Mechanical Solutions

Location: Gulf of Mexico

Topside Winch Pull-In System, Shenandoah Floating Production System

Challenge

Ashtead Technology was selected to design and deliver a topside winch pull-in system to support the installation of two production Steel Catenary Risers (SCRs), an oil export SCR, a gas export SCR and a dynamic umbilical onto the Shenandoah Floating Production System (FPS), Gulf of Mexico.

With limited deck space and design loads approaching 700 tonnes for the oil export SCR, our customer required a solution that was both space efficient and would not exceed the strict weight limits on the FPS cranes.

Solution

The team at Ashtead Technology engineered a bespoke pull-in system tailored to the project's requirements:

- Custom-built 800Te Intermittent Linear Winch to provide precise, controlled pulls and superior line-pull-to-weight efficiency
- Umbilical Pull-in Grillages and Horizontal Sheave Grillage, engineered to guide and support both the dynamic umbilical and SCRs during pull-in
- Flagging Sheave designed to manage high-tension loads

Additional equipment supply included:

- 1 x ACE 144Te Hydraulic Drum Winch with diesel Hydraulic Power Unit (HPU)
- 1 x ACE 12.5Te Tugger Winch with diesel HPU
- 1 x ACE 125Te Reel Stand and Spooling Gear with diesel HPU
- 1 x ACE 75Te Overboarding Sheave
- 2 × ACE 75Te Sheaveblocks

Results and Impact

- Bespoke equipment package successfully completed the required pull-ins, helping our customer remain on target to start production
- Linear Winch solution allowed for high SCR pull-in capacity vs weight of equipment
- Optimised deck space and streamlined operations
- Full scope of supply included all associated project management, engineering, fabrication, testing, transportation, installation and offshore operation
- Received high praise on operational performance of our personnel, performance on health and safety and performance on installation and commissioning.