2015 Offshore Safety Conference
From Desktop to Deck Plate: A Holistic Approach to Risk Management

CONFERENCE SUMMARY

The presentations and panel discussions covered several key themes related to risk reduction in the offshore oil and gas sector:

1. Earning and Maintaining a Social License to Operate/Regulate
2. Identification of Hazards and Patterns of Risk
3. Risk Reduction Through Data Analysis, Modeling and Simulation
4. Identifying Human Risk Factors, Technological Risk Factors and the Nexus Between the Two
5. Best Practices from Risk Reduction: People and Technology
6. Measuring and Monitoring a Culture of Safety
7. Addressing Risk Through Organizational Shift or Development

Keynote Address
Framing a Holistic Approach to Risk Reduction From Desktop to Deckplate

While risk has often been thought of as hazards and physical threats, a manifestation of a different type of risk has presented an increasing number of challenges to the minerals and energy sector: social risk, exemplified by the concept of a Social License to Operate. In many countries, public awareness of activities related to the energy industry has grown. Societies are examining the costs and benefits of energy-sector projects and deciding whether energy development makes sense for them.

The social license is part of a larger social compact, which also includes legal license and political license, and it presents a major risk to organizations. Research has shown three requirements that have appeared in most of the cases studied: legitimacy, then credibility and finally trust. To gain a social license to operate, an organization seeking to conduct activities in an area of any size – from a rural village to the national level – must engage stakeholders to gain these three things.

All of these stages – legitimacy, credibility and trust – present their own levels of risk. If an organization fails to demonstrate and earn legitimacy at first, it will be rejected and have difficulties moving forward. If it gains that legitimacy, it has the acceptance of its stakeholders

and has the opportunity to prove that it is credible. For example, its operations will benefit the community and mitigate negative consequences.

Finally, there is the stage of trust, where the operator and stakeholders experience, or perceive that they experience, co-ownership. This, in fact, presents the most risk. When people identify with the activity and/or organization they hold it to a higher standard. At that level of social license, losing trust can have serious consequences for an organization and its activity.

The biggest risk that stems from the notion of obtaining a social license to operate is that once its trust is lost, it is hard to regain it. That may translate to a temporary suspension of a project or even the revocation of one's operating permit. For industries whose operations affect targeted segments of a population, like an extractive activity, or society as a whole, like a large manufacturer, earning and maintaining a social license to operate is critical for organizations to consider. While it takes times and resources to earn, organizations face lower chances of success without it.

Session 1. Earning and Maintaining a Social License to Operate/Regulate

Framing Questions: *What is an acceptable level of risk? What do industry and regulators need to do to rebuild trust after significant incidents or lapses? What does industry do to secure the social license, and where does regulatory stakeholder engagement fit?*

The panel discussed several cases of organizations that earned and maintained their social license to operate, as well as others who did failed, and how it affected their success. Across the situations discussed – longstanding onshore gas operations, hydraulic fracturing in new areas, incidents in the cruise line industry, and changes in authority for an offshore energy regulator – the predictors of success remained the same. Organizations that sought to earn their public's trust by engaging and communicating with their stakeholders succeeded more. Engaging early, and continuing that dialogue, increased the likelihood of success. And once those organizations earned the public's trust, the social license, they had to work to maintain it. Those who did not work to maintain trust – even the ones who had earned it originally – exposed their organizations to the major risk of losing their social license to operate and, potentially, their legal license to operate. While the panelists and participants expressed varying, and sometimes opposing viewpoints, on the roles of regulators and operators to engage the public, they did conclude that communicating early and openly with affected communities was critical to earning and maintain public trust. The session ended with a quote that summarized the discussion well: If you think safety is expensive, try having an accident. If you think social license is expensive, try to operate without one.

Lunch Speaker: Robin West

While the offshore energy sector has evolved in the past few decades, they still depend on the public's approval and they must focus on safety. Operators are extracting offshore resources that belong to the public, and the public – in addition to regulators – punishes safety failures. Safety of the entire process – for operations, workers and the environment – must be the priority, and

they should strive for zero failure, not just to be good enough. That means being accountable and learning from near misses and weaknesses.

Regulators have an important role to play in this, too. They can encourage safety cultures by looking at safety case examples and safety management systems, not only at prescriptive regulation. Additionally, regulators must prepare for the new technologies that the offshore energy sector will use so they can regulate effectively. Working together, operators and regulators have the ability to ensure safe, efficient operations at different oil prices and with new technologies.

Session 2. Identification of Hazards and Patterns of Risk

Framing Questions: *How are different groups addressing unknown risk proactively? How does one manage patterns of risk?*

In high-risk activities, such as power generation, commercial aviation and mountaineering, identifying hazards and patterns of risk early can determine success or failure, life or death. Despite the differences among these high-risk activities, their successes share several things in common: analyzing available data, communicating effectively, and promoting trust.

To address risks proactively, data plays a major role. Organizations must look to the past to identify areas that have caused issues before they start something new. Once they are operational they must continue to monitor for changes that could lead to issues. Comparing the current data to past experiences allow organizations to mitigate as many of the aspects of risk as possible.

While identifying and mitigating risks early is a key component of safe operations, it's not enough. Communicating those observations to all levels so people can address is the next step. In many major incidents across all industries, individuals had identified potential hazards that contributed to the incidents before they happened. Most of those cases had something in common: the lack of a safety culture, of individuals not communicating the issues they observed to the right people. That lack of communication occurs for a variety of reasons, but most dangerous has been lack of trust and empowerment. Trust and empowerment are critical for identifying hazards and patterns of risk successfully. Further, these must exist on multiple levels: between companies and regulators, between companies and the public, and among the employees of a company.

Session 3. Risk Reduction Through Data Analysis, Modeling and Simulation

Framing Questions: *Are we collecting the correct data? What are we doing with the data? How are we using the data to ensure that we improve operations safety continuously?*

It's important to collect data to look for trends, spot anomalies, and address potential issues before they become problems. But it's not enough to gather data just to gather data. Organizations need to look at the types of data that they need, and may need, and then find ways

to collect it. Further, they need to ensure consistency of collection and reporting methods. This does not mean that data should only come from single sources. Diversity in data, and among the thought processes of those who analyze it, is critical to using it in the most effective way. In practice, this means that the higher-level employees – who make decisions based on the data given to them – stand to benefit from going to the sources, the deckplate level, to see how it is collected. Combining that qualitative data with the quantitative data leads to a fuller understanding.

Session 4. Identifying Human Risk Factors, Technological Risk Factors, and the Nexus Between the Two

Framing Questions: *How does one distinguish and address the differences between a technological risk and a human-factor issue? Can they be approached the same way? How does one ensure appropriate competencies for specific operating environments? How are safety alert systems being improve? How can regulators ensure safety alerts are properly heeded?*

The technologies that underlie safety systems evolve constantly and have the potential to create many benefits. For example, increased automation of equipment alleviates stress and taskload for workers. This reliance on automation and IT systems also makes people increasingly dependent on technology. As those systems change over time, those changes, no matter how small they may appear, can lead to serious consequences when managed incorrectly. However, choosing the right technology and training employees about the uses and risks associated with that technology helps to mitigate those risks.

The key to harnessing technology is to recognize that it is a tool, like any other, that workers must learn to use it properly. If the tool, in this case technology, does not match worker skill, it will not be useful and may lead to dangers. Further, managers need to understand the technology that their workers use if they want to manage effectively and ensure safe operations.

Additionally, training on the technology and processes, and learning the consequences of using them improperly, creates awareness of risks. If a worker does not understand the potential safety hazards that inserting an infected USB drive into a computer on an offshore facility can cause, that worker may not hesitate about doing it. This does not mean the worker is careless about safety. It means the worker needs to learn more about the risks associated with new technology and processes.

This also has important ramifications for regulators. As operators rely more and more on technology that has become increasingly complex and connected, regulators must also become knowledgeable in the technology. TO do this, they will need to focus on recruiting tech-savvy employees and ensuring that their current employees have opportunities to pursue technology training.

5. Best Practices from Risk Reduction: People and Technology
Framing Questions: *How does one distinguish and address the differences between a technological risk and a human-factor issue? Can they be approached the same way? How does*

one ensure appropriate competencies for specific operating environments? How are safety alert systems being improve? How can regulators ensure safety alerts are properly heeded?

The energy industry, like other industries, is evolving constantly and developing new ways to increase safety and efficiency. It is moving from analog systems to digital ones, simple to complex. Older, experienced workers are leaving and younger, tech-savvy workers are emerging as future leaders. These changes are unstoppable, and organizations must prepare themselves to address new risks that come with these changes.

Further, this increased use of networked technology introduces another category of risk: third party risk. Operators have relied on contractors and subcontractors to conduct certain aspects of operations for years. Now, as operators rely on networked technology and the industrial internet more than ever, they must consider the strength and resilience of their partners' networks. Those third-party networks, on which operators depend, have the potential to cause problems for operators' own networks.

To manage the risks that may arise from people interacting with new technology and using technology in new ways, organizations need to develop a strong safety culture. This requires leadership and open communication at all levels. Most importantly, it needs workers to feel empowered to say something when they see something that could be a potential issue without fear of repercussion. This is especially important now, as the energy sector workforce turns over, with the older, experienced generation reaching retirement age and taking its vast trove of institutional knowledge with it.

To monitor progress and safety during a time of unprecedented technological evolution, organizations need to collect data in a targeted way. While it is easy to collect large quantities of data, it is difficult to know which to collect and how to interpret them. Despite these challenges, it is critical to ensuring that patterns can be observed in the performance of new systems and processes. Near-miss reporting, one effective type of data collection, is often a feature of strong, positive safety cultures.

Lunch Speaker: Gary Jobson

Competitive sailing is an inherently risky field, with the goal of sailing faster and become safer. Over time, the sailing world has done this by embracing new technologies and looking to other industries for examples. For example, installing GPS trackers on boats serves a safety function and makes it easier to broadcast race updates on television. Ultimately, success in sailing depends on a captain, crew and boat working together in unpredictable and often hazardous situations. This requires a few things: building a team with a diversity of experiences, communicating effectively at all levels and valuing people's input, and paying attention to details.

Group Exercise: Safety Culture Scenario

Conference attendees participated in a group exercise about Safety Culture. The exercise, led by an expert in safety and human factors analysis, presented the details of situations that led to incidents. The tables drew upon their own experiences to identify the factors that contributed to the incidents and suggested ways that the situation could have been averted.

During the readout of the group exercise, the moderator noted that many of the comments revolved around blame. He recommended looking at the situations differently, by trying to identify the learning opportunities and not only looking to assign blame.

Session 6. Measuring and Monitoring a Culture of Safety

Framing Questions: *How can we determine or know when a robust culture of safety has been achieved? Is industry self-monitoring a viable means of achieving a culture of safety? What are viable metrics? What are viable organizational approaches?*

Safety culture is a reflection of the shared values, attitudes and priorities of the people in an organization. It plays a critical role in high-reliability organizations such as oil and gas operators. But just because an organization develops a safety culture does not guarantee that it will maintain that safety culture over time. There is always a risk of complacency, or something else, eroding it. For this reason, measuring and monitoring is key.

Monitoring a culture of safety requires thoughtful metrics that serve a purpose. Collecting data to collect data or setting benchmarks just to have benchmarks is not an effective method for monitoring safety culture. Engaging employees in the process and empowering them to report information will lead to better metrics and monitoring, which indicate a stronger safety culture.

One important set of data to collect is near-miss data and incident data. Without that information, organizations will have trouble measuring their safety culture accurately. This critical information may be difficult to collect, however, in organizations without strong, positive safety cultures. If people are punished for reporting near misses or sharing bad news, they may not contribute that in the future. As a result, the organization has a weaker picture of its safety culture and may miss opportunities for improvement and learning.

Alternatively, an organization may develop a strong safety culture, maintain it well, and meet its benchmarks, but stop looking ways to improve continuously. This, again, illustrates the risk of complacency and underlines the need to engage and empower all people in an organization to suggest improvements. Those suggestions help foster the dedication to safety, learning and continuous improvement that are the hallmark of a strong safety culture.

Session 7. Addressing Risk Through Organizational Shift or Development

Framing Questions: *Is your organization a learning organization? Can you learn from positive experiences as well as negative ones? How can you effect meaningful change within management, financial or political constraints? How do you promote continual improvement to*

an organization's management of risk? How do you move an organization from concept to application of risk reduction?

Building a successful learning organization is a challenging task. It requires dedicated leaders who engage their employees, a commitment to excellence, and open communication. The organizations that engage their workers, from the top to the bottom, and make excellence everyone's goal, succeed the most.

The energy sector does work that is important to society. Organizational learning, and moving from compliance to excellence, are fundamental for doing business because they separates the average firms from the best firms. The firms that strive for excellence and engage their workers will survive and thrive.

The discussion that followed the group exercise proved this point. Many people had different and relevant experiences to share, and they all added to the discussion. An organization that strives for learning and excellence will encourage its people to share these experiences since they strengthen the systems and processes upon which the organization depends. In an organization that strives for neither learning nor excellence, workers may not share their insights and recommendations, and the organization loses valuable insights. This situation must be fixed at the system level, not the individual level. Ultimately, creating organizations that encourage learning requires employee engagement and involvement.

While building learning organization in the energy sector focuses primarily on organizations themselves, not on the regulators, regulators still have a role to play. Though regulators do not set political priorities or determine budgets, they can use their positions to spark debates and influence certain areas. The challenge for regulators is to identify those areas and focus on changing what they can change.