Strengthening the Safety Culture of the Offshore Oil and Gas Industry

TRB Special Report 321: Strengthening the Safety Culture of the Offshore Oil and Gas Industry offers recommendations to industry and regulators to strengthen and sustain the safety culture of the offshore oil and gas industry. The report presents a definition of safety culture for government regulators and industry to adopt, discusses the elements of a strong safety culture and ways for assessing it, identifies barriers to strengthening safety culture, and offers recommendations to overcome these barriers.

The Bureau of Safety and Environmental Enforcement (BSEE), one of the regulators of the offshore oil and gas industry, issued a policy in 2013 that defines safety culture as "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." The policy articulated nine characteristics of a robust safety culture:

1. Leadership commitment to safety values and actions
2. Respectful work environment
3. Environment for raising concerns
4. Effective safety and environmental communication
5. Personal accountability
6. Inquiring attitude
7. Hazard identification and risk management
8. Work processes
9. Continuous improvement

The committee recommends that the offshore industry and government regulators adopt the BSEE definition of safety culture and its essential elements as a guide for assessment and practice.

Safety Culture Barriers

Safety culture is an ambiguous concept that is difficult to measure. Moreover, within the offshore oil and gas industry, drilling and production require complex technology that is used offshore and take place under many different organizational arrangements. Because of this heterogeneity, it is challenging to set uniform rules, reach industry-level agreements, or even share information, let alone promote a culture of safety across all organizations.

Recommendations to Industry

Successful culture change is a long-term effort that entails considerable uncertainty and necessary investments and requires sustained commitment from senior leadership. Behaviors and relationships will be disrupted, and safety culture initiatives need to be supported through the lengthy change process. However, there are many examples of successful culture change in such industries as nuclear power, aviation, the chemical industry, and the military, as well as in the offshore oil and gas industry.

Industry leaders should encourage collective and collaborative actions, including working with federal regulators, to define the optimal mix of regulations and voluntary activities needed to foster a strong safety culture. Working with regulators, the industry as a whole should create guidance for establishing safety culture expectations and responsibilities among operators, contractors, and subcontractors.

The committee underscores the need for an independent organization, focused solely on safety and protection against pollution with no advocacy role. Membership in this independent organization should be a key element

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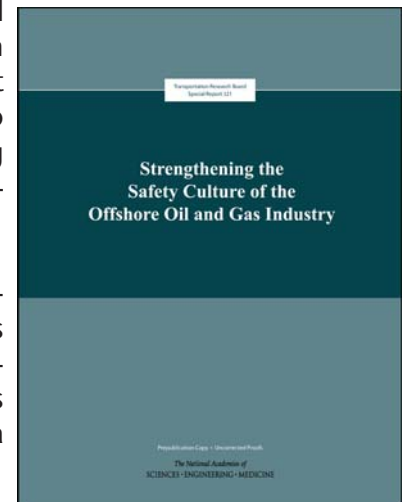
of the fitness-to-operate criteria for all organizations, including operators, contractors, and subcontractors, working in the offshore industry.

To strengthen and sustain safety culture, company senior leadership must commit to and be personally engaged in a long and uncertain safety culture journey. Senior leaders in each company involved in offshore operations and leaders of industry associations must consistently demonstrate their commitment to safety, aligning their actions with their words. The industry as a whole, led by the more progressive operators, contractors, and industry associations, needs to be thoughtful about extending safety culture to the heterogeneous organizations and workers in the offshore industry.

Convincing senior leadership to embrace safety culture may involve leveraging industry resources, receiving regulatory encouragement, visiting workplaces personally to view safety problems and useful improvements, benchmarking with other companies, and engaging external help.

Recommendations to Regulators

Regulators should make greater use of risk principles in determining inspection frequencies and methods, such that operators with good performance records are subject to less frequent or less detailed inspections. Inspectors should consider shifting from traditional compliance inspections to inspections that follow the safety management approach outlined in the Safety and Environmental Management Systems standard. Audit results should be considered in developing inspection programs and schedules.

There should be transparency with accident, incident, and inspection data because all are needed to identify and understand safety risks and corrective actions. Regulators should make these data readily available to the public in a timely way, taking into consideration applicable confidentiality requirements.

The Secretary of the Interior, in cooperation with the Commandant of the U.S. Coast Guard, should seek prominent industry leaders to champion the nine characteristics of an effective safety culture identified by BSEE, develop guidance for safety culture assessment and improvement, and facilitate information exchange and sharing of experiences in promoting safety culture. BSEE, the U.S. Coast Guard, and the Pipeline and Hazardous Materials Safety Administration should develop memorandums of understanding specifically addressing plans for establishing offshore safety culture and defining accountabilities among the three regulators.

BSEE should help the offshore industry work collectively on the challenges of developing a strong safety culture by serving as a clearinghouse for and a facilitator of industry-level exchanges of lessons learned and benchmarking.

Key Research Questions

Regulatory agencies, industry organizations, and other participants in the offshore industry need to work together to facilitate research and information sharing so as to advance knowledge and practice. The committee identified specific areas of research where knowledge gaps exist, including ensuring, assessing, and sustaining competence in different types of offshore organizations; developing industry-level data on safety outcomes, near misses, and safety culture measures that can be shared and compared across organizations over time; sharing information and lessons learned across companies in a fragmented and diverse industry; encouraging decision makers to enhance safety efforts; and identifying strategies for enhancing safety culture.