

CASE STUDY: INFRASTRUCTURE & INDUSTRIAL

ENHANCING INTEGRITY THROUGH INTEGRATED JOINT MANAGEMENT

Delivering multi-discipline services and digital joint tracking to support the safe construction of the Egina FPSO.



CLIENT

Samsung Heavy Industries

YEAR

2016 - 2017

BUSINESS LINE

Energy Solutions

The Challenge

Samsung Heavy Industries required a comprehensive solution for flange management, leak testing, and valve integrity during the construction of the Egina FPSO.

The project involved over 6,500 joints and required strict quality control, documentation, and traceability across both onshore (Korea) and offshore (Nigeria) scopes.

With multiple failed joints prior to EnerMech's engagement, the challenge was to restore confidence in joint integrity, train local personnel, and deliver a system that could support both execution and future maintenance planning.

The Solution

EnerMech deployed a multi-skilled team of up to 60 personnel at peak, delivering a full suite of services including flange management, leak testing, machining of Techlok hub joints, and PVSV valve testing. Central to the delivery was EnerMech's proprietary System Integrity Management (SIM) software, which enabled real-time tracking, documentation, and control of every bolted connection.

SIM was used to generate all project documentation and work packs for approximately 6,500 joints and 97 leak test packs. The team also machined over 40 Techlok hub joints that had previously failed inspection and tested around 50 PVSV valves.

In parallel, EnerMech trained over 1,000 SHI employees in controlled bolting practices to raise site-wide standards.

The Outcome

Our team's integrated approach ensured full traceability and quality assurance across all joint integrity scopes.

The use of SIM software provided real-time visibility for the client and enabled efficient planning for future maintenance and shutdowns.

By addressing previously failed joints and upskilling the workforce, EnerMech helped raise the overall standard of mechanical integrity on the Egina FPSO. The project was delivered safely, efficiently, and with a strong foundation for long-term asset reliability.

We Delivered...

- Flange management and leak testing for 6,500+ joints
- 97 nitrogen/helium leak test packs across onshore and offshore scopes
- Machining of 40+ Techlok hub joints and testing of 50 PVSV valves
- Training of 1,000+ SHI personnel in bolting best practices
- Real-time digital tracking and documentation via SIM software

Digital Integrity Management

6,500+ joints tracked and controlled using SIM software for full lifecycle traceability.

Workforce Upskilling

1,000+ SHI personnel trained in bolting practices to raise site-wide quality standards.