

BP Thunder Horse



Client:
British Petroleum Americas
(BP)

Location:
Mississippi Canyon Blocks,
North America

Project Type:
SURF

Between 2002 and 2009, Subsea 7 carried out a number of engineering, installation, recovery and re-installation works for BP's Thunder Horse ultra deepwater development in the Gulf of Mexico - the largest semi-submersible facility in the world.

The scope of work included, amongst other activities, jumper, sled, structure and umbilical installation, as well as recovery and re-installation works following the 2005 hurricane season.

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Date Awarded

October 2002

Date Completed

November 2009

Vessels/Spoolbases Utilised

Skandi Neptune
Toisa Perseus

Overview

Designed to process and export up to 250,000 barrels of oil per day and 200 million cubic feet per day of natural gas, Thunder Horse is the largest semi-submersible facility in the world.

On June 14th 2008, Thunder Horse produced first oil through the Alternative Production System (APS), many of the components of which were installed by Subsea 7. This was completed three months ahead of schedule and represented a major milestone towards the development of this field.

The original workscope included loading and transportation of umbilicals from Halden, Norway and installation of the subsea architecture, including all umbilicals, jumpers, control systems and structures.

Subsea 7 installed the original Thunder Horse umbilicals, control distribution systems, flowline jumpers and flying leads in 2005. Events related to the 2005 hurricane season resulted in the recovery and replacement of some of the installed subsea components, which was also performed by Subsea 7.

The varying scope of work executed by Subsea 7 at Thunder Horse included:

- Key works for the Alternative Production System
 - Jumper installation
 - Sled installations
 - Controls equipment recovery and re-installation Steel
 - Flying Leads (SFLs) & Electrical Flying Leads (EFLs)
 - Umbilical re-instatement
- Jumper Retrieval and Installation
- SLED Installation
- PLET Keelhaul Support Works
- SFL and EFL Retrieval and Installation
- Mud mat installation
- Concrete mattress installation and removal
- Manifold installation
- Shroud installation
- General survey works
- Metrologies
- Umbilical installation
- Control works
- Riser monitoring equipment / Acoustic Doppler Current Profiler (ADCP) equipment
- Subsea hydro testing and commissioning works

The last offshore campaign was the installation of the Thunder Horse North extension umbilicals. Manufactured in Halden, Norway, the umbilicals were shipped to Mobile Alabama, where they were loaded aboard the *Toisa Perseus* and installed using its onboard Reel Drive System and Vertical Lay System.



Thunder Horse at dusk



Thunder Horse rigid spool



UMAX-Akira Sled Loadout



Umbilical installation by the Skandi Neptune