

Unique Cables and Connectors for First MCVs in the World

THE PROJECT



Marine Well Containment Company (MWCC) is an independent company with headquarters in Houston, Texas. The company provides well containment equipment and technology in the deepwater U.S. Gulf of Mexico.

In July 2010, Shell, Chevron, ConocoPhillips and ExxonMobil committed to providing a new containment response capability for the U.S. Gulf of Mexico. These founding companies of MWCC recognized the need to be better prepared for a deepwater well control incident (followed by the BP oil spill in April 2010 in Gulf of Mexico) and as a result, MWCC introduced its Interim Containment System (ICS) in February 2011. Today, the company has 10 member companies and represents unprecedented industry collaboration.

The MWCC Containment System is built for use in the deepwater U.S. Gulf of Mexico in water depths from 500 feet to 10,000 feet, temperatures up to 350 degrees Fahrenheit and pressures up to 15k psi. MWCC's suite of containment equipment enables the company to mobilize and deploy the most appropriate well containment technology based on the unique well control incident and equipment requirements. The system has the capacity to contain up to 100,000 barrels of liquid per day and handle up to 200 million standard cubic feet of gas per day.

In the event Marine Well Containment Company's (MWCC's) Containment System is deployed to cap and flow a deepwater well control incident, two tankers known as Modular Capture Vessels (MCVs) had to be outfitted with the system's processing equipment. The MCVs can process, store and offload liquids to shuttle tankers, which can then safely take the liquids to shore for further processing.

In the event of an incident, the vessels are mobilized to MWCC's MCV Shore Base in Ingleside, Texas, near Corpus Christi, to be outfitted with the processing equipment, which has been assembled into large modules (10 for Eagle Texas and 9 for Eagle Louisiana) to facilitate more efficient transportation, lifting and installation from the shore base dockside onto the MCVs.

Both MCVs have similar specifications and are similarly outfitted with processing equipment that separates the liquids from gas, stores the liquids and handles the gas in a safe and effective manner at the well incident site. However, the Eagle Texas houses one additional module that manages the chemicals used for the umbilical in addition to a control system necessary to operate the Subsea Containment Assembly (SCA) via the umbilical.

AET Inc. Limited owns and charters the MCVs to MWCC. When not needed by MWCC, the MCVs are operated by AET for lightering service to transfer and deliver oil between ships and oil refineries.

The transformation of the vessels into first world's MCVs was completed by Drydocks World, located in Dubai shipyard, UAE.

OVERVIEW

Drydocks World is the leading provider of maritime and offshore services to the shipping, oil, gas and energy sectors. In 2013-2014, Drydocks World has completed and delivered two Modular Capture Vessels (MCV) for the U.S: Eagle Texas and Eagle Louisiana. The vessels are the world's first MCVs.

REQUIREMENTS

- Cables and connectors with a longevity of at least 30 years of full operation
- 100% no failure guarantee
- Resistance to severe conditions and variations of heat; resistance to salty water and petro-chemicals
- Ability to coordinate with other parties to kick start the project successfully from the start

SOLUTION

- More than 600 (approximately 300 per vessel) pre-terminated specialist fibre optic and copper based cable assemblies
- The manufacturer is Amphenol Special Connector Division
- Full consultancy, design, project management and implementation solutions

BENEFITS

- A reliable system which guarantees full performance with no faults
- The ability to use the installed system right away for various purposes, with various types of 'pods'

OTHER INFORMATION

- Location: Dubai, UAE
- Final Destination: Texas, USA
- Project duration: 1 year
- Year of implementation: 2013
- Value of project: 9 mln AED
- Team: 10 people per vessel
- Customer website: www.drydocks.gov.ae
- More info on MWCC and MCVs: www.marinewellcontainment.com

"We have once again proven our exemplary project management capabilities, engineering solutions, commitment to the industry and the drive to face challenges in delivering pioneering projects with world leaders like AET and MWCC. This is a pioneering project. A newly-fabricated subsea containment assembly will attach to risers and other containment equipment to direct the flow of fluids to the MCVs for processing and storage. We are delighted to have been associated with this ground-breaking project. This accomplishment also represents two million man-hours without a single Lost Time Injury, which together with the four million man-hours on Eagle Texas is quite an outstanding achievement."

H.E. Khamis Juma Buamim,
Chairman of Drydocks World and
Maritime World

Source: <http://worldmaritimeneews.com/>



Amphenol

THE REQUIREMENTS

Followed by a successful collaboration between Drydocks World and FOSS for oil rigs project in Abu Dhabi, Drydocks World approached FOSS with the MCVs project, which included consultancy, design, project management and implementation works. Even though the work scope of the shipyard included installing various components, FOSS was entrusted the task to install more than 600 (300 per vessel) pre-terminated specialist fibre optic and copper based cable assemblies that would support various on deck and control services.

FOSS had to install cables and connectors that have to last for 30 years and more with 0% failure. They had to be resistant to stringent environmental, chemical and temperature conditions (-50C-50C range). The FOSS team had to be able to work in the heat of the Dubai summer, on the ship (metal base), without any air conditioning, while handling with particular precaution the connection process of cables, which are unique of their type.

THE SOLUTION

All pre-terminated specialist fibre optic and copper based cable assemblies include power, data, voice, CCTV and control connectivity. All connectors were manufactured from solid stainless steel rod in factories in the USA, and then shipped to Dubai, UAE, where they were assembled and terminated onto the very specialist and environmental tolerant cable. After being rigorously tested they were sent on board of the ships to be installed point to point. The 'on board' connector ends were then mounted onto pre-designed and manufactured break-out panels for easy identification and access. The connectors were very pricey, some of them reaching the cost of \$1000 each.

At every stage of project implementation, constant testing and quality checks were carried out. This was essential as once deployed in the field it would have been very difficult to repair or replace.

THE CHALLENGE

One of the major problems FOSS had to overcome was interfacing all the various contractors and technical consultants on the project. The part which FOSS was responsible for was a section in the end to end connectivity solution, while other parties were responsible of specific sections of the entire chain. FOSS team had to gather all the information and map the complete solution in order to make the full solution interface functional from the start. This task was difficult and time consuming. It implied coordination with other parties and in many cases changes had to be made in configurations in order for the system to work perfectly.

Another challenge was to install all cables right from the start as they are impossible to remove due to the increased number, the routes they take and accessibility.

The health and safety regulation on these vast and potentially hazardous ships was immense. Full protection had to be worn at all times including climbing harness and full boiler suits as well as all the normal full PPE. All our staff had to go through several days of the DDW training courses for safety and awareness.

THE BENEFITS

The main use of this system is to be able to quickly change services at strategic situations handled by the vessels. Various customized pods could be brought on to the ships at short notice, depending on what options the ships are to be fitted for and what emergency they are to attend. The pods can be connected to the services via new cabling infrastructure as required, fast and without failure.