

Shell (Enterprise) Nelson

U.K. Block 22/11



Landmark: FMC Technologies' First EPC Contract Executed in the U.K.

Project Overview

Contract Award: 1993
Sales: Dunfermline, U.K.
Fab. Trees: Dunfermline, U.K.
Fab. Controls: Kongsberg, Norway
Service Base: Aberdeen, U.K.
Host Type: Platform
Contract Type: EPC

Project Characteristics

No. Trees: 4
Water Depth: 90 m (290 ft)
Tree Type: Vertical
Tree Pressure: 5,000 psi
Tree Bore Size: 5"x2"
Hydrocarbon: Oil/Gas

Project Ownership

Shell	58%
ExxonMobil	21%
Total	12%
Intrepil	7%
Other	2%

Scope of Work

- ▶ Four (4) vertical 5"x2" 5,000 psi subsea trees
- ▶ Four (4) completion guide bases for subsea tree positioning
- ▶ Full-bore 5"x2" 5,000 psi tubing hanger completion in the wellhead
- ▶ UWD-II 18-3/4" 10,000 psi H-4 subsea wellheads
- ▶ Electro-hydraulic multiplexed control systems
- ▶ Subsea manifold features Dynetor® connectors to minimize weight and space on the 11-slot, 5,000 psi manifold
- ▶ Subsea tree and manifold protective structures
- ▶ Completion/workover control system
- ▶ System integration, testing, installation assistance, service and maintenance

Comments

The Shell (Enterprise) Nelson Field South Satellite development is located in U.K. Block 22/11, due east of Aberdeen, Scotland, and 21 km (12 miles) southeast of the Forties Field. The South Satellite development is a cluster of subsea trees located around a central subsea manifold in 86 m (280 ft) of water. It is a single-drill-center concept tied back to the Nelson platform, which is 6 km (3.5 miles) to the northwest with flexible pipelines. It is controlled by an electro-hydraulic multiplexed control system. The project began in 1992 with contract award and the drilling of two (2) subsea wells with FMC Technologies' 18-3/4" 10,000 psi UWD-II drilling system. The wellhead protective structures and manifold were installed in 1993, and the first two (2) trees were installed in the first quarter of 1994.

FMC Technologies was awarded the contract for the engineering, procurement and construction of all subsea equipment in the South Satellite development with the exception of the production controls and the flowlines. FMC provided the wellhead and running tools, the workover control system and umbilical, trees and tree running tools, completion riser, overtrawlable wellhead protective structures and the manifold. The 150-ton manifold was a unique design based on vertically stacked headers and using FMC's Dynetor® connector to allow fast and easy diver replacement of the production well bay branch valves. The manifold pipework consisted of two (2) 8" super duplex production headers with a super duplex forged wye block. The wye block was one of the largest super duplex forgings made at that time, and the manifold was one of the first to use super duplex in the pipe work. The manifold also had one (1) 8" super duplex production/test header, one (1) 10" carbon steel water-injection header and a 6" carbon steel gas lift header.



Worldwide Headquarters:
FMC Technologies
1803 Gears Road
Houston, TX 77067, USA
Phone: +1 (281) 591 4000
Fax: +1 (281) 591 4291

www.fmctechnologies.com

Regional Sales Office:
FMC Technologies
Riverside House
Riverside Drive
Aberdeen AB 117 LH
Scotland
Ph: +44 1224 224600
Fax: +44 1224 224601