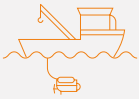


Precise Positioning and Monitoring during Floatover Installation of Platform Topsides Deck

Case Study

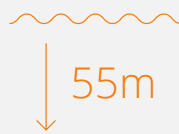


Construction Support

Client

subsea 7

Water Depth



Location



Hasbah Field, Arabian Gulf

Scope

UTECH were contracted to provide precise positioning and motion monitoring for the floatover installation of the 6700Te Hasbah TP-3 and TP-2 topsides decks between previously installed jacket legs, during December 2018 and January 2019.

The decks were each delivered to site from the fabrication yard in Sohar Oman onboard the 156m x 36m Deck Transportation Vessel, Tai An Kou, supported by a standby tug, accommodation work boat and crew boat each fitted with unmanned and remote controlled positioning equipment to provide the client with live graphic displays of all vessels.

The UTECH workscope also included provision of wind, wave, swell, tide and current monitoring together with weather forecasting services to identify weather windows for the floatover operations for each deck.

Solution

UTECH used RTK GPS to define the position and height of the docking piles on the jackets together with the height of two tide gauges used to define the water level at each jacket.

Dimensional control measurements were also made at the loadout yard in Oman between the installation vessel and each deck to relate deck position and attitude relative to UTECH sensors measuring vessel position and attitude.

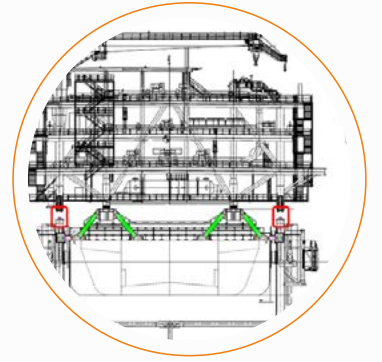


Realtime graphical displays of the deck, vessel and jacket were combined with wind, wave, current and water level data to give the client the information to bring the vessel between the jacket piles with only 20cm between jacket and vessel fenders. The water level observations combined with the other environmental monitoring permitted the deck to be brought into position with 1m vertical separation from the jacket.

Vertical separation was then continually monitored as the deck was lowered onto the jacket by a combination of vessel ballasting and tidal variation plus further monitored as the vessel moved out from the jacket.

Result

The realtime horizontal and vertical positioning combined with environmental monitoring and forecasting provided by UTEC gave the client the information to permit the deck installation to be done with the floatover technique instead of a more expensive heavy lift crane barge.



About UTEC

Since 2005, UTEC, an Acteon company, has grown to become one of the largest global surveying contractors in the offshore energy sector.

We provide a wide range of survey, positioning and data management services using the most advanced equipment and techniques.

Our highly experienced team have more than 4000 years of combined survey experience and can find solutions for our clients' most complex challenges.