production Complex is located in the Persian Gulf, some 75 km to the west of Kharg Island, in a water depth of approximately 40m.

SCOPE OF WORK :

- Project Controlling / Corresponding
- Interface Management
- Construction Supervising
- Installation Supervising
- Survey Supervising
- Procurement and Material Controlling
- QA/QC
- HSE

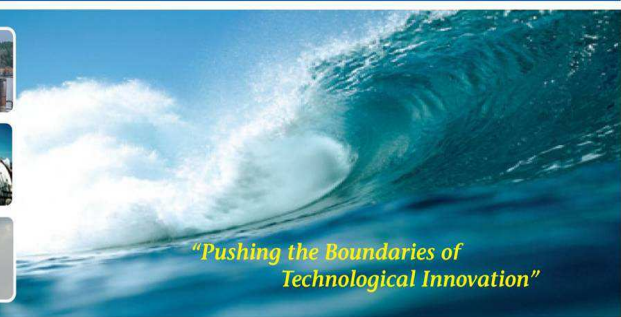




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OFFSHORE SYSTEMS

PROJECT NAME : Vietross Refinery Oil Import
BUSINESS AREA : Subsea System
CATEGORY : Subsea Pipeline, PLEM and SPM

LOCATION : SE Asia
DURATION : 14-Months
CLIENT : Vietross
YEAR : 2004

PROJECT DESCRIPTION :

The SPM loading facility is located off the coast of Da Nang vietnam, and used to load heavy crude oil. This project involved a 16-meter diameter Catenary Anchor Leg Mooring (CALM) buoy installed at a water depth of 33 meters, utilizing an anchoring system consisting of six marine drag anchors. The buoy piping connects to a pipeline ending manifold (PLEM) via 2x 52 meters of 12-inch hose. Two 3.2-km, 20-inch subsea pipelines extends from the PLEM to refinery to form a continuous loop.

SCOPE OF WORK :

1. PROJECT MANAGEMENT AND CONTROL

Execution of the project management and control of the project (PMC). This included detailed planning, resource and risk management. Development of project specific mechanisms, responsibilities, and completion dates for the following key activities:

- Contractual requirements
- Engineering (conceptual, preliminary and detailed)
- Procurement
- Training

2. BASIC DESIGN AND ENGINEERING

This involves the mechanical design of the Onshore and offshore pipeline, PLEM and SPM system, and comprises of, but not limited to the following activities:

- Pipeline Desktop Route Sel.
- Flow Assurance Studies
- Land & Marine Survey
- Mechanical Design
- Detailed Hydraulic Design
- Detailed Heat Transfer Analysis
- PLEM Design
- SPM functional Requirements
- Installation Engineering
- Shore Approach Design

