



## CASE STUDY

# Keppel Shipyard

### Situation

ExxonMobil Development Company (EMDC) contracted Single Buoy Mooring (SBM) to build two Floating Production, Storage, and Offloading (FPSO) vessels at Singapore's Keppel Shipyard. DEKRA was asked to assess and improve safety performance during construction, and in the shipyard as a whole, from 2005 through 2008.

In addition to two FPSO vessels, this mega-project included thirty-six subsea wells, making it the largest subsea development operated by an ExxonMobil affiliate worldwide. DEKRA also partnered with the four other Engineering Procurement and Construction (EPC) contractors supporting safety performance – Acergy, Subsea 7, Technip and Vetco – comprising the remainder of the project team.

The operating environment included a workforce of over 15,000 employees speaking over 15 different languages. Complicating administrative matters, a high proportion of the work was completed by subcontracting companies with complex accountability structures. There was clearly a need to unite the project's divergent stakeholders in order to work toward the common goal of safety.

### Solution

An initial assessment of the Keppel shipyard showed that project supervisors and managers were not providing frequent, high-quality feedback to workers regarding safe and at-risk actions. This finding served as the basis for the design of a Safety Leadership Process (SLP) that would build on other successful initiatives already in place. Key elements of this process included:

- Leadership Observation & Intervention (O&I): Over 2,600 supervisors were trained and coached in how to observe the workforce behaviours and conditions, provide feedback, and solve or escalate safety problems.
- Management Alignment: Over 140 managers were trained and coached in safety leadership. Among the activities they learned were how to conduct regular workplace 'walkthroughs' that demonstrated safety leadership, how to observe and provide direct feedback to members of the workforce at all levels, and how to assess the resolution of safety issues.
- Safety Leadership Assessment: In order to provide ongoing and long-term support for the SLP, 89 senior managers participated in a 360° leadership diagnostic

assessment and developed personal action plans. As leaders executed their plans to improve their effectiveness at leading safety, progress was monitored through the performance management process.

The safety partnership between ExxonMobil, Keppel Shipyard, and DEKRA continues to establish a roadmap for sustainable safety improvement. Keppel Safety Excellence – designed to enhance existing safety programmes as well as introduce new, high-impact safety initiatives – includes recommendations and a two-year safety roadmap to further enhance the safety excellence of the shipyards and continue building the safety culture.

### Results

Safety performance on the project showed significant improvement compared to previous deepwater offshore development projects. Prior to the launch of the Safety Leadership Programme, Keppel Shipyard’s performance showed an improving trend from around .54 incidents per 100 employees per year, to .21 per year. Following the programme’s initiation, Keppel’s incident rate reflected .04 incidents per 100 employees per year. In addition, the shipyard was able to reduce the number of days lost by two and a half times. Keppel’s statistics measured six times better than the industry average, and five times better than their own record before the launch of the programme.

### At a Glance:

- Singapore’s Keppel Shipyard was the site of the largest subsea construction project operated by ExxonMobil Development Company (EMDC).
- DEKRA was asked to assess and improve safety performance during construction, and in the shipyard as a whole, from 2005 through 2008.
- The workforce included 15,000 employees speaking more than 15 different languages.
- DEKRA designed a Safety Leadership Process (SLP) specifically for Keppel Shipyard.
- Results included safety statistics six times better than the industry average, and five times better than the shipyard’s previous record.

