

4 areas transforming process safety at Oil Search

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Oil Search is undergoing a major transformation from oil field operator to a significant contributor to a world-scale LNG Project, and its PSM revamp is proving to be a journey all its own.

I caught up with **Paul Cholakos, Executive GM – PNG Operations**, to discuss how an integrated PSM framework is being designed to mitigate critical component risks, improve business performance, and ensure long term effectiveness. There are four key areas which are driving the framework:



Paul Cholakos

1. Engagement and culture

Organisational behaviour is being addressed and linked to sustainability of the PSM framework. In 2012, Oil Search widened the safety performance measures, introducing high potential incidents as a component in the Short-Term Incentive Program.

Metrics for the implementation of safety intervention tools were measured throughout the company during 2013, which resulted in increased participation rates. Additionally, improving safety behaviour was realised through a staff survey conducted by a specialist third party, as Paul explains:

“The outcome of this survey was shared across the company, and a long-term action plan was rolled out to address cultural and physical improvements. Some of the measures included reinforcing the technical and operating support resources, running a practical safety leadership training program, introducing a framework for managing workplace behaviours, and establishing a Process Safety Improvement Plan.”

Culture can easily be the make-or-break to a PSM strategy. There are several factors to address in successfully building a strong culture:

- Management commitment
- Policy and principles
- Integrated organisational structure
- Line management accountability and responsibility
- Clear goals, objectives, plans, and metrics
- Effective safety personnel
- Effective communication
- Motivation and awareness

- Procedures and performance standards, audits and observations, incident investigation and training

2. Leadership

Executive management is playing a crucial role in defining the workforce culture and behaviour, and that culture is subsequently influencing the technical competencies of the operations workforce.

Not only will safety be enhanced as a result, but there is also a material business impact. A detailed process safety plan has been developed to ensure the 'case for safety' is clearly communicated within each producing asset across PNG. The plan addresses process design, facility operation and operational competency.

Throughout 2014, a Process Safety Operating Committee will ensure the plan is delivered; whilst a new executive-led Process Safety Steering Group will provide governance for future process safety improvements.

"Leaders establish the values, and can either promote, support or undermine them by the way they behave. It's vital that they drive awareness and knowledge through the processes they establish. Additionally, policies which are developed need to align with the values leaders strive to uphold," Paul observes.

Accountability will play a large role in this effort, in a bid to ensure non-compliant behaviour doesn't compromise the integrity of the Steering Group or the wider PSM strategy. Risks and risk potential are increased when safety is discretionary or only taken seriously at a worker's earliest convenience.

3. Indicators

Lead indicators are a major focus in the transformation. To navigate through the safety space, the organisation requires a safety engine which operates based on commitment, competence and cognisance.

The navigational skills like design, hardware, training, procedures, maintenance planning, budgeting, and communication will provide information about the safety state of the actual process in extracting hydrocarbons.

"Lag indicators are the ones we want to avoid – reactive measures which result from investigating reported incidents. They show when an intended safety outcome has failed," Paul says.

Managers define process safety controls which are required, and need to have a strong familiarity with the system. They need to understand:

- What could go wrong
- What controls are in place to prevent major incidents
- What each control delivers in terms of safety outcomes
- The conditions which ensure controls continue to perform as intended
- What response has been prepared for an emergency situation

In general, organisations develop their process safety indicators, collect data at regular intervals, analyse the information, and compile reports to inform senior management of the deviations from tolerance levels.

Either way, the bulk of information sits in the background; whilst the summary information is presented in a succinct, efficient way for senior management to observe.

But whichever system they are using, managers must not be blinded by the easily measurable performance safety measures.

4. Asset integrity management

Underpinning the safety system review and staff survey is a new asset integrity management system (AIMS). It has been designed to safeguard effective process controls and manage technical safety risks related to company growth objectives.

Each asset within the AIMS is supported by maintenance strategies, and upgrades were also made to pipeline integrity management.

“We’re moving from being an oil field operator to a major gas producer and key contributor to the PNG LNG Project, so several standards have been reviewed to complement the transition. Key risks have already been identified and mitigation tactics set in place,” Paul notes.

In most facilities, every point on the pipeline is subject to gas pressures; from the upstream separation equipment to compression and pumping equipment, and to the tanks and delivery point on the pipelines. Pressure boundaries are considered from the producing area to the terminal, where either the oil or gas is subsequently stored.

An AIMS like the one Oil Search has developed, needs to cover everything within the pipeline and be supported by a program which manages specific components; whether it’s the purchasing piece, construction piece, maintenance piece, or operations piece.

At [Process Safety Management 2014](#), Paul Cholakos will give a detailed case study on Oil Search’s transition. He’ll focus in particular on:

- The business impact of PSM
- Aligning the PSM strategy with business objectives
- Embedding process safety across all plant processes
- Measuring the ROI of PSM

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