

Responsive engineering services for rapid execution

When Repsol needed to add workforce capacity, Atos managed the associated engineering challenge



On any off shore platform, safety is always the number one priority. Repsol needed to increase the size of the workforce on its Casablanca platform in the Western Mediterranean, in part to reduce the number of connecting helicopter flights from the mainland. Increases in the workforce required additional emergency evacuation resources. Repsol commissioned the specialist Atos engineering unit to undertake all aspects of the design project.



“The evacuation modifications to the Casablanca platform needed to be carried out rapidly and to the highest standards. The Atos engineering team were faultless: meticulous in everything from planning and design through to supervision and testing.”

Victoriano Páez Vernalte

Head of Facilities and Construction Engineering

Background

Operational since the early 1980's, the Casablanca platform was given an extended operational life when previously uneconomic deposits became feasible thanks to new exploration and extraction techniques. The original rig workforce capacity of 65 needed to be extended to around 100.

This in turn, required another lifeboat station to be added to the platform, able to manage the safe and rapid evacuation of 40 members of the workforce in the event of an emergency.

Repsol commissioned the specialist Atos Engineering Services to design the new lifeboat platform, to appoint the manufacturing company, to supervise installation, and to ensure structural certification from Lloyds Register for insurance and regulatory purposes.

Pre-requisites

Casablanca is a working platform, and all structural and engineering changes would need to be carried out to tight deadlines and with minimum disruption. Planning was critical, along with the ability to maximize on-site fabrication for minimal onsite impact.

The new lifeboat station would need to be designed for maximum safety - and this meant taking evacuation procedures into full consideration. The Atos team would need to work on the platform with the Repsol safety executive to ensure that accessibility was optimized and that the actual lifeboat launch could be executed swiftly and safely.

The freefall forty meter drop to the surface of the sea, for example, would need to be guaranteed free of obstacles, even under emergency conditions.

The Design Process

Before working on the lifeboat station design, the Atos team needed to define the context and conditions of operation.

Adding a new lifeboat station to the platform superstructure needed to take into consideration:

- The stresses of use under fully-loaded conditions - with the lifeboat itself, together with 36 evacuees operating under emergency conditions
- The overall impact on the stability of the whole platform, with special regard to the center of gravity of the platform.

These initial design steps made extensive use of Finite Element Analysis and were examined closely with the Repsol engineering team before work on the actual design began.

Design and Construction Partnerships

The Atos team designed both the mechanical structure of the new lifeboat station and all associated integration with the electrical systems. The design naturally had to take into full consideration the fact that all systems would need to function under the most extreme emergency conditions.

The design team worked closely with the selected engineering partner, Principia SAS. The lifeboat station would be attached to the edge of the Casablanca platform at a height of some 40 meters above the sea, and this demanded that the design paid special attention to the ease, speed and safety of installation.

Melina Meidinger, Structural Project Manager at Principia values the working relationship with Atos, “We have worked with the Atos Mechanical Engineering team on numerous projects. They are always highly collaborative and very technically efficient. On this project, they were particularly conscientiousness when considering the actual process of construction and installation.”

Delivery

Working in close partnership, Atos, Principia and Repsol completed the installation of the new lifeboat station on time and on budget. The speed was thanks in part to Principia's software NSO/ISYMOST, which made it possible to explore different approaches in record time.

“We know Atos best as an IT and IT Service company. This experience with their specialist Mechanical Engineering team has been very satisfying. They have demonstrated both reliability and the flexibility that will be increasingly in demand as new techniques for exploration and extraction evolve.”

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