



OTC 20285

AGBAMI Offloading System—Worldwide Design and Fabrication Challenges

Serge Maretti, Acergy Corporation; Sjoerd Hoekstra, SBM; and Hisham Mitwally, Chevron Nigeria Limited

Copyright 2009, Offshore Technology Conference

This paper was prepared for presentation at the 2009 Offshore Technology Conference held in Houston, Texas, USA, 4–7 May 2009.

This paper was selected for presentation by an OTC program committee following review of information contained in an abstract submitted by the author(s). Contents of the paper have not been reviewed by the Offshore Technology Conference and are subject to correction by the author(s). The material does not necessarily reflect any position of the Offshore Technology Conference, its officers, or members. Electronic reproduction, distribution, or storage of any part of this paper without the written consent of the Offshore Technology Conference is prohibited. Permission to reproduce in print is restricted to an abstract of not more than 300 words; illustrations may not be copied. The abstract must contain conspicuous acknowledgment of OTC copyright.

Abstract

The Agbami field is located 110 km offshore Nigeria in 1,400 m of water and is operated by STAR Deepwater Petroleum Limited on behalf of the concessionaires Nigerian National Petroleum Corporation, Famfa Oil Limited and the other funding participants: Statoil Nigeria Limited, Petroleo Brasileiro Nigeria Limited, Star Deepwater Petroleum Limited (an affiliate of Chevron Corporation) and Texaco Nigeria Outer Shelf Inc. (an affiliate of Chevron Corporation).

The Agbami Offloading System consists of a surface buoy connected to the FPSO via two U shaped steel offloading lines. Design and fabrication of the Agbami Offloading System was carried out by a consortium of two companies and the engineering, fabrication and installation planning was carried out by the consortium offices and their subcontractors in several locations worldwide.

This paper will provide an overview of the major safety, design and fabrication challenges encountered during the engineering, fabrication and installation of the Agbami offloading system throughout the various phases of the project, from contract award to commissioning and first offload. The paper will also present some of the lessons learned that were gathered throughout project execution.

Establishing a strong QA/QC system, acceptance criteria and a close working relationship with suppliers proved to be essential in securing the needed quality of the fabricated critical components. Robust interface management system and timely resolution of interfaces was also critical to ensure completion of engineering and delivery of interface components on time.

Agbami Project

Agbami field is a full subsea development consisting of an FPSO (Floating Production Storage and Offloading) connected to subsea wells via flexible risers and static and dynamic umbilicals with crestal gas injection and peripheral water injection. The subsea production system consists of 20 wells centered around 6 drilling center manifolds and tied back to the FPSO by dual flexible risers and flow lines, allowing round trip pigging from the FPSO. Flexible jumpers connect each tree within a drill center to the production manifold. The subsea water injection system consists of 12 injection wells tied back to 4 water injection manifolds via flow lines and jumpers and the manifolds are connected to the FPSO via single flexible risers. The subsea gas injection system consists of 6 gas injection wells tied back to two gas injection manifolds via flow lines and jumpers and the manifolds are connected to the FPSO via dual flexible risers to allow round trip pigging. The FPSO is capable of producing 250,000 barrels and has a storage capacity of 2.15 million barrels of oil.

Agbami Offloading System

The Agbami field primary offloading system is a classic Deepwater SPM (Single Point Mooring) terminal with a tandem offloading capability available on the FPSO as back up. The SPM is located 1.8 km north of the FPSO and connected to the FPSO via two 20 inch steel offloading lines. Export tankers berth at the terminal and are moored to the rotating part of the