

MALONG ANDING & SOTONG ANDING (MASA) FIELD, MALAYSIA:

FPSO Perintis External Turret



Scope of Work

SOFEC designed and constructed an external cantilevered turret mooring system for a permanently moored FPSO conversion.

The FPSO Perintis is installed near three fixed satellite production platforms located in the MASA fields offshore Malaysia. The FPSO is designed to produce a total of 55,000 BPD of combined fluids including 35,000 BPD of crude oil and 100 MMscfd of gas. Processed crude is exported through a tandem offloading arrangement and the produced gas is exported through subsea pipelines. Water injection is also provided by the FPSO's topsides facilities to the field and has a maximum capacity of 25 MBPD.

This SOFEC external turret mooring system is ABS classed.

General Description

Client Name:	Trenergy FPSO SDN BHD
Contract Award:	January 1998
Installation Date:	March 1999
First Oil:	April 1999
Vessel Size:	94,236 dwt

Storage Capacity:	640,000 bbls
Water Depth:	75m (246ft)
Fabrication:	Turret - Malaysia Vessel - Malaysia Topsides - Asia

Design Environmental Criteria (100-year storm)

Significant Wave Height:	5.5m (18 ft)
Wind Velocity:	22m/s (43 knots)
Current:	1m/s (1.8 knots)

Mooring System

- 6-leg Symmetric weighted catenary:
- 6-in. Stud link chain
- 12mt Drag embedment anchors
- 3.5-in. ORQ top chain

Turret

Permanent External Cantilevered



FPSO Perintis

(Continued)

Fluid Swivel Assembly

Water Injection:	1 x 6-in. 900# [1,407 psi design]
Production:	2 x 10-in. 900# [1,014 psi design]
Gas Lift Swivel:	1 x 6-in. 900# [1,930 psi design]
Gas Export:	1 x 6-in. 900# [1,930 psi design]
Hydraulic Utility Swivel:	13 paths [3,000 psi design]
Electrical Utility Slipping:	16 paths

Riser System

- 1 x 16-in. Flexible riser (crude)
- 2 x 14-in. Flexible riser (crude)
- 1 x 12-in. Flexible riser (gas export)
- 1 x 6-in. Flexible riser (water injection)
- 1 x 4-in. Flexible riser (gas lift)