



PMC Praj Marine Consultants
Pte Ltd
Singapore

Overview

Praj Marine Pte Ltd (PMC) is Singapore based Company providing Project Supplies, Marine consultancy and Supply Skids to oil & gas industry.

Consultancy includes FPSO Conversion, Marine systems, Life extension & refurbishment supervision, Equipment sizing, configuration & layout, Mechanical handling study, rotating equipment maintenance & commissioning.

PMC Advantage:

*Customised solutions by
integrating great products &
Capable minds.....*



About us

AT PMC in the present ever expanding connected world we believe in connecting capabilities of products & skills to create value for customers.

Anant Kulkarni

Marine Chief engineer, FPSO Manager,
Consultant with 21 years experience

Jeff James

Valves Specialist with 38 years into Control
Valves design & Service

Technical & integration Team in India

Project Challenges

- EPC Project Aggressive Delivery schedule & Cost
- Huge workload in the initial stage for finalising packages in time to maintain schedule.
- Manufacturer's inability to align resources & response in line with project requirement.
- Poor interface & local follow up in factory.

PMC Advantage

- Experience for 22 years as Marine Engineers/Managers with Ship & FPSO.
- FPSO Marine consultancy for conversion, Ship Dry-docking, Marine packages & Classification rules
- Ability to Multitask, integrate great products/ brands with innovative solutions saving cost & delivery time.
- Associates/Partners in USA, UK, Singapore & India.
- Valve Testing facility, Repair support in Singapore.

Products – Marine Skids

We provide Marine Skids for FPSO, Rigs & other industries.

- Fire water jockey pump system
- Fresh water Hydrophore system
- Calorifier hot water system
- Pump skids
- **Salient Features**
 - We integrate branded products & capable minds to provide customised Skids with better delivery & cost.

Products - Marine Skids

Integrated Branded Calorifier Skid

- Capacity(Liters) – 1000/1500/2000
- Heating Capacity – designed as per spec. Inconel coil with SS316 sheath, Direct/Indirect heating

Brands

- Grundfos/Allweiler Desmi/Naniwa
- Control Panel - Rittal , Schnieder/Allen Bradley
- Level & Pressure gauges – Wika
- Heater – Sandvik (Sweden)

Integration

- India/Singapore/Indonesia/Malaysia

Approval

- ABS / DNV

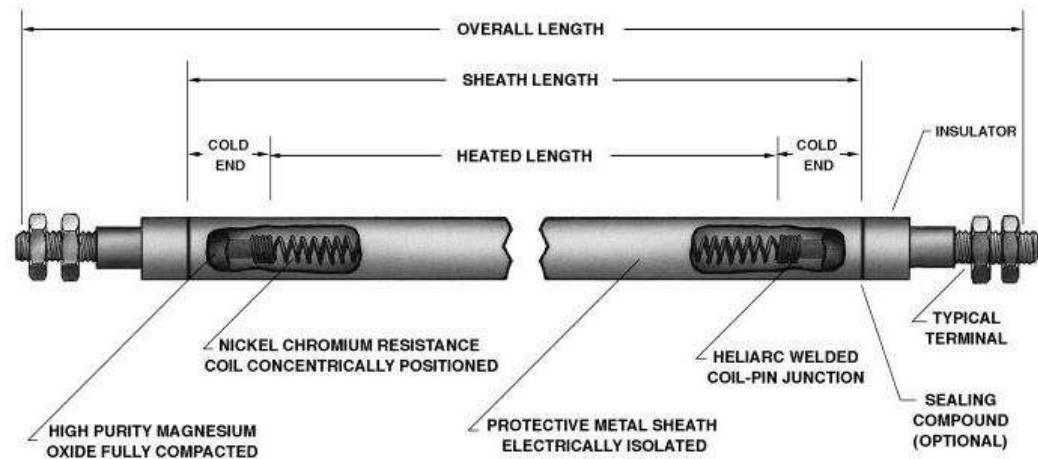


**SS316L, 90 kw indirect heater,
PLC based Control Panel
Auto/Manual Operation**

Products - Marine Skids

Heater details

- We work with Company - Sandvik which has core strength into manufacturing Nichrome heating coil.
- Direct heating
- Indirect heater – Heater replacement can be done without draining.
- Watt Density less than $3\text{W}/\text{cm}^2$ improving element life.



Products - Marine Skids

Compact Potable water hydrophore skid

- VFD controlled pumps & PLC panel optimises vessel capacity to just 300/600 litres. (Conventional 2000 litres)
- Suitable for 100 people accommodation
- Power saving, Compact & high performance skid

Brands

- Grundfos, Pressure gauges – Wika

Integration

- Pressure vessel, valves, skid, Customised as per Project requirement

Approval

- ABS / DNV



Project Supplies

- **Valves (Brands)**
 - SRI - France
- **LNG**
 - Bestobell
- **Actuated/Control valves**
 - Rotork actuator with Manual valves.
 - Mascot Control Valves for severe service at best delivery
 - Customised control configuration
- **Approvals & Certificates**
 - ATEX/ CE compliance
 - Fire Safe
- **Standards**
 - DIN/ANSI/ API 6A / API6D
 - Norsok

Project supplies Summary



Control Valve



On-Off Valve



**Cryogenic valves
Bestobell**

Client list & Major project Supplies

- Lamson FPSO
- Santos – Australia
- Bertam FPSO
- FPSO – ONGC - C7
- FPSO Brotojoyo
- FPSO Apache – Armada Claire
- Glaxo Smithkline –
Biologicals - Boiler plant
- Selandia Ship
management -Boiler
class approved valves
- Mercator – MOPU
project.
- Kris Energy
- Lundin Petroleum



S1 assets Thailand (2016)

■ On – Off & Shut down valves

- Integration of 300#, 900# SRI France valves with Rotork Actuators
- Delivery time 16 weeks, FAT – In Singapore

Client list



Bumi Armada – Husky FPSO (2015 – 16)

■ **Calorifier System package**

- SS316L Pressure vessel
- Grundfos pumps
- Sandvik Heaters
- Heater control system with DCS interface
- Control Panel - Rittal Germany
- FAT – In Singapore
- ABS Approval





Yinson Production (2015)

■ Fire Water Jockey Pump System packages

- Pressure vessel – Rubber lined for sea water application
- Allweiler- Germany pumps
- Rittal Control Panel
- DNV Class Approval





FPSO Consultant Dec 2013- July 2014

▪ Review of Pemex Bids for FPSO

- Review of topside / Marine interface
- Turret system
- Mooring system
- Marine Utilities

Boiler fuel pump Skid (2014)

▪ Power Plant

- Positive displacement pumps – 30m³/hr
- Piping & fittings 150#
- 3rd party approval
- Delivery time 4 weeks



Lundin Bertam FPSO (2014- 2015)

■ Procurement of topside packages

- Review of topside / Marine interface
- 1st/2nd stage separator skid
- Gas compressor skid
- Hydro cyclone skid , Crude oil cooler skid
- Chemical injection skid, Produced water pump
- All Valves & Instruments
- Mechanical handling Study

• Achievements

- Procurement & delivery of packages achieved in 5 months with excellent coordination of engineering & equipment supplier





Petrovietnam Lamson FPSO (2012-14)

- All Marine systems engineering Review & optimisation.
- Packages – Total 51 packages including 1.2MW Emergency Generator, Gas & Liquid Metering skids, Nitrogen generator, Dual fired Boiler package, Deluge Pumps, Cranes, Laboratory, Compressors, Manual & control valves.
- CO₂, Valve hydraulic , Inert gas system modification review





Petrovietnam Lamson FPSO (2012-14)

Achievements

- Long lead – Dual fuel boiler configuration & sizing optimized fit for purpose making early availability of engine room boilers & bringing reliability & cost saving.
- Sea water injection pump sizing optimized to make it additionally suitable as back up fire pump in compliance with DNV class requirement saving cost for Caisson pumps



Premier Oil Anoa Platform Phase 4 (2012)

Interface engineering

- Review Interface documents between AMEC & Premier Oil for existing Solar turbine Modification – 2 Nos & New – 1 no Installation.

FPSO BROTOJOYO- Kangean Energy Indonesia

- Construction management for Life extension & refurbishment - Indonesia.
- Marine systems review & Decommissioning of main engine etc.
- Procurement & Installation of dual fuel deck boiler, DG sets – 2.8 MW, Topside equipment modification, E-house, Marine auxiliaries
- DNV Class interface & compliance



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North Bali

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