

# OCEAN ENERGY SAFETY ADVISORY COMMITTEE

May 17, 2012

Mr. James A. Watson  
Director  
Bureau of Safety and Environmental Enforcement  
1849 C Street, N.W.  
Washington, D.C. 20240

Dear Director Watson:

On behalf of the Ocean Energy Safety Advisory Committee (OESC), I would like to submit five recommendations to the Department of the Interior (DOI) and the Bureau of Safety and Environmental Enforcement (BSEE) for consideration and action. Over the course of the past year and a half, the four OESC subcommittees have been working hard to research and formulate several topics for full Committee consideration. At our recent April 26, 2012, meeting in Houston, Texas, Committee members determined these five recommendations listed below ready for submission to DOI and BSEE.

Please accept these submissions as the OESC's first formal recommendations to DOI/BSEE.

- **Safety Management System Enhancement:**  
DOI/BSEE should redirect further work on Safety and Environment Management Systems (SEMS) II as proposed and concentrate its effort on addressing four critical issues with the current SEMS regulations; jurisdiction, responsible party, performance-based approach and process safety management. If these four issues are not addressed, it could have a negative impact on overall safety of offshore personnel and OCS environment. We further recommend that BSEE find means to implement those elements of SEMS II that are consistent with the concerns expressed by this Committee in Vector #2, Topic #1 document, dated April 10, 2012. See Reference Document #1 for details on recommendation.
- **Safety Culture:**  
DOI/BSEE should establish an Offshore Leadership Safety Council (OLSC) that includes: key executives of regulatory bodies involved in offshore drilling and operations; key executives from industry, operators and contractors; as well as key representatives from stakeholder organizations. The role of the OLSC is to focus on:
  - a) Developing, communicating and fostering a safety culture for the industry which provides a common value and common set of objectives, which will evolve regularly.

- b) Formulating a safety culture recognition program that motivates organizations to develop and foster their safety culture. Focusing on leadership behaviors and leadership communication of the safety values of their organization.
- c) Encouraging and incentivizing engineering schools to include elements of safety engineering programs. Focusing not only on process safety, or systems safety, but also on safety awareness and engraving safety mentality early in the engineering education process.
- d) Encouraging industry to develop a structure for conducting independent, consistently detailed accident and near accident investigations and reporting them to the industry and regulators.

The OLSC is meant to be the forum at which the leaders of all stakeholders and regulators come together on a regular basis, quarterly, or yearly to check the pulse of the safety in the industry and to provide direction and leadership.

See Reference Document #2 for details on recommendation.

- **Leadership and Communication Training:** BSEE/DOI shall work with industry along with the support and guidance of the OLSC to develop leadership and communications safety training requirements that will ensure that the safety values and objectives that are agreed at the OLSC are communicated, discussed and cascaded to the industry workforce through the leadership of the industry starting from the Secretary of the DOI, the Director of BSEE, the top executives of the operating companies, the top executives of contractors, and all the way to the members of the facility operating staff. The message should be carried and disseminated through all levels of the organization from managers by managers and supervisors to the workforce. The focus of the OLSC should be on developing the requirements and ensuring a proper environment exists within industry to foster the development of the right safety culture.

The OLSC is encouraged to work closely with the Center for Offshore Safety which can support managers and supervisors with the required training for them to be able to properly communicate the changes in values and behaviors necessary to achieve a strong safety culture. See Reference Document #2 for details on recommendation.

- **Workshop on Organizational and Systems Readiness for Containment Response:** DOI/BSEE, in consultation with other federal agencies, should immediately commission the development of a workshop to debrief government, industry, and academic resources involved in the Deepwater Horizon (DWH) source control efforts to discuss lesson learned and chart a path forward in responding to future oil spills.

- **Assessment and Development of Research Priorities for Containment of an Non-Capable Blowout:** DOI/BSEE would immediately begin synthesis of DWH reports on organizational and system readiness pertaining to source control.

In addition to our submission of these five recommendations, I would like to provide a brief update of two major areas highlighting our progress to date: Status of subcommittee work and Arctic issues discussions.

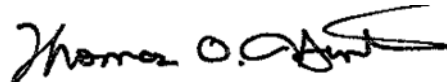
Each of the four subcommittees provided an update on the status of their work during this past Committee meeting. Although I cannot speculate on the outcome of future deliberations, I envision several more formal recommendations will be submitted to DOI and BSEE in 2012.

Committee members also engaged in a discussion on the role of the Arctic in the OESC's purview. Specifically, I requested that the Committee members deliberate and vote on these two topics for action:

- The Committee will make the decision to create a separate subcommittee within the OESC at the end of the year, together with decision to extend or terminate the current OESC
- Ask each subcommittee to continue and support Arctic issues to help frame work for a future Arctic subcommittee

We look forward to your response on the five formal recommendations and any other input you may have for the Committee at your earliest convenience.

Sincerely,



Thomas O. Hunter  
Chairman  
Ocean Energy Safety Advisory Committee

Enclosures

## **Recommendation Document #1**

The Committee feels that this recommendation and its subparts will fortify and strengthen the current SEMS regulations to significantly improve safety on the OCS. Focusing on the current SEMS regulations first will allow BSEE to resolve the numerous jurisdictional, applicability, terminological, implementation and enforcement issues with the SEMS regulations before they issue new regulations that may compound these problems. The Committee believes that BSEE needs to work with other regulatory agencies to ensure that SEMS covers all operations and activities, clearly identifies responsibilities and requirements, places more focus on process safety management, and makes the SEMS regulations less prescriptive.

The Committee understands this recommendation will delay the proposed safety elements found in the SEMS II regulations. However, it is the opinion of the Committee that the SEMS II regulations, if published as proposed, would have to be overhauled to make them more performance based which would cause them to conflict with the original SEMS regulations and delay the critical work on improving the structure of SEMS. For any elements of SEMS II that are clearly performance based and fully aligned with the recommendations in this Vector summary, the subcommittee supports BSEE to implement these aspects of SEMS II in the near future, as long as work on the vital improvement areas recommended below is not delayed.

The Committee feels strongly that BSEE needs to focus on the key issue of how to improve the SEMS regulations and its implementation process. The Committee believes that BSEE can achieve this by better utilizing the American Petroleum Recommended Practice 75 (API RP 75), incorporated by reference in the SEMS regulations. API RP 75 is robust and if implemented properly it can be used as the baseline document to develop an optimum safety management system for the U.S. OCS. The Department of Interior should seriously consider this recommendation and begin to address the following four areas that have been identified by the Committee as shortcoming and areas of confusion in the current BSEE SEMS regulations and the application of API RP 75;

- 1) **Jurisdiction**: The term “system”, when used in conjunction with the term “safety management system” typically represents a complete structure such as vessel or a fixed facility, and therefore encompasses all operations, processes, activities and systems that make up each structure. As currently written, the BSEE SEMS regulations do not follow this logic because the SEMS regulations only apply to operators, and only cover operations and activities that fall under BSEE jurisdiction.

An ideal safety management system for an offshore unit<sup>1</sup> should be a single document that analyzes, evaluates, and describes all operations and activities, not just ones that fall under the jurisdiction of one specific regulatory agency. Numerous daily and emergency operations, activities and systems onboard offshore units have the tendency to blur jurisdictional lines. Under the current SEMS regulations only a portion of the hazards associated with these operations and activities will be identified and addressed. For example; all of the areas where the USCG has jurisdiction onboard an offshore unit, as outlined in the USCG/MMS MOA OCS-01, do not have to be included in a SEMS plan and are therefore not evaluated.

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<sup>1</sup> For the purposes of this paper, the term “offshore unit” means a vessel, installation, structure, or other apparatus engaged in OCS activities, including all fixed and floating facilities, MODUs, FPSO, FPS, and drillships.

The Department of Interior should review the jurisdictional limitations of each regulatory agency involved in the management of safety and environmental protection of the OCS (i.e. BSEE, USCG, BOEM, EPA, etc.). The Department of Interior should amend the current SEMS regulations to incorporate all operations and activities that take place on an operator's facility in addition to the ones only covered by BSEE's jurisdiction.

- 2) Responsible Party: As currently written the SEMS regulations state that only Operators are responsible for developing and implementing a SEMS program. In fact the preamble for the SEMS regulations specifically states, "This final rule does not require that a contractor have a SEMS program." This is very confusing.

As currently written, SEMS requirements apply only to operators and cover all OCS oil and gas operations under BSEE jurisdiction. This includes drilling; production; well construction; well completion and/or servicing; and DOI pipeline activities; when they take place on production facilities as well as mobile offshore drilling units (MODUs).

Depending on the operation, many of the activities that are supposed to be covered in a SEMS program are actually performed by contractors and not the operator. In particular, almost every MODU operating on the OCS and some floating production units are not owned by an operator, but rather owned and operated by a contractor. Under the current SEMS regulations, the operations and activities being conducted by these contractors, for example work being conducted on a MODU, are supposed to be addressed in an Operator's SEMS program. This means that each Operator is responsible for addressing safe work practices, job safety analysis, mechanical integrity and training on requirements onboard contracted MODU or production units. Further confusion as to who is ultimately responsible for each requirement under the current SEMS regulations is compounded by the fact that BSEE decided to use the term "you" instead of clearly defining who the "you" means in their regulations.

The Committee believes that the Operator should be ultimately responsible for operations and activities that take place in their own leased area. However, certain "major contractors"<sup>2</sup> should be responsible for developing and implementing a facility specific SEMS program since they are the ones performing the operations and activities on the OCS. The Department of Interior should consider amending the original SEMS regulations so that "major contractors", in addition to operator, are responsible for having a SEMS program that holistically covers operations and activities that take place on the OCS. In addition the SEMS should be amended so that it clearly states for what an "operator" and "major contractor" are responsible.

In the interim, while these regulatory changes are being made, the Department of Interior should work with its regulatory partners to encourage and facilitate "major contractors" to voluntary SEMS compliance. By demonstrating compliance with SEMS, contractors can greatly enhance offshore safety and assist operators with compliance.

- 3) Prescriptive regulations and requirements: The Department of Interior has claimed that the SEMS regulations are "performance-based standards similar to those used by regulators in

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<sup>2</sup> For the purposes of this paper, the term "major contractor" means drilling contractors and production facility owners/operators when not considered to be the leaseholder.

the North Sea.”<sup>3</sup> The Committee disagrees, but feels that modifications to the existing SEMS regulations could help the Department of Interior reach their goal of having SEMS be a performance-based regulation.

Practically speaking, the SEMS regulations are written in such a manner that operators are not given the freedom to develop a management system that best fits their specific operations. Unlike the performance based regulations found in Norway and in the UK, the Department of Interior elected to prescribe specific items to be addressed, list items that need to be verified, and even specify what records to keep in the current SEMS regulations. If SEMS was truly a performance-based regulation, the Department of Interior would not have needed to use the words “must” and “shall” throughout the regulation.

The Committee believes that the prescriptive approach found in the current SEMS regulations promotes the idea that operators only have to meet the minimal requirements in order to comply with the regulations. This is reinforced by the fact that BSEE recently published the Potential Incident of Noncompliance (PINC) list for SEMS audits that can be used by operators to help ensure that they do not receive any penalties. In addition, the PINC list focuses more on whether or not an operator has the correct documentation rather than the practical operation of safety measures.

The Committee has written a detailed discussion on performance-based regulations under “Topic #2” of this paper. Based on that discussion the Committee believes that the Department of Interior should amend the current SEMS regulations so that they are more performance-based. In addition, the Department of Interior should work with industry to develop effective guidance document(s) on how to comply with the current and future amended SEMS regulations rather than create more prescriptive compliance requirements like those include in the SEMS II rule. For example, a leading practice for major risk analysis of typical operations would be useful to both the industry and the regulators.

- 4) Reinforcing process safety focus and responsibilities: The Committee feels that the current SEMS regulations and API RP 75 on which they are based includes the necessary process safety controls and requirements to be a major barrier in preventing catastrophic events from occurring (e.g. hazard analyses, management of change, safe work practices, etc.), but strongly believes that reinforcement of process safety management is needed from the regulators and industry to create the necessary change in performance and effectiveness of process safety to assure the desired outcomes. As evident in recent catastrophic events, too much attention and effort by senior management and regulators was directed toward ensuring and recognizing good occupational health and personal safety performance. For example, BP senior management were on board the Deepwater Horizon on the day of the disaster to celebrate a personal safety milestone, yet did not inquire about the integrity and operational readiness of the risk management controls nor the robustness of decision-making on the rig.

A change to this management bias towards occupational health and safety requires a fundamental shift in approach, possibly utilizing a separate safety management system focused solely on process safety management. The Committee has debated this idea vigorously, but could not agree whether different systems are essential for success. The

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<sup>3</sup> Stated by Director Bromwich at the last International Regulators Forum meeting in Stavanger, Norway and at the Ocean Energy Safety Advisory Committee meeting in Washington in November of 2011.

argument for a separate process safety management system is that the processes and measurements are very different for this type of risk management. When combined, it is possible for process safety not to get the attention it deserves because occupational safety is so well defined and established while process safety is less so. The argument for the other side is that better definition of and focus on process safety in SEMS would overcome this bias.

Consistent with the approach to optimize SEMS rather than introduce a new safety management system, the Committee recommends that industry work with the regulators to develop an assessment methodology and/or audit protocol along with appropriate performance measures that test the process safety focus and controls as part of a regular SEMS review. Currently, the SEMS Potential Incidence of Non-compliance List<sup>4</sup> used by BSEE is geared towards verification that the elements of SEMS are in place rather than assessing whether the process safety controls are effective. This performance assessment could be developed in conjunction with the Center for Offshore Safety and should be supported by appropriate leading indicators that are regularly reported. (See KPI discussion in Vector 1 recommendation.)

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<sup>4</sup> See BSEE webpage: <http://www.bsee.gov/Inspection-and-Enforcement/Inspection-Programs/Potential-Incident-of-Noncompliance---PINC.aspx>

## Recommendation Document #2

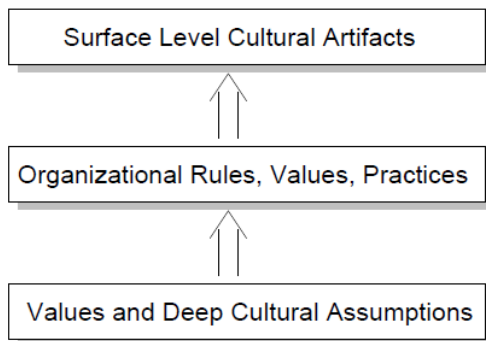
### **Safety Culture**

Organizational decision making always rests upon a set of industry or organizational values or assumptions. One of the best definitions of and treatises on culture can be found in Edgar Shein's *Organizational Culture and Leadership*<sup>1</sup> (Jossey-Bass Publishers, 2004). Shein defines *culture* (in general) as a set of shared values and norms, a way of looking at and interpreting the world and events around us and of taking action in a social context.

In the context of this recommendation, it is important to note that the word Safety is used to refer to Safety and Environmental Risks.

Shein divides organizational culture into three levels:

Safety culture can be defined as that subset of organizational culture that reflects the general attitude and approaches to safety and risk management.<sup>2</sup> At the top level are the surface-level organizational cultural artifacts or routine aspects of everyday practice including hazard analysis, operational procedures, and incident investigations. The second, middle level is the stated organizational rules, values, and practices that are used to create the top-level artifacts, such as safety policy, standards, and guidelines. At the lowest level is the often invisible but pervasive underlying deep organizational cultural assumptions upon which actions are taken and decisions are made and thus upon which the upper levels rest, also known or referred to as Safety Culture.



Trying to change safety outcomes by simply changing the organizational structures, including policies, goals, missions, job descriptions, and standard operating procedures, may lower risk over the short term, but superficial fixes that do not address the set of shared values and social norms are very likely to be undone over time. Changes are required in the organizational values that underlie people's behavior.

Safety culture is primarily set by the leaders of the organization as they establish the basic values

upon which decisions will be based. In fact, management commitment to safety has been found to be the most important factor in distinguishing between organizations with high and low accident rates.<sup>3</sup>

Safety culture will affect communication, problem reporting, following procedures such as management of change, and just about every other aspect of an effective safety program. Therefore, improving the safety culture of an industry or organization is important in achieving process safety goals. But changing culture is very difficult. One important aspect of such change is providing appropriate incentives to change.

Participants in industries like commercial aviation understand the direct relationship between safety and their profits and future viability. The relationship is not consistently used in the off-shore oil industry, some operators and contractors do have the safety cultures that provide them the understanding of the direct relationship between safety and corporate profit and future viability.

The moratorium on GOM drilling<sup>4</sup> was a very strong signal to the industry that those companies with strong safety cultures and practices can be hurt by those without them and that companies



without strong safety culture need to participate in industry initiatives and cooperate in improving safety. There also need to be recognition and processes to recognize the need and take action to continuously develop technology required to enhance safety processes and safety outcomes along with the development of technologies that are normally developed by industry to enhance work efficiencies and to allow the exploration and production of more complex structure. More drastic measures have also led to changes in safety culture, such as civil penalties to executives in a firm, but this type of change incentive should be used as a last resort. Major accidents have also led to changes, as in nuclear power after the Tree Mile Island incident.

BSEE and industry leaders need to update practices and technology as oil exploration and extraction conditions change. Recognition is normally a result of a safety culture that values proactive behaviors.

Safety culture goals for the regulators and industry participants in this industry include:

- Commitment to safety is valued by the leaders. Passionate, effective safety leadership exists at all levels of the organization (particularly the top of the industry companies and the associated regulatory bodies) and everyone is committed to safety as a value for the organization.
- Safety should always be considered a value and not a priority that is evaluated against cost or schedule.
- Safety concerns are surfaced without fear, and are communicated. Communication of not only lagging indicators but also leading indicators should be constructive and focused on building a strong safety culture.
- Incidents and accidents are investigated thoroughly, including management and systemic factors, and without blame. Deficiencies found during investigations, audits, and inspections are addressed properly and tracked to completion. In addition, there is follow through to ensure that the changes are effective in fixing the deficiencies. (A learning and improvement culture).
- Safety concerns are integrated into operational decision making and play important roles in advising management and operators at all levels of the organization on both long-term decisions during engineering and development of new platforms and on the safety implications of decisions during operations. Consistent long term behavior and decision making that clearly supports safety is a good indicator that an effective safety culture has developed in the organization.
- Early warning systems (leading indicators) of degradation in safety practices are established and effective. In a culture where safety is highly valued such warning systems are brought to the surface early and it does not take much debate when and to what cost should an organization go to before deciding on the remedy.
- Safety vision, values, and procedures are clearly articulated and shared among stakeholders. Executive management from regulators and industry companies should play an active role in portraying and supporting the values of the safety culture.
- All employees have full partnership roles and responsibilities regarding safety. Stakeholders are kept fully aware of industry developments related to safety and are invited to play an active role when and if necessary.
- There is effective and open communication about safety at all levels of the organization and between industry, regulator, and the public where appropriate or at the least within industry.
- High levels of visibility of the state of safety (that is, risk awareness) exist at all levels of the organization and industry through appropriate and effective feedback

### Is SEMS enough?

As described in the figure above, at the top level of the graph we can see what is required on a daily basis including hazard analysis, operational procedures, incident investigations and the list can go on to include all elements of SEMS and other Safety Management Systems.

All the elements of a Safety Management System are necessary but not sufficient to change the safety outcomes of an organization, it is important to note that even when combining the implementation of a safety management system with changes in the organizational structure, including policies and goals one may lower the risk but unless you are able to change the shared values that underlie people's behavior you are not able to create a sustainable positive change in the safety outcomes.

Changes in the organizational values that underlie people's behaviors require engagement and commitment from the leaders of the organization for which the safety outcomes need to be changed.

### Safety As a Core Value

As individuals develop in their safety knowledge and safety beliefs they go through four stages which can be described as follows:

- Level 1 – Comply when it is convenient
- Level 2 – Comply when I have to
- Level 3 – Believe for me and my family
- Level 4 – Believe for me, my family and my teammates.

This progression of Individuals through the levels is effected by their organization leader's behavior and communication skills. To reach level 4, an individual would have reach a point where safety is a core value, that is not to be compromised, as more individuals reach this level within an organization, the organization would have reach a culture where safety is a core value and a deep safety culture.

### Prescriptive vs. Behavior Based Culture

It can be reduced from the above that to reach a level where to reach a positive change to the safety outcomes in an organization it is important to:

1. Move from compliance to believe, an individual and an organization's behavior should be based on belief of doing the right thing, rather than compliance because it is required or convenient, and
2. Move from where we are relying solely on organizational rules and operational procedures, to a safety culture that is rooted in the organization through leadership and communication of safety values starting from the top leaders of the organization. These values should be implemented in the organizational rules and procedures.

Achieving this higher level of safety performance is better supported by an environment where behavior based criteria is developed and used to measure the belief and the level of commitment of the leaders in communicating the message. In contrast with a prescriptive regime where the driver is compliance when and because we have to.

### What it takes

Developing a safety culture starts at the top of an organization and then cascades down the organization by action and personal example, not merely by words. There are examples of comprehensive approaches how to teach leaders to establish this culture. Each organization needs to be an owner of its safety culture and safety problems, not just comply with regulations.

It is key to observe that:

- 1- Without extensive and repeated communication and collaboration across the industry and regulating agencies, safety culture will not take hold.
- 2- The leadership of all organizations involved, including operators, contractors, regulators and in some cases stakeholders should be aligned on the safety culture, which underpins the safety objectives and safety values of the organizations involved.

The above highlights the importance of setting company behavioral norms and encouraging individual motivation, which raises the question as to what is the appropriate level for such norms and individual motivators to be established.

