

MILESTONE COMMISSIONING PROJECT

EnerMech’s landmark deepwater nitrogen membrane project on the Gulf of Mexico



CLIENT
Major US Energy Infrastructure Company

YEAR
2024

BUSINESS LINE
Energy Solutions

The Challenge

In 2023, EnerMech faced the challenge of executing a complex pre-commissioning project for a major US. energy infrastructure company in the Gulf of Mexico. The project required deploying the largest nitrogen membrane spread in the organization’s history – specifically, a 10,000 SCFM nitrogen spread at a water depth of 8,800 feet. This was the first instance of such a large-scale operation in the region, necessitating a high level of coordination and efficiency. The integration of multiple specialized services for oil and gas export pipelines was crucial, as the project involved flooding, cleaning, gauging, hydrotesting, and dewatering.

The Solution

To address these challenges, the team delivered a comprehensive turnkey service that streamlined operations by eliminating the need for third-party providers. The project began with the contract award in August 2023 and was completed over an 11-month period. Key components of the solution included:

- Chartering three light construction vessels (LCVs) and utilizing coiled tubing.
- Designing and fabricating custom pig launchers and receivers.
- Deploying specialized equipment, such as the remote flooding console (RFC) and subsea test pump (STP) to manage free flooding and hydrotesting.
- Implementing multiple high-flow triplex pumps for the hydrotesting of the oil export pipeline.

The Outcome

The successful completion of this milestone project not only marked a significant achievement in EnerMech’s operational capabilities but also demonstrated its deepwater expertise and commitment to providing turnkey solutions. The project was delivered to the highest standard, establishing a strong relationship with the US midstream operator and showcasing the effectiveness of direct collaboration. The successful deployment of the nitrogen membrane spread and the execution of critical services contributed to significant project efficiencies and a timely delivery.

The project team consisted of 30 skilled offshore personnel, including field supervisors, engineers, and technicians, who operated from EnerMech’s Houston base to ensure safe and efficient project execution.

Key Stats: Services Delivered

- Oil Export Pipeline**
- Flooding, cleaning, and Gauging: 50 micron filtered seawater with dye injection.
 - Free flooding: 700 gpm @ 1 ft/s & booster pump 250 gpm @ 0.4 ft/s.
 - Hydrotesting: filtered seawater with no chemicals, test pressure of 4,724 psig using EnerMech NLB 605 triplex pumps.
 - Dewatering: injected ~16,000 gallons of MEG in the pig train.
- Gas Export Pipeline:**
- Flooding, cleaning, and gauging: 50 micron filtered seawater with dye injection.
 - Free flooding: 700 gpm @ 1 ft/s & booster pump 250 gpm @ 0.4 ft/s.
 - Hydrotesting: filtered seawater with no chemicals, test pressure of 4,724 psig using EnerMech STP.
 - Dewatering: 10,000 SCFM of 95% nitrogen using 2-7/8” coiled tubing at 8,800 ft, injecting ~10,000 gallons of MEG.

8,800 FEET WATER DEPTH | 24 MILES, 18” WATER EXPORT PIPELINE | 25 MILES, 18” GAS EXPORT PIPELINE

