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"Lessons Learned" following Macondo - Safety Enhancement on the U.S. Outer Continental Shelf

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Abstract

The Coast Guard is responsible for protecting the marine environment, promoting the safety of life and property, and ensuring security on the U.S. Outer Continental Shelf (OCS). Based on authorities provided under the Outer Continental Shelf Lands Act (OCSLA), the Coast Guard regulates facilities, MODUs, and vessels engaged in or supporting OCS activities. The tragic loss of life and environmental disaster resulting from the Macondo incident in April 2010 focused significant attention on the U.S. OCS, where industry employs tens of thousands of U.S. mariners and offshore workers on over 4,100 U.S. and foreign flagged facilities and vessels engaged in oil and gas exploration and production activities.

Though the Macondo incident was not initiated by failures within areas of Coast Guard jurisdiction and the Coast Guard-regulated safety systems generally performed well under the extreme conditions, the Coast Guard is reviewing its regulatory construct and seeking "lessons learned" from this tragic incident. A contemporary and effective regulatory regime needs to be maintained and consistently applied to all vessels and facilities engaged in operations on the U.S. OCS.

This paper discusses the Coast Guard's regulatory approach for effectively mitigating the risk to people, property, and the environment on the U.S. continental shelf. It includes recent work to keep pace with the rapidly evolving technology employed on the OCS and efforts to ensure contemporary and sensible safety standards are promulgated and enforced.

U.S. Coast Guard Authority and Regulatory Construct on the OCS

The U.S. Coast Guard, within the Department of Homeland Security (DHS), has broad authority under the Outer Continental Shelf Lands Act (OCSLA) to regulate the safety of life and property on facilities and vessels engaged in OCS activities, and the safety of navigation. In addition, the Coast Guard is responsible for promoting workplace safety and health by enforcing requirements related to personnel, workplace activities, and conditions and equipment on the U.S. OCS. The Coast Guard is also responsible for security regulations on OCS facilities, as specified under the Maritime Transportation Security Act (MTSA), and has select duties for regulating deepwater ports as enumerated in the Deepwater Ports Act (DPA), as amended. Other regulatory agencies, such as the Bureau of Safety and Environmental Enforcement (BSEE) also share jurisdiction over OSC activities. This paper will focus primarily on the Coast Guard role in regulating the safety of facilities and vessels engaged in OCS activities.

An OCS activity is any activity in the OCS associated with exploration, development, production, transportation via pipeline, storage, or processing of mineral resources including hydrocarbons (oil, gas, condensate, natural gas liquids), salt, sulphur, sand and gravel. An OCS facility is any artificial island, installation, pipeline, or other device permanently or temporarily attached to the seabed, erected for the purpose of exploring for, developing, producing, transporting via pipeline, storing, or processing mineral resources from the OCS. This term does not include ships or vessels for transporting produced

[1] The views expressed in this paper are those of the authors and do not necessarily represent the official position or policy of the U.S. Coast Guard.

hydrocarbons. The following are types of OCS facilities:

- Fixed Facility - A bottom-founded OCS facility permanently attached to the seabed or subsoil of the OCS, including platforms, guyed towers, articulated gravity platforms, and other structures. This definition also includes gravel and ice islands and caisson-retained islands engaged in OCS activities used for drilling, production, or both.

- Floating Facility - A buoyant OCS facility securely and substantially moored so that it cannot be moved without a special effort. This term includes tension leg platforms, spars, semi-submersibles and shipshape hulls.

- Mobile Offshore Drilling Units (MODUs) - Vessels capable of engaging in drilling operations for exploring or exploiting subsea oil, gas, or other mineral resources.

Commercial vessel safety standards for U.S. flagged vessels and MODUs, floating facilities, and fixed facilities are published in Chapter I of Titles 33 and 46, Code of Federal Regulations (CFR). The regulations provide detailed guidance for the design, construction and operation of these units. Table 1 lists some of the subchapters under Titles 33 and 46 that are applicable to specific types U.S. flagged vessels and MODUs, floating facilities, and fixed facilities on the OCS. Table 2 lists subchapters with general applicability across all units operating on the OCS.

CFR Title	Subchapter	Vessel Type
33	N	Artificial Island and Structures on the OCS
46	C	Uninspected Vessels
46	D	Tank Vessels
46	H	Passenger Vessels
46	I	Cargo and Miscellaneous Vessels
46	I-A	Mobile Offshore Drilling Units (MODUs)
46	O	Certain Bulk Dangerous Cargoes

Table 1 - Regulatory Subchapters Applicable to Specific Units

CFR Title	Subchapter	General Applicability
33	O	Pollution
46	B	Merchant Marine Officers and Seamen
46	E	Load Lines
46	F	Marine Engineering
46	J	Electrical Engineering
46	Q	Equipment, Construction and Materials: Specifications and Approval
46	S	Stability
46	V	Marine Occupational Safety and Health Standards

Table 2 - Regulatory Subchapters for Applicability Across all Units

The Coast Guard reviews construction plans and conducts construction and periodic inspections of vessels and facilities to ensure compliance with regulatory requirements. Additionally, the Coast Guard allows third party organizations to conduct work on its behalf for U.S. vessels, primarily using two constructs. Under Navigation and Inspection Circular (NVIC) 10-82, the Coast Guard accepts plan review and inspection by the American Bureau of Shipping (ABS) for compliance with certain Coast Guard rules and regulations for most classed vessels undergoing new construction or major modification. The Coast Guard retains responsibility for inspection and plan review for all other areas of new construction and major modification. The Alternate Compliance Program (ACP), as described in 46 CFR 8 and NVIC 2-95, allows an authorized classification society to carry out plan review and inspection on behalf of the Coast Guard on the basis of compliance with international conventions, classification society rules and supplemental Coast Guard requirements. Presently, ABS, Det Norske Veritas and Lloyd's Register are authorized to participate in the ACP Program and issue IMO MODU Safety Certificates to U.S. flag MODUs as well as other international convention certificates to other types of U.S. flag vessels on behalf of the Coast Guard. The classification society assumes primary responsibility for tracking the vessel's condition, initiating timely action to correct known deficiencies, and making notification to the Coast Guard when the owners do not comply with the recommendations

of the classification society.

The Coast Guard regulates foreign flagged units operating on the OCS under Title 33 of the CFR. Subchapter N of Title 33 includes minimal standards for all vessels (e.g. load line requirements) and specific requirements for MODUs and standby vessels. Subchapter N offers three regulatory compliance options for foreign flag MODUs operating on the U.S. OCS:

- The design and equipment standards of 46 CFR part 108;
- The design and equipment standards of the documenting nation if the standards provide a level of safety generally equivalent to or greater than that provided under 46 CFR part 108; and,
- The design and equipment standards for MODUs contained in the International Maritime Organization (IMO) Code for Construction and Equipment of Mobile Offshore Drilling Units.

NVIC 3-88 provides guidance and information on the inspection of foreign flagged MODUs operating on the U.S. OCS. Standby vessels are required to meet either 46 CFR Subchapters H, I or T.

A recent trend on the OCS is the use of foreign flagged floating facilities, with two having started operation with the last 2 years (Helix PRODUCER 1, BW PIONEER). In both cases, the Coast Guard applied the standards for a U.S. flagged vessel and a floating facility to these units to ensure a uniform level of safety for all floating facilities.

Lessons Learned from Macondo

The DEEPWATER HORIZON casualty was a catastrophic event that was initiated by a failure of well containment, an area that falls under the jurisdiction of BSEE. Volume 1 of the report of the Joint Department of Interior and DHS Investigation (JIT) revealed that, in general, the Coast Guard regulated safety systems aboard the DEEPWATER HORIZON had a beneficial effect, despite the extreme nature of the event. Of the 126 persons onboard, 115 survived the explosions and subsequent fire. All survivors were able to evacuate the MODU using installed lifesaving equipment, except for at least six who jumped from the rig into the water. Even though significantly damaged by explosions and initial effects of the fire, the DEEPWATER HORIZON was able to stay afloat for more than 48 hours while engulfed in a major fire, fed by an uncontrolled fuel source.

While the Coast Guard regulated safety systems generally performed well under such extreme conditions, the event and subsequent investigations revealed potential safety improvements in areas that are under Coast Guard jurisdiction and responsibility. Volume 1 of the JIT, for example, recommends numerous safety enhancements for MODUs and potentially other floating facilities that the Coast Guard intends to evaluate. Some examples include:

- The need for fire and explosion risk analyses to ensure an adequate level of protection is provided for accommodation spaces, escape paths, embarkation stations, and structures housing vital safety equipment;
- The need for a fixed deluge system or multiple high capacity water monitors to protect the drill floor and adjacent areas; and,
- The need to develop procedures for the risk-based targeting of foreign flagged MODUs operating on the U.S. OCS.

The incident also prompted a more general examination of OCS operations and highlighted that Coast Guard regulations have not kept up with the rapidly evolving technology on the OCS. Examples include:

- The use of dynamic positioning systems to provide critical maneuvering and station keeping functions onboard vessels and floating facilities is widespread, yet the Coast Guard has not established regulatory requirements for these often complex systems;
- Offshore supply vessels, the workhorses of the OCS, have increased dramatically in size and complexity over the past decade. Current Coast Guard regulations cap the size of these vessels at 6000 gross tonnage, and do not consider potential risks posed by operations such as well stimulation or well testing;
- Vessels are used to accommodate up to hundreds of workers offshore to support the commissioning or modification of an offshore facility, yet there is no established regulatory framework for this service;

- Floating facility design and operation continues to evolve on the OCS, especially as exploration and production moves farther offshore into deeper water. There are multiple types of units employed (e.g. semi-submersibles, TLPs, SPARs, FPSOs), with more on the way. Yet, Coast Guard regulations for these units have not been updated since the early 1980s.

Based on the lessons learned and the general review of its OCS construct, the Coast Guard should work to address risk on the OCS and ensure it is in line with public expectations for safety, security and environmental protection. This should be accomplished via updated regulations, policy and guidance on design, operation, and manning, coupled with targeted oversight and inspection to ensure each vessel and facility operating on the U.S. OCS, regardless of its flag state, is in compliance.

Standards/Policy

Design, engineering and construction standards are the cornerstone of the Coast Guard's OCS regulatory construct. In light of recent experience, new technology and current industry practices, existing standards must be reassessed in order to ensure the risk to life, property and environment remains at an acceptable level. It is important these standards remain current and effective. Contemporary and sensible prevention standards must effectively manage the risk associated with activities taking place on the OCS and ensure vessels and facilities are designed and operated safely. While assessing existing standards, the Coast Guard should strive for a uniform level of safety on the OCS, capitalize on existing statutory codes and classification society rules, and provide options for alternative approaches. Additionally, it is important that standards development and compliance activities be coordinated with BSEE.

"One Gulf, One Standard"

As the coastal state, the U.S. is solely responsible for prescribing the conditions that must be satisfied in order to explore for, develop, or produce oil, gas, sulphur or other associated minerals on the U.S. OCS. Similar to the approach taken by Norway, U.K, and several other coastal states, all MODUs, floating facilities and vessels operating on the U.S. OCS must meet national requirements established by the U.S., some of which may exceed those contained in other constructs, such as the IMO MODU Code. To ensure the same level of safety is provided to all mariners working on the U.S. OCS, all MODUs, floating facilities and vessels, regardless of flag, that wish to operate on the U.S. OCS should be required to satisfy the same standards. In simple terms, it's "One Gulf, One Standard." Regardless of differences in flag Administration requirements and interpretations, the required minimum level of safety should not vary between different MODUs, floating facilities or vessels engaged in similar activities on the U.S. OCS and exposed to similar levels of risk.

Building Blocks

While establishing standards for all units operating on the U.S. OCS, the Coast Guard should strive to build upon internationally accepted standards and classification society rules. For example, all MODUs operating on the U.S. OCS should comply with the IMO MODU Code and U.S. interpretations and be classed by a classification society accepted by the Coast Guard.

There are many advantages of utilizing a single international standard that is broadly accepted by all countries. Given the international movement and operation of MODUs, use of a common set of widely accepted standards that provide a baseline level of safety benefits all involved parties, including designers, shipyards, operators and coastal states. Accordingly, the IMO MODU Code and other associated and commonly accepted international standards should serve as the foundation and be augmented by other national requirements, as necessary.

Unlike SOLAS, the IMO MODU Code is a non-mandatory IMO instrument. It provides *recommended* safety measures, design criteria and construction standards, and leaves many important items to be addressed "to the satisfaction of the Administration." Consequently, MODU Code provisions that leave certain matters to the discretion of the flag Administration should be evaluated by the Coast Guard and supplemented with more specific coastal state requirements, as necessary.

Involvement of classification societies in the design, construction and maintenance of MODUs and floating facilities provides an essential element of the safety net for these units. Classification society rules include some requirements for systems and equipment not covered in the MODU Code. Accordingly, all MODUs and floating facilities operating on the U.S. OCS should be classed by a classification society accepted by the Coast Guard. This will ensure each vessel meets rules and survey requirements appropriate to its specific design and operation, establish consistency in the plan review, construction, and inspection services throughout the installation's life, and reduce the risk of harm to personnel and the environment.

Lastly, the U.S. should establish supplemental requirements for certain critical systems not sufficiently addressed by the MODU Code, other applicable international standards, or classification society rules. Requirements for these critical systems are vital to the safety of personnel working on the U.S. OCS and the environment. These additional coastal state requirements may require additional plan review and inspection by the Coast Guard. Where possible, industry consensus standards such as ISO, API, IEC, IEEE, NFPA, and UL should be used, per OMB Circular No. A-119[2].

For offshore support vessels and other vessel types, there are international standards and guidelines that the Coast Guard can use as the foundation for the coastal state requirements. However, there is no international statutory framework for floating facilities. For these types of units, the Coast Guard should still require they be classed by an experienced classification society with rules appropriate to the facility type and also apply relevant industry consensus standards. Additional requirements for vital systems and other items may need to be established.

Balance of Prescriptive and Performance Requirements

The difference between a regime employing prescriptive standards and a "safety case" approach, which invokes goal setting or performance-based regulations, has received significant attention since the Macondo incident. Coast Guard requirements for vessels, MODUs and floating facilities operating on the OCS have traditionally been developed as detailed, prescriptive standards. Prescriptive standards tend to be a distillation of past experience, encode the best engineering practice at the time they were written, and give clear guidance on what is required, both for the regulator and regulated industry. A shortcoming of prescriptive regulations is that they are not very flexible and can rapidly become deficient where best practice is changing with evolving technologies, a concern considering the pace of innovation on the OCS.

The International Convention for the Safety of Life at Sea (SOLAS) provides an example on how to retain the benefits of prescriptive regulations while allowing for performance-based alternatives. Such an approach gives clear guidance on what is required while providing a framework for alternative approaches. In the case of SOLAS, although the chapter II-2 regulations still contain prescriptive requirements, each regulation now has a purpose statement and functional requirements to assist port and flag states in resolving matters, which may not be fully addressed in the prescription requirements. The chapter also includes a framework on how to conduct an engineering analysis, evaluation and approval of the alternative design and arrangements to support deviation from the prescriptive requirements. We believe that such an approach merits consideration on the OCS.

"Good" Government

As discussed above, both the Coast Guard and BSEE have authority and jurisdiction on the U.S. OCS. The Coast Guard is responsible for protecting the marine environment, promoting the safety of life and property, and ensuring security on the OCS. In addition, the Coast Guard is responsible for promoting workplace safety and health. BSEE is responsible for managing the nation's natural gas, oil and other mineral resources on the OCS in a safe and environmentally sound manner, and regulates industrial activities such as mineral exploration, drilling, completion, development, production, well servicing, and workover activities.

A memorandum of understanding between the Coast Guard and the Minerals Management Service, the predecessor of BSEE, was signed in September 2004. It acknowledges the overlapping jurisdictions and need for interagency consistency and coordination in regulating activities on the U.S. OCS. Both agencies agreed to work together to foster communications and cooperation; optimize use of government resources; clearly delineate areas of expertise and jurisdiction; develop common, compatible regulations and policies; encourage adoption of similar codes and standards; and, assist industry in understanding applicable regulations.

The need for this interagency coordination has never been greater. Given the predictions for a declining Federal budget and the continued expansion and growth of activities on the U.S. OCS, Coast Guard and BSEE are obliged to work together, leverage resources and expertise, and maximize each agency's efficiency and effectiveness. In addition to improving the stewardship of Federal resources, coordination and cooperation between the agencies benefits industry by alleviating confusion, reducing uncertainty, and clarifying responsibilities and jurisdictions, all of which may otherwise result in an unnecessary burden.

In particular, both agencies should work together to assess the "seams" between their respective jurisdiction and authorities. Both the "gaps" and "overlap" must be identified and evaluated to ensure an appropriate and consistent level of regulatory oversight is provided with the necessary level of expertise.

[2] Office of Management and Budget, Circular A-119 Revised, February 10, 1998

Targeted Oversight

Thorough plan review and inspection oversight on U.S. and foreign flagged vessels, MODUs, and floating facilities during design, construction, commissioning, and periodically while in service, is necessary to confirm compliance with regulatory standards to ensure marine safety and environmental protection on the U.S. OCS. The Coast Guard has a finite amount of plan review and inspection resources. Consequently, available resources should be targeted based on the risk and criticality of each unit and system.

Inspections and surveys are conducted by representatives of each flag Administration to confirm compliance with the relevant international standards. Similarly, each classification society performs surveys and audits in accordance with its rules. As a coastal state, the U.S. is obligated to ensure its requirements are satisfied. In general, the Coast Guard should leverage the results of surveys and inspections conducted by the flag Administration and classification society. However, additional oversight is necessary, particularly on critical high risk or vital systems, to confirm the sufficiency and accuracy of the plan review, testing and surveys conducted by the flag Administration and classification society, and to ensure compliance with U.S. coastal state requirements that go beyond flag state and class standards.

In response to the Macondo incident, the Coast Guard leveraged its experience with identifying substandard foreign ships for Port State Control examinations and implemented a policy that targets “high risk” MODUs for additional Coast Guard inspections. This provides additional oversight of foreign flag MODUs operating on the U.S. that have the highest risk profile. The Coast Guard should build on this policy and consider the need for greater flexibility in exam intervals and increased Coast Guard plan review and inspection, with an emphasis on the dynamic positioning and emergency disconnect systems, fire and explosion protection, equipment installed in hazardous areas, emergency egress, and lifesaving equipment. For critical systems that are of interest to both the Coast Guard and BSEE, the Coast Guard should consider conducting joint inspections with BSEE. In addition, the timing of such examinations should be evaluated, as some systems may only be adequately inspected and safely tested at set times or under certain conditions, such as while the MODU is not drilling.

It may also be beneficial for the Coast Guard to inspect and witness testing of certain systems on a foreign flag MODU or floating facility before it arrives to the U.S. OCS, similar to what is currently done for foreign flag cruise ships under the Coast Guard’s Control Verification Examination program. The Coast Guard conducts plan review of certain items and attends foreign flag passenger ships overseas during construction to confirm compliance and conduct oversight. This avoids delays after the vessel is delivered and arrives at a U.S. port to embark passengers. Pre-arrival plan review and inspection of foreign flag MODUs or other units would facilitate identification and timely resolution of potential compliance issues before the unit arrives to the U.S. OCS ready to go on contract and begin work. In addition, it may eliminate the need to duplicate inspections and testing that were likely completed during delivery or sea trials and requires coordination or attendance of equipment specialists and technicians.

Stakeholder Engagement

Development and sustainment of current and effective standards and policy requires aggressive stakeholder engagement. To ensure alignment and consistency in these areas of mutual interest, there is a need for active collaboration and coordination between the Coast Guard, BSEE, industry experts and other interested stakeholders.

The Coast Guard should leverage its relationship with federal advisory committees, such as the National Offshore Safety Advisory Committee (NOSAC), and partnerships and interaction with industry organizations including the Offshore Marine Service Association (OMSA), International Association of Drilling Contractors (IADC), International Marine Contractors Association (IMCA), and the newly formed Center for Offshore Safety (COS). In additional, Coast Guard involvement with industry consensus standards organizations such as the International Organization for Standardization Organization (ISO) and the American Petroleum Institute (API) can expedite timely development and implementation of effective safety standards and policy. The experience and insight provided by these organizations and their members is invaluable to government regulators.

Recent Developments

The following examples illustrate some areas where the Coast Guard has recently initiated action to address some of the lessons learned from the Macondo incident.

DPS/APM

Dynamic positioning systems (DPS) and automatic power management systems (APM) are routinely used on MODUs, FPSOs and other vessels to maintain position during exploration, drilling, and transfer operations. These advanced navigation and automation systems ensure maximum efficiency and effective operational capability, and enable vessel operations under conditions that could otherwise not likely be safely achieved. Proper operation of these systems is critical to the safety of the personnel involved and protection of the environment.

International standards for these systems are very limited. Voluntary DPS guidelines were developed by the IMO in 1994, but DPS technology has advanced significantly since that time and these guidelines may not sufficiently address the complex and interdependent systems commonly used today. The Coast Guard does not currently have regulations for DPS, but did recently issue related guidance.

In March of 2011, the Coast Guard provided MODU inspection guidance to its inspectors and directed them to confirm a failure modes and effects analysis is maintained on board all dynamically positioned MODUs and the vessel crews have procedures and are prepared to act in the event of an equipment malfunction that results in a "drive off" of "drift off." The IMO MODU Code states that a DPS used as the sole means of station keeping should provide a level of safety equivalent to that provided by anchoring arrangements. As a coastal state, the Coast Guard interprets this to mean a minimum of equipment class 2, as described in IMO MSC Circular 645, and failure of any component of the DPS or APM will not cause the MODU to lose position.

Emergency Disconnect and Well Closure

On all MODUs, emergency well closure and related crew training and emergency procedures provide critical safety features that are relied upon when primary and secondary well control is lost. The disconnect feature provided by the Emergency Disconnect System (EDS) on MODUs that employ a DPS to maintain position is equally critical in the event of a drive off or drift off. The DPS and EDS are integrated and should be viewed holistically together with the emergency well closure features provided by the Blowout Preventer stack (BOP).

When a DPS or the APM it relies on fails, a vessel can quickly drive or drift off location unless the operator takes immediate emergency response action, which in the case of a MODU may include activation of the EDS. Should the EDS fail, damage to subsea equipment is possible and a spill may result. Similarly, as was illustrated during the Macondo incident, if well control is lost for any reason successful deployment of the EDS may be necessary to prevent fire and explosion, life threatening injuries, and an uncontrolled subsea spill. The BOP "deadman" is the absolute last line of defense to shut in the well and prevent an uncontrolled fuel source from feeding a fire on the MODU and spilling oil and gas into the water. The design, maintenance, and proper operation of the BOP stack is vital to the safety of the crew and environment.

There are currently no international standards for the EDS or BOP. Current Coast Guard regulations contain no EDS requirements and only require the BOPs on U.S. flag MODUs to meet industry guidelines in API RP 53. The Coast Guard should work with BSEE to ensure U.S. requirements are revised and reflect the advancements in technology and increasingly complex deepwater drilling operations.

Given the complexity of operations, the limited time available for intervention, and the consequences of improper action, the role of the human element in these complex systems cannot be overstated. The crew must be provided with the procedures, education and training necessary to recognize and effectively respond in an emergency.

In December 2011, the Coast Guard drafted a policy letter entitled, ''Dynamically Positioned Mobile Offshore Drilling Unit (MODU) Critical Systems, Personnel and Training,'' and solicited comments via the Federal Register. The draft policy letter is intended to provide guidance on inspection and testing of these critical systems. Of particular note, the draft policy encourages Coast Guard personnel to join BSEE in witnessing the testing of this equipment and associated drills performed by the crew. This effort will improve the Coast Guard's understanding of industry's procedures and testing, assess crew proficiency and preparation, enhance communication and coordination between interested parties, inform future rulemaking, and facilitate proper oversight of these critical systems. In addition, the information and experience obtained will assist in the development of interagency protocol between the Coast Guard and BSEE and support efforts to achieve the aforementioned goal of "good" government.

Third Party Testing and Certification of Equipment

Though the International Life-saving Appliance (LSA) Code and International Code for Fire Safety Systems generally provide internationally accepted design standards for lifesaving and fire safety systems and equipment, the U.S. type approval process may be different from the equipment approval process used by other Administrations. In addition, there

may be unique safety features needed on certain equipment installed on units that work on the U.S. OCS. For example, given the size of a typical offshore worker employed on the U.S. OCS, the assumed average occupant weight prescribed by the LSA Code for lifeboat and liferaft design may be insufficient.

One of the fundamental Coast Guard requirements for equipment approval is independent third party certification based on testing completed by a competent authority other than the manufacturer. This is required for critical items, including lifesaving and firefighting equipment, as well as equipment installed in hazardous areas on U.S. flag vessels.

Consistent with the "One Gulf, One Standard" approach, the Coast Guard should ensure the installed lifesaving, fire safety, and electrical equipment on all units, regardless of flag, provide the same level of safety for all mariners and offshore workers employed on the U.S. OCS,.

Large Offshore Supply Vessels

The Coast Guard Authorization Act of 2010 removed the size limit on offshore supply vessels (OSVs), allowing these vessels to exceed 6,000 gross tons under the International Convention on Tonnage (GT ITC). The Act also directed the Coast Guard to issue, as soon as is practicable, an interim rule to implement section 617 of the Act and to ensure the safe carriage of oil, hazardous substances, and individuals in addition to the crew on these vessels. Accordingly, the Coast Guard is preparing an interim rule to address design, manning, carriage of personnel, and related topics for OSVs of 6,000 GT ITC or more. This rulemaking will meet the requirements of the Act and will support the Coast Guard's mission of marine safety, security, and stewardship.

Accommodation Vessels

The Coast Guard is concerned about the safety of operations of vessels providing accommodation service on the U.S. OCS because those operations are typically far offshore, distant from search and rescue assets, located near high risk industrial activities, and may involve large numbers of accommodated personnel, many of whom may not be adequately trained. These risk factors drive concerns about requirements governing vessel manning and design, emergency systems, design and operation of DPS, design and operation of systems used to transfer personnel between a vessel providing accommodation service and an OCS installation, and training. To become better informed on current practices, the Coast Guard should seek public comment on the appropriate standards for the design, construction, and operation of vessels providing accommodation service on the U.S. OCS.

Conclusion

The Coast Guard and BSEE share jurisdiction and responsibility for ensuring safety on the OCS. Based on lessons learned from the Macondo incident and a general review of its OCS construct, the Coast Guard should update its regulations, policy and guidance on design, operation, and manning of MODUs, floating facilities, and vessels operating on the OCS to ensure the risk to life, property and environment remains at an acceptable level. A "One Gulf, One Standard" approach should be pursued to ensure the same level of safety is provided to all mariners on board all MODUs, floating facilities and vessels that operate on the U.S. OCS, regardless of each unit's flag. Coast Guard resources for oversight and inspection should be targeted based on risk. The Coast Guard's efforts to develop standards, confirm compliance, and ensure safety on the U.S. OCS should be closely coordinated with BSEE. The need for interagency coordination has never been greater. Similarly, industry stakeholders and industry consensus standards organizations should be aggressively engaged.