



# Leading Specialist & FPSO Provider enhances permit management

## Need

The company initiated for a Permit-to-work software search to alleviate the complex management of their commissioning stage – as a large part of the projects were subcontracted.

## Challenges

To manage their operations and disparate procedures with a single-integrated system, e-PTW was instrumental to ensure safe execution and effective planning of low and high-risk activities during commissioning phase.

## Benefit

The company's results were efficiency focused - due to streamlining processes and enabling a better-informed workforce, backlogs were reduced. It improved hazard recognition, planning, risk assessments and simplified previous laborious processes.

A leading specialist and a provider of floating solutions (Floating Production Storage and Offloading Vessels (FPSO), Floating Storage and Offloading Vessels (FSO), Floating LNGs, Semi-submersible for offshore oil and gas industry in Japan had substantial and diverse requirements for their FPSO commissioning purposes.

## Large scale process undertaking

Commissioning phase in offshore projects is critical, for the activities consist of checking and testing functions according to their design parameters, include performance tests on mechanical equipment, control systems' operability and functionality. Being a large and complex undertaking that calls for quality planning and preparations in place, this phase guarantees its operability in terms of reliability, performance, safety and data traceability. The possibility of unforeseen events cannot be eliminated and hence an extensive and in-depth risk assessment is carried out (eg. TRA/JHA/JSA).

The key sequence of phases undertaken in a commissioning process is set out as:

- System configuration is checked
- The pipework and system integrity is checked
- Instrumentation system is tested
- All alarms are verified as working
- All lines and vessels are cleaned and calibrated
- All ancillary equipment is inspected and assessed
- A startup and shutdown protocol is established
- Commissioning trials are undertaken
- The plant is hooked up and handed over

The provision of permit-to-work systems is fundamental to offshore activities – it supplements the construction and commissioning activities. Along with LUN, blanket isolations for electrical, mechanical and instrumentation, specialized permits are used to suit the entire offshore project commissioning lifecycle, such as construction, commissioning and Nitrogen-Helium (N2He) permits.

During evaluation, the stakeholders expressed the complexity of their operations and necessitated a digitized permit-to-work system to ease accessibility of information, especially their permits. Paper permits were already in place, but it took arduous efforts to track and trace data, which ultimately lowers focus, accuracy, and coordination. Further, it becomes difficult to locate archive information, ensure information consistency and record critical overlapping data.

## Solution

- ☛ Overview of people and site activities
- ☛ Increase on Hands-on tool time and reduction in preparation of permits (ready-to-use templates)
- ☛ Strict permit-to-work process increases safety while execution
- ☛ SIMOPS-conflict management
- ☛ Optimization in planning increased effectiveness

They needed a comprehensive permit-to-work system to share information, automate routine tasks and reports and ensure following of procedures. For the offshore industry, the commissioning phase is vital since it subcontracts projects to multiple contractors – so its management is their prime focus.

In interactions with ASK-EHS from April 2019, the company focused on integration of the digitized permit-to-work into their own systems.

### A digitized approach to manage permits

For each medium-sized area of a Project, a team of minimum 3-5 people is necessary for the core commissioning phase – the team should contain specialist competence in design, operational analysis and maintenance - a commissioning area manager, operational engineer, mechanical engineer, maintenance engineer and Instrumentation and control engineer. For a larger facility, the involvement gets amplified, and as there are a number of projects simultaneously ongoing in each facility, gravity increases.

On a day-to-day basis, each project consisted of 100 permits – this means involvement of at least 100-200 people on a regular basis.

Also, during the permit process, especially while performing the isolation of various tags (more than 40,000), it was becoming difficult to handle the nomenclature. Reason – 1. Each tag had a unique tag number (more than 20 characters) 2. Every tag was used in multiple permits by multiple people. 3. The manual entries were subject to human error.

Proper transfer of documents, knowledge, procedures and experience to construction and commissioning team remains vital. Efficiency was a factor that the industry aimed to deal with, and the digitized PTW helped in all the complicated tasks allocated on a regular basis.

Lack of consistency in processes can create inefficiencies and be barriers to best practices in-house – non-value add-time in sending e-mails and alerts to the permit stakeholders affected the operational performance. A simple-to-use, intuitive e-PTW platform enabled automated notifications and alerts to help users comply with controls in place for safe operations.

Health and safety requirements increase by several manifolds when there are challenges in managing work permits. ASK-EHS gathered all such requirements and made a visit to Singapore, addressed their concerns, and helped with the setup using their existing permit questions and workflows to allow a seamless transition to a new system.

ASK-EHS designed e-PTW to the highest levels of usability, which was comprehensive, unified and intuitive. The software fulfilled the three key attributes of data that are critical for actionable intelligence – ACT (Accuracy, Completion and Timely availability). Currently, the software has been rolled out across the site after the success of User Acceptance Testing (UAT).



*“Permit tracking enabled gain valuable insights into our risk exposure and the comprehensive reports were helpful in easy building of forecasts and summaries. Further, metrics through dashboards and scorecards, we could create a summary of compliance status – hence aided in compliance management across the sites”*

## Generating efficiency and compliance in permit to work management

A central repository enabled access to defined stakeholders in the permit to work process – especially in the case of isolation tags that contained PID drawings. It made the correct project information readily visible to the concerned industry personnel, including supervisors, construction & commissioning teams, HSE officials and the management.

Through a consistent, accountable and visible process, the system encourages data synchronization and mobile compatibility – in areas where there is a limited access to internet (eg. Engine rooms), limited details can be registered, stored offline and later updated.

Mobility allows field users to work on permits/isolations on location, hence greatly increasing the hands-on tool time and asset utilization, and simultaneously decreasing travel time.

Permits and isolation plans enabled clear oversight of work, efficient execution and reduced waiting time during turnaround. Visibility of permits in each step ensure full supervision of possible permit conflicts, supporting appropriate decision-making processes and offer unprecedented insights into cumulative risk at all times.

By tightly integrating permit-to-work with planning, workforce and equipment, capacities can be coordinated on a deeper level than before. Thus increases the effectiveness and efficiency tangibly.