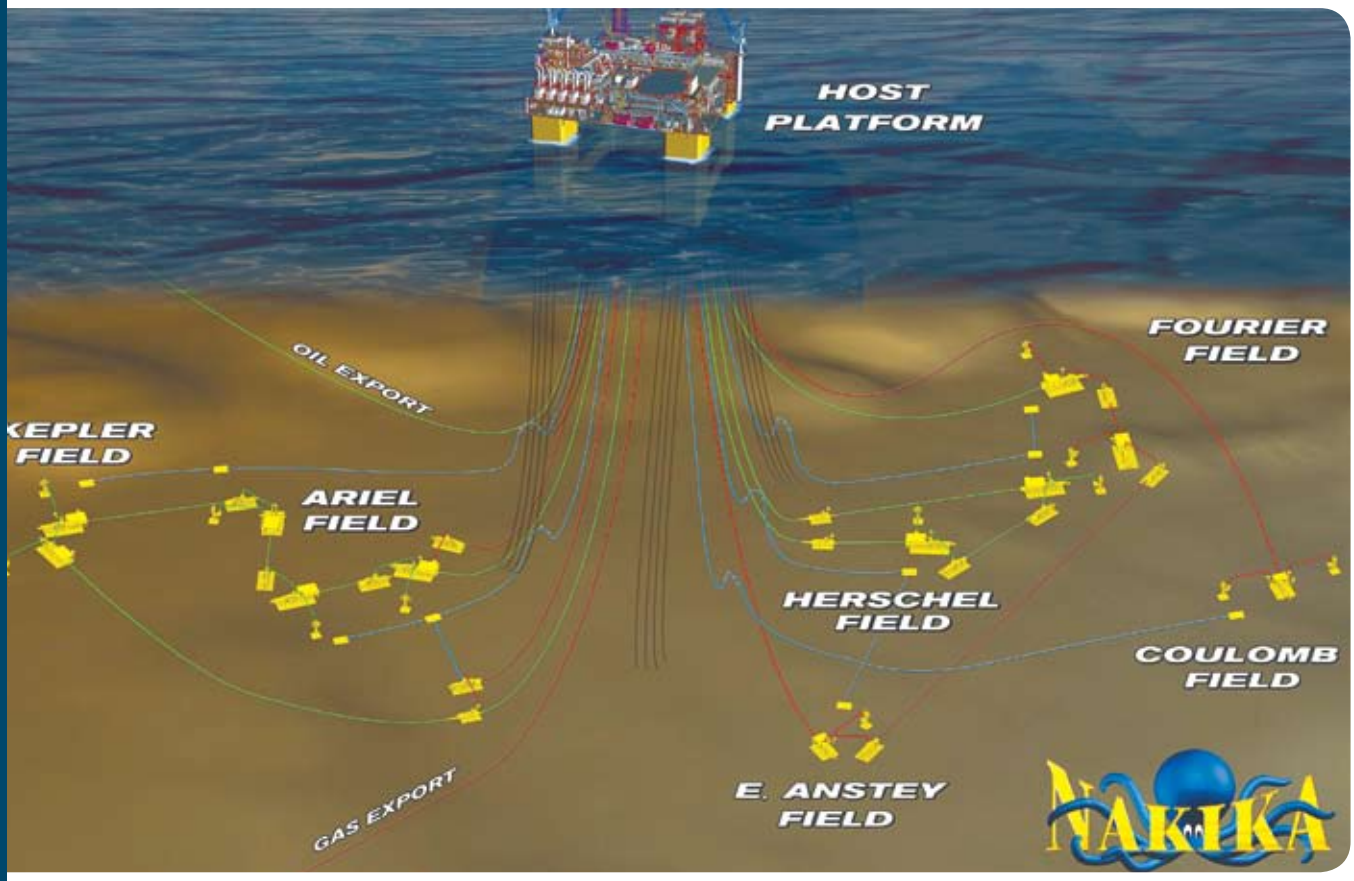
FMC Technologies

Shell Na Kika

Gulf of Mexico Blocks MC 383, 429, 474, 520, 522, 607 & 657



Landmark: World's Deepest Subsea Production Development

Project Overview

Contract Award:	2001 2002 (Coulomb Field)
Sales:	Houston, Texas
Fabrication:	Houston, Texas
Service Base:	Houston, Texas
Host Type:	FPS-Semi
Contract Type:	Alliance

Project Characteristics

No. Trees:	10 2 (Coulomb Field)
Water Depth:	1,770 - 2,300 m (5,800 - 7,750 ft)
Tree Type:	EVXT
Tree Pressure:	10,000 psi
Tree Bore Size:	4"x2"
Hydrocarbon:	Oil and Gas

Project Ownership

Coulomb Field	
Shell	100%
Other Fields	
Shell	50%
BP	50%

Scope of Work

- Twelve (12) enhanced vertical 4”x2” 10,000 psi subsea trees
- 5” standard concentric monobore tubing hangers
- GLL tubing head
- Retrievable choke insert
- Twelve (12) electro-hydraulic control modules
- Twelve (12) tree-to-sled well jumpers
- Flowline connector equipment
- Eighteen (18) flowline jumper kits
- Two (2) gas lift sleds and jumpers
- Subsea distribution system
- Topside production control system
- System integration, testing, installation assistance, service and maintenance

Comments

The Na Kika development in the Mississippi Canyon area of the Gulf of Mexico is the largest project using Shell’s standard 4”x2” vertical tree completion system. The project is a novel subsea co-development of six (6) independent fields that, individually, would not be economical to produce. The six (6) fields, including Kepler, Ariel, Fourier, Herschel, East Anstey and Coulomb, range in water depths from 1,770 to 2,300 m (5,800 to 7,750 ft). The trees are tied back to a centrally located host facility for fluids processing and export via pipeline.

The Coulomb Field is located in Mississippi Canyon Block 657 and is tied back to the Na Kika host facility via a 40 km (25 miles) pipeline. It is the world’s deepest subsea cluster. Coulomb is primarily a gas development and will produce using a subsea production system consisting of two (2) subsea wells producing at a combined rate of 20,000 boepd. Production began in 2005.

Several new and emerging technologies are installed on Na Kika, including downhole “intelligent well” equipment that provides the ability to isolate or commingle production from flow zones remotely from the host via the normal subsea control system. In addition, multi-phase flowmeters are installed on well jumper assemblies to provide real-time three-phase (water, oil and gas) flow measurement data.

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