

Seadrill - West Atlas (MODU) Pre-load Tank Side Plate Hull repairs

The West Atlas Jack Up (MODU) was owned and operated by Seadrill and at the time contracted to work the Montara field, situated in the Timor Sea 650 Kms from Darwin.

The West Atlas had sustained serious damage to two of its pre-load tanks, during separate incidents that required extensive and immediate repairs.

ICON was contracted to Project Manage the Class (ABS) specified repairs to both tanks.

The side shell of Tank 34 at the transom was deformed to a depth of 50mm along its height in one local area. This required the internal frames and horizontal stiffener angles to be cut out and replaced.

With Tank 5, the side shell was bowed out to 75 - 100mm and required extensive frame bracing and horizontal stiffening beams to be cut and replaced over an area of 7 metres wide.

Key features of the project included :

- Project Management.
- Engineering procedure and method development. For the repair, long lengths of large section beams were required, all having to pass through the existing small diameter manway and access hatches.
- Engineering, fabrication and assembly of installation aids.
- Material specification, class requirement pre-certification, procurement and logistics.
- Offshore confined space entry, hot works, rigging and scaffolding.
- Management and Liaison with Class (ABS) representatives.
- Sub-contractor liaison and coordination.



Extensive in-tank scaffolding required.



Gas Arc cutting the frames free from the side plate.

Project Management

ICON developed a number of replacement repair strategies. Each option was presented and Icon conducted both Risk and Hazard reviews, plus workshopped scenarios with the client. A clear procedure was developed, with the risks already identified to be actioned and controlled.

Management included office based engineering, scaffold contractor management, material purchase and class certifications (ABS), logistics for men and materials, detailed rigging studies, installation aid design, painting contractor management, confined space (tank) entry, offshore installation and proving of the tanks post works using pressure / leak testing.

Throughout this project West Atlas had to maintain its complex and expensive drilling and service schedule, therefore the tank repair schedules were dynamic and critical dead lines were ever present.

Various different trade skilled sub-contractors were utilised and managed by ICON, necessitating constant liaison, supervision and planning. This included onshore logistics and offshore supervision.

Engineering

The extensive deflections of the side plates once the damaged beams and bracing steels were cut free for replacement were very hard to quantify and predict. There were many scenarios possible and ICON engineered a method to control these movements and pull the tanks back in to shape with the new steels back to original design measurements, using industry best practice, intelligent design and latest technology.

Procurement

ICON sourced, procured and managed the logistics and fabrication of all permanent items for the project.

Leak testing.

ICON developed and performed a detailed leak testing procedure to prove the repairs were class certificate worthy.