

Strengthening the Safety Culture of the Offshore Oil and Gas Industry **A Workshop**

October 12, 2016
***National Academies of Sciences,
Engineering, and Medicine***
Houston, TX

Committee

Nancy T. Tippins, *Chair*, CEB

Deborah A. Boehm-Davis, George Mason University

John S. Carroll, Massachusetts Institute of Technology

Elmer P. Danenberger, III, Minerals Management Service (retired)

David A. Hofmann, The University of North Carolina at Chapel Hill

William C. Hoyle, U.S. Chemical Safety and Hazard Investigation (retired)

Robert Krzywicki, DuPont (retired)

Todd R. LaPorte, University of California, Berkeley (emeritus)

Karlene H. Roberts, University of California, Berkeley (emerita)

Peter K. Velez, Peter Velez Engineering, LLC

Timothy Vogus, Vanderbilt University

James A. Watson, IV, American Bureau of Shipping

Warner Williams, Chevron Corporation (retired)

***James Card**, U.S. Coast Guard (retired)

*Marine Board Liaison

Study Goal and Tasks

Goal: Aid industry, government, and other stakeholder efforts to strengthen offshore industry safety culture.

Tasks:

- Identify
 - essential characteristics of a strong safety culture;
 - barriers to achieving a strong safety culture in the offshore industry;
 - strategies to measure and assess safety culture effectively; and
 - the role of the regulators in achieving a proper safety culture.
- Recommend
 - options for industry, regulators, and policy makers to strengthen offshore safety culture; and
 - research to close knowledge gaps.

Study Goal and Tasks

- The study goals are focused on establishing and maintaining an effective safety culture in the offshore oil and gas industry.
- These goals do not include increases in regulation.

Outline of Report

1. Introduction
2. Safety Culture Background and Definitions
3. History of Offshore Industry Safety Experience
4. Offshore Safety Regulation Pertaining to Safety Culture
5. Safety Culture Assessment and Measurement
6. Implementing Change in Offshore Safety Culture

Report

- For a copy of the full report please visit:
<https://www.nap.edu/catalog/23524/strengthening-the-safety-culture-of-the-offshore-oil-and-gas-industry>
- For a copy of the report abridgment please visit:
<http://www.trb.org/Main/Blurbs/175037.aspx>

Safety Culture Definition

BSEE definition

- “The core values and behaviors of all members of an organization that reflect a commitment to conduct business in a manner that protects people and the environment.”
- shares elements (next slide) common to most other definitions; and
- elements are grounded in empirical research.

Industry and regulators should adopt this definition and its essential elements.

Essential Elements - “BSEE 9”

- Leadership commitment to safety values and actions;
- Respectful work environment;
- Environment for raising concerns;
- Effective safety and environmental communication;
- Personal accountability;
- Inquiring attitude;
- Hazard identification and risk management;
- Work processes; and
- Continuous improvement.

Include in RP 75

Safety Culture Barriers

- Safety culture is an ambiguous concept that is difficult to measure
- Varied leadership commitment across organizations
- Fragmented and diverse industry
- Gradual, uneven shift in industry culture from risk-taking to commitment to occupational and process safety
- Regulators have difficulty building expertise to support industry transformation.

Recommendations to Industry

- Adopt the BSEE definition of safety culture and its essential elements.
- Encourage collective and collaborative actions to effect change across industry.
- Define, in collaboration with regulators, the optimal mix of regulation and voluntary activities to strengthen safety culture across entire industry.
- Create guidance on safety culture expectations and responsibilities for operators, contractors, and subcontractors.
- Amend Recommended Practice 75 to add a safety culture chapter.

Recommendations to Industry (cont.)

- Offshore industry should have an independent safety organization modeled after the Institute of Nuclear Power Operation (INPO).
 - Make Center for Offshore Safety fully independent of API or create new, fully independent organization committed solely to safety.
 - Participation in the independent safety organization should be a key element of the fitness to operate for operators, contractors, and subcontractors working in the offshore industry.

Recommendations to Company Leadership

- Commit to and be personally engaged in the long and challenging safety culture journey.
- Assess safety culture regularly as part of SEMS using multiple assessment methods and indicators.
- Build internal company competence in safety culture by using internal resources, external assistance, or both.
- Take advantage of resources available from other companies, industry associations, and regulators.

Recommendations to Regulators

- Rely on risk principles in determining inspection frequency and methods:
 - shift from compliance-based to risk-based principles of SEMS, and
 - rely on audit results for inspection programs and schedules.
- Define data reporting requirements (what data, what agency, what schedule).
- Determine critical accident precursors.
- Improve transparency of incident, accident, and inspection data (subject to confidentiality requirements).

Recommendations to Regulators (cont.)

- Secretary of Interior and USCG Commandant should seek prominent industry leaders to
 - champion safety culture improvement,
 - develop guidance and share it among companies,
 - facilitate information exchange.
- Develop BSEE, USCG, and PHMSA Memorandum of Understanding regarding:
 - safety culture concepts,
 - complementary implementation plans,
 - accountabilities.
- Develop competence in safety culture assessment to offer advice, training, tools, and guidelines to industry.
- BSEE should become clearinghouse for information.

Key Research Questions

- What core competence do companies require to enhance safety culture?
- What assessment methods are appropriate for companies of different sizes and types?
- How does an organization sustain progress and avoid complacency?
- What is the best way to develop industry-level data on near misses, incidents and safety culture measures?

Research Questions (cont.)

- What is the best method to share lessons learned across a diverse, fragmented industry?
- What is the best way to encourage decision makers across the industry to enhance safety culture?
- What are the most effective and efficient strategies to enhance safety culture?
- What safety culture elements have the most impact on safety outcomes?

Opportunities for Discussion

- July 27th - OOC SEMS Forum
- August 9th - RP 75 Rewrite Committee
- September 20th - 21st - Leader meeting at COS Safety Forum
- October 4th - 2016 IADC Human Factors Conference
- October 12th - National Academies of Sciences, Engineering, and Medicine Houston Workshop (Marriott West Loop by the Galleria) to review recommendations and discuss questions
- November 1st -2nd - USCG NOSAC Committee
- May 2017 - Planned Topical Lunch at OTC

Agenda for Today

- 8:30 **Opening Remarks and Overview**
Nancy Tippins, Committee Chair
- 8:55 **Discussion with Regulators of the Offshore Oil and Gas Industry**
Brian Salerno, BSEE
RADM Paul Thomas, USCG
James Watson and James Card, Facilitators
- 9:40 **Coffee Break**
- 9:50 **Discussion by a Panel of Major Operators**
Marilyn Tears, ExxonMobil
Rich Howe, Shell E&P
Steve Thurston, Chevron
Warner Williams, Facilitator

Agenda for Today

- 11:20 **Discussion by a Panel of Independent Operators**
Charles Dudek, Murphy Oil Corporation
Katherine Gamble, Renaissance Offshore
Jason Sullivan/Patrick Eiland, Stone Energy Corporation
Steve Frantz, Talos Energy LLC
Peter Velez, Facilitator
- 12:50 Lunch Break (lunch to be provided)
- 1:20 **Discussion by a Panel of Contractors and COS**
Jack Hinton, Baker Hughes Inc.
Tom Burke, Rowan Companies
Charlie Williams, COS
Peter Velez, Facilitator

Agenda for Today

2:50 Final Remarks

Nancy Tippins

Peter Velez

3:30 Adjourn

Guide Questions for Panel Discussion (Regulators)

- Of the five general areas of the recommendations for regulators (use of safety management principles, data collection, champions, MOU, assessment) which is the most important? Why?
 - Would you amend any of the recommendations or add others?
- What is the role of the regulator leadership?
 - What are the challenges when leadership changes occur in the regulatory body?
- How can industry leaders best work with regulators to achieve an industry-wide safety culture?

Guide Questions for Panel Discussion

(Regulators)

- Do you disagree with any of the study committee's recommendations to the industry?
- What are the most important areas that need further study?
- What regulator policy, process, or training adjustments are needed to support an industry-led safety culture initiative?
 - How quickly can these adjustments be made?

Guide Questions for Presentations

(Major operators, independent operators, contractors)

- *Discuss the safety culture journey of your organization*
 - How does your organization's definition of safety culture differ from the BSEE definition?
 - How do you measure safety culture?
 - How do you engage the members of your organization and sustain their interest and commitment to safety? What role have your leaders taken in the safety culture journey?
 - What are the challenges you've encountered in fostering a safety culture as a major operator, an independent operator, and as a contractor?

Guide Questions for Presentations (cont.)

- What plans do you have to take your company's/organization's safety culture to a higher level? What are the barriers that you anticipate in going to the next level of safety in your company?
- For operators: as an operator, what are the challenges that you encounter with the contractor community in improving their safety and safety culture?
- For contractors: as a contractor, what are the challenges that you encounter with the operator community in improving safety and safety culture?

Guide Questions for Panel Discussions

- *What are your thoughts on the committee's recommendations?*
 - Among the recommendations, which two or three recommendations do you think are most important, urgent, or valuable for the industry? What would it take to get them implemented?
 - Are there recommendations with which you disagree? If so, how would you amend them? Is there something the committee left out that should have been included?
 - Which recommendation(s) would your organization be interested in championing?

Guide Questions for Panel Discussions (cont.)

- What would be your company's/organization's next steps in raising the offshore industry safety culture to the next level?
- In a fragmented industry such as oil and gas, what recommendations do you have for engaging all sectors of the offshore industry in order to advance safety culture?
- What should be the role of industry associations and organizations like COS and OOC?

Guide Questions for Panel Discussion (cont.)

- What needs to be in place in order to: 1) achieve a complete and accurate national database of safety incidents; and 2) improve the use of incident data to understand safety culture and identify opportunities for improvement?
- As an operator/contractor/subcontractor, how can you best work with the regulators (how you and the regulators can best work together) to create a robust industry-wide safety culture?

QUESTIONS?



The National Academies of
SCIENCES • ENGINEERING • MEDICINE


TRANSPORTATION RESEARCH BOARD

