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

Turret
Permanent External Cantilevered

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 Slipring: 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)