



# United States Coast Guard & Bureau of Safety and Environmental Enforcement

## Joint Activity Summary 2016 - 2017



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# Introduction and Purpose

The energy industry that leases federal lands on the Outer Continental Shelf from the U.S. Government is composed of hundreds of entities that together supply America with a significant portion of our oil and natural gas. Having matured from its roots over a century ago off the coast of California, the offshore oil and gas industry is now technologically advanced and capable of drilling wells in more than 9,500 feet of water to reach energy-rich reservoirs that lay miles below the seafloor. The OCS oil and gas industry operates primarily in the Gulf of Mexico, but also has operations in the Pacific and waters offshore from Alaska.



***This dynamically positioned drillship, the Ocean BlackHawk, is capable of operating in water depths up to 12,000 feet and can drill to a depth of 40,000 feet. Owned and managed by Diamond Offshore Drilling, the Ocean BlackHawk is currently operating in the Gulf of Mexico.***



Federal regulation of safety and environmental compliance on the OCS has a long history that was formalized with the passage of the Outer Continental Shelf Lands Act in 1953 and its 1978 update. The Act specifically discussed the different roles that were assigned to the Department of the Interior and the Coast Guard, but the Act also contains provisions that authorize joint operations.

The Coast Guard's responsibilities extend to safety of life, property and navigation and protection of the environment on OCS units and vessels engaged in OCS activities. The Coast Guard also regulates workplace safety and health, as well as enforcement of requirements related to personnel, workplace activities, conditions and equipment on the OCS. The Coast Guard has additional responsibilities related to oil spill preparedness and response (under both the OCS Lands Act and the Oil Pollution Act of 1990) and conducts research related to these mission requirements. Beyond the stipulations of the OCS Lands Act, the Coast Guard has added responsibility for security regulations on OCS installations, as specified under the Maritime Transportation Security Act, and it has select duties for regulating deepwater ports as enumerated in the Deepwater Port Act.



***Worcester Polytechnic Institute graduate student Panyawat “Oat” Tukaew (left), BSEE engineer Karen Stone (center) and Coast Guard MST1 Lora Jones observe atmospheric data being collected during an experimental controlled burning of oil. If demonstrated to be effective, the technique may become an important tool for oil spill responders during clean-up efforts.***

The jurisdiction of BSEE comes from the OCS Lands Act, the Oil Pollution Act of 1990 and certain other laws. It extends to safety and environmental stewardship functions related to OCS facilities, including regulations governing OCS operations and permitting. BSEE conducts thousands of inspections and investigations, enforcing regulatory requirements that fall under its jurisdiction (which apply to platforms, mobile offshore drilling units, pipelines and other OCS operations), assesses penalties, and approves drilling and other permits. BSEE also oversees oil spill response planning and preparedness for facilities in both state and federal offshore waters of the U.S. Supporting this function is an integrated research program dedicated to advancing technologies, strategies, and practices to improve offshore oil spill containment, recovery, and treatment.

Although there are specific authorities assigned solely to BSEE or the Coast Guard, the descriptions above demonstrate that the responsibilities often closely parallel each other. For this reason, and particularly in the aftermath of the Deepwater Horizon tragedy, BSEE and the Coast Guard have made extensive efforts to coordinate operations in the shared regulatory space that constitutes the OCS. In short, both agencies have heeded references in the OCS Lands Act to carry out responsibilities “individually, or jointly if they so agree . . .” whenever such joint efforts are beneficial.

The level of coordination between BSEE and the Coast Guard is substantial, resulting in numerous efficiencies. The two agencies have established protocols regarding joint inspections, shared resources, cross-training, better coordination of oil spill exercises and response equipment inspections, and communication of observations that fall under the other agencies jurisdiction. This coordination has resulted in the leveraging of collective authorities that facilitates safe, secure, and sound commerce. Industry, particularly operators with a strong safety culture, are benefitting from these coordinated activities because the result is clearer lines of communication, clarity of areas of responsibility and improved efficiencies, such as experiencing a single offshore inspection that checks for both BSEE and Coast Guard compliance.

This report is the inaugural edition of our summary of joint offshore activities. During the 2016 Offshore Technology Conference in Houston, each agency committed to deliver this report during the 2017 OTC gathering. We believe that information sharing, such as that contained herein, helps establish clarity with stakeholders and also provides industry with confidence that the federal government is continuously improving its approach to consistent regulatory inspection and enforcement. This is an important element in the broader strategy of both BSEE and the Coast Guard to advocate for a constantly improving safety culture on the Outer Continental Shelf; a culture that helps mitigate risks to those working offshore, reduces interruptions to America’s energy supply, and protects the environment.

What follows in this summary are more specific examples of the collaborative activities involving BSEE and the Coast Guard. We also offer some case examples and highlight individuals who are spearheading some of the efforts. Our hope is that, upon reading the summary and considering the data presented, it will become clear that BSEE and the Coast Guard are improving the efficiencies of our operations, creating added clarity for offshore operators and other stakeholders, and helping reduce risks to workers and the environment.

## **Joint Activities**

In this section we provide further details about five areas of collaboration that were identified as high priorities for both the Coast Guard and BSEE. Over the past few years we have seen each of these areas progress from ideas from staff to implementable operations at the field level. The work of dedicated staff has allowed each of the five areas to evolve into full-blown programmatic collaborations. As with most organizations, collaboration requires structure. The Coast Guard and BSEE have encouraged collaborations by establishing working groups and revising several Memoranda of Agreement, most recently in January 2017. Two significant revisions



include changes to MOA-OCS-05 on incident notifications and investigations and MOA OCS-07 on Safety and Environmental Management Systems (BSEE)/Safety Management Systems (Coast Guard).

## Information Sharing

The agencies have completed robust revisions related to communication tools that foster actions such as interagency casualty notification and Coast Guard support for the marine component of an OCS facility's SEMS program. The wide variety of other information sharing improvements are resulting in a number of changes, including (1) an increase in joint inspections and investigations and (2) instituted notification to BSEE of potential deficiencies in SEMS effectiveness related to marine operations and safety systems.



***A Coast Guard inspector (right) and his BSEE counterpart examine a cable connection on an offshore oil and gas platform.***



***BSEE and the Coast Guard hold a variety of joint meetings that may involve from 10 to several dozen key personnel. The Quarterly Principals meeting is cohosted by the director of BSEE and the Coast Guard's Assistant Commandant for Prevention Policy.***

## Joint Exercises and Response Activities

The Coast Guard and BSEE participate in numerous joint exercises and actual responses. A significant exercise occurred in March 2017 under the Mexico-U. S. Joint Contingency Plan, when the Coast Guard and BSEE conducted an international subsea spill exercise with multiple participants including industry operators, the Marine Well Containment Company, the National Agency for Safety, Energy and Environment of Mexico and the Mexican Navy. A notable actual response occurred in May 2016, when the Coast Guard and BSEE worked together under a unified command, with the responsible industry party, to respond to an 88,200 gallon crude oil spill in the Gulf of Mexico. The spill occurred at an offshore subsea production system approximately 100 miles south of Port Fourchon, Louisiana.

## Joint Inspections and Investigations

The Coast Guard and BSEE have been working to harmonize efforts through joint inspections of offshore production and drilling operations. During fiscal year 2016, BSEE and the Coast Guard conducted over 40 joint inspections and investigations on OCS facilities. Many of these inspections and/or investigations were initiated by serious non-compliance issues or casualties. Some inspections were BSEE evaluations of operator management systems that were supported by the Coast Guard in relation to marine safety areas.

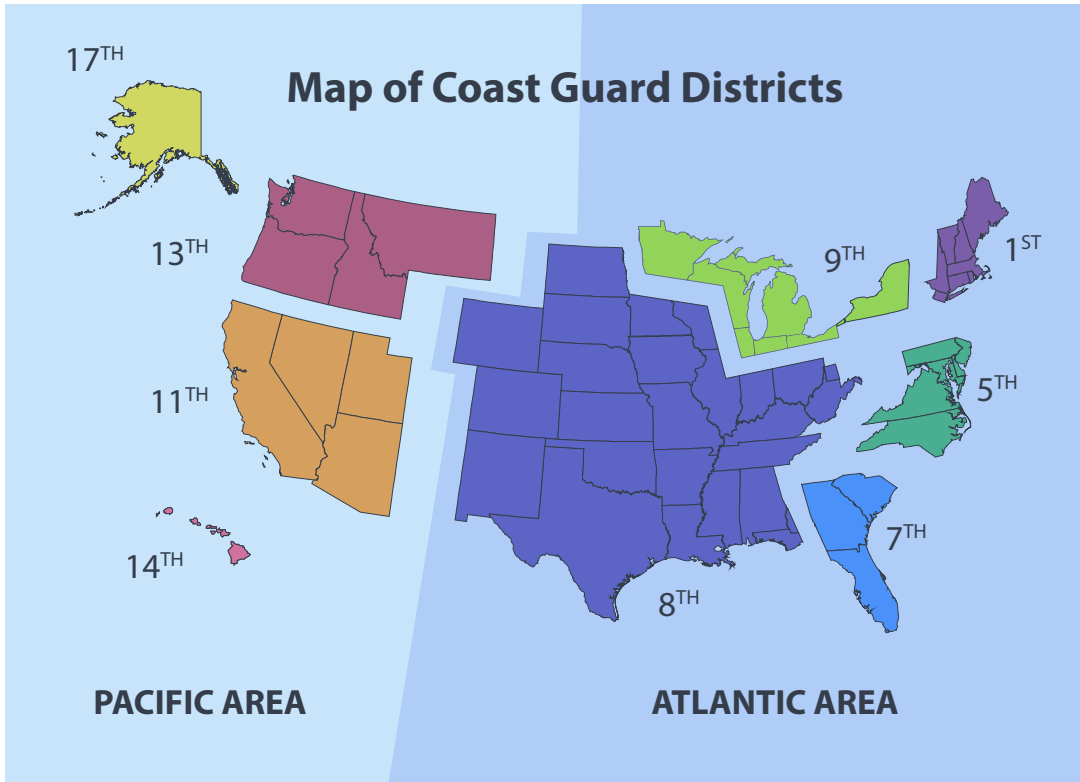
### Bureau of Safety and Environmental Enforcement & Coast Guard Share Casualty Data



***Certain types of incidents must be reported to both BSEE and the Coast Guard because they share regulatory responsibility for that area. When joint reports are received, the agencies coordinate their efforts so that investigations are conducted efficiently and accurately. Offshore operators gain clarity from knowing that the two agencies are carefully coordinating during the investigation. Ultimately the recommendations for safety improvements that result from such investigations are shared via a joint Coast Guard-BSEE communication method.***

# Joint Outreach

The Coast Guard and BSEE have begun coordinating outreach at the national, regional and local levels. One noteworthy effort occurred in March 2016. The Coast Guard, with support from BSEE, hosted an offshore training symposium addressing spill response and prevention. The symposium included an overview of the cutting edge technology implemented for source control when preparing for and responding to well blowouts.



**Although BSEE and the Coast Guard have different regional configurations, both agencies have worked to create seamless processes for inspection and outreach coordination. The vast majority of joint activities take place in the Gulf of Mexico, which is home to most of America’s oil and gas activity on the Outer Continental Shelf.**



## Joint Training

Recent years have witnessed a significant increase in joint training events involving the Coast Guard and BSEE. BSEE's National Offshore Training Branch has made it a standard practice to include the Coast Guard in all of their industrial system training courses. These courses are customized for BSEE inspectors and engineers, and often cover systems and operations where there is an industrial/marine interface. An added benefit of the joint training is that inspectors from both agencies work together in the class, which has fostered additional professional collaborative communication. The Coast Guard's OCS National Center of Expertise has likewise been offering both formal and on-the-job training to BSEE inspectors who perform fixed platform inspections on the Coast Guard's behalf.

During FY 2016 the Coast Guard held four cross-training classes that were attended by 57 BSEE personnel. BSEE conducted 13 cross-training events during the same year for 23 Coast Guard regulators. The agencies also conducted three joint training flights that involved seven BSEE and three Coast Guard staff members. Both the Coast Guard and BSEE will continue to capitalize on the shared training environment created through this mutual partnership as the agencies continuously improve the consistent inspection approach the OCS industry deserves.



***One approach to offshore oil spills is in situ burning, where oil is burned far from shore. The Coast Guard and BSEE have worked collaboratively with universities and other research entities to increase the efficiency of offshore burns. In the test pictured here, a new type of flame refluxer is being tested to see if soot production can be reduced.***

### USCG-BSEE Joint Classroom and Offshore Training

The growing cross-training experiences that the Coast Guard and BSEE have generated are proving beneficial. BSEE inspectors have gained perspectives related to enforcement of Coast Guard regulated systems and the Coast Guard has benefitted from the shared training environment created through this mutual partnership. Both agencies have aligned performance expectations of offshore operations and addressed specific safety equipment requirements.



# Compliance Collaborations

Both BSEE and the Coast Guard ensure compliance of offshore operators with the Outer Continental Shelf Lands Act and other laws and regulations. Both agencies are committed to the goal of minimizing the amount of duplication for offshore operators in the shared regulatory space that constitutes the Outer Continental Shelf. It is also incumbent upon all federal regulators to create an understandable and achievable set of conditions for compliance enforcement. Offshore operators should understand what is expected of them, how to comply with federal rules, see consistency in application across federal entities, and have the opportunity to demonstrate a commitment to safety and environmental protection.

When operators accept the responsibility of operating an offshore lease they are fully aware of the commitment they must make to safe operations and environmental stewardship. BSEE and the Coast Guard are working together to streamline compliance activities for operators. This collaboration allows both agencies to focus more effectively on higher risk operations.

The tables below demonstrate the amount of effort both BSEE and the Coast Guard put into inspecting offshore operations.

**Table 1** BSEE's total number of recordable incidents on the OCS from FY 2007 to 2016 provides some context with regard to issues observed on the OCS. In 2016, 475 incidents were reported. The Coast Guard records its incident data using slightly different thresholds.

Incident Type	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fatalities	5	12	4	12	3	1	4	2	1	2
Injuries	322	263	260	253	221	280	276	285	206	151
Loss of Well Control	6	7	7	4	5	3	8	5	3	2
Fires/Explosions	145	141	148	134	113	132	116	135	105	86
Collisions	26	28	26	14	11	13	21	16	9	9
Spills (>50 bbls)	7	33	7	9	4	5	10	5	7	3
Lifting	180	185	243	118	110	167	197	210	161	155
Gas Releases	14	22	33	20	17	27	21	21	21	17
Evacuation Musters	33	43	55	31	36	48	68	52	70	50
<b>Total</b>	<b>738</b>	<b>734</b>	<b>783</b>	<b>595</b>	<b>520</b>	<b>676</b>	<b>721</b>	<b>731</b>	<b>583</b>	<b>475</b>

**Table 2** During federal fiscal year 2016, BSEE conducted 4,133 OCS facility inspections, which resulted in the issuance of 139 facility shut-in Incidents of Noncompliance. The 4,133 facility inspections included 21,998 component inspections.

	Production Facilities	Well Operation Facilities	Total
Number of 2016 Inspections	3254	879	4133
Number of 2016 Facility Shut-In INCs	116	23	139
Percent of Inspections that resulted in Shut-Ins	3.6%	2.6%	3.4%

**Table 3** The Coast Guard conducts a variety of marine inspections related to the offshore oil and gas industry. Below is a summary of Coast Guard inspection by vessel type. During federal fiscal year 2016, the Coast Guard conducted 1,552 such inspections, which resulted in the issuance of 19 operational controls, which are a type of enforcement action.

	Platform	Floating Production Storage & Offloading	Floating Production System	Liftboat	Mobile Offshore Drilling Unit	Offshore Supply Vessel	Total
Number of 2016 OCS Inspections	36	7	177	36	117	1179	1552
Number of 2016 Operational Controls	1	1	4	0	8	5	19
Percent of Inspection Controls	2.8%	14.3%	2.3%	0%	6.8%	0.4%	1.2%

Z-INC Inspection Data	
Fixed Facilities Manned	777
Fixed Facilities Unmanned	1412
<b>Total</b>	<b>2189</b>
Full Inspections	149
Partial Inspections	2020
<b>Total</b>	<b>2169</b>
Warning Z-INC	157
Component Shut-In Z-INC	20
Facility Shut-In Z-INC	0
<b>Total</b>	<b>177</b>
Number of Facilities Issued a Z-INC	130
Z-INC Issue Rate	5.9%
Compliance Rate	94.1%

**Table 4** Table 4. A Z-INC inspection is an inspection that is performed by a BSEE inspector on behalf of the Coast Guard. BSEE inspectors receive specific training before performing such inspections. Below is a summary of Z-INC inspections performed during 2016. Advantages from this approach include taxpayer savings because only one inspection team is sent to the platform (a BSEE team). Also, the operator saves effort because they only have to assign personnel for one day to accompany a single team.

The Coast Guard and BSEE continue to harmonize protocols to collect, share and evaluate compliance data in an effort to bolster joint compliance enforcement. The ability to share and analyze this type of data has expanded safety awareness for both agencies and has improved recognition of significant incident trends and safety related vulnerabilities affecting commercial operations on the OCS. Both agencies now have a better understanding and a clear operational picture narrating all compliance activities and issuance of operational control and facility shut-in Z-INCs, such as those enumerated in Table 4. As part of the ongoing effort to propel safety culture on the OCS, both agencies are strongly committed to continue exchanging critical compliance data, which, in return, helps the agencies plan, coordinate and execute future joint inspection and investigations efforts.

## Oil Spill Response Work Group

BSEE’s Oil Spill Preparedness Division and the Coast Guard Office of Marine Environmental Response continued their ongoing coordination to improve safety and environmental stewardship through oil spill planning and response efforts. The Response Work Group meets quarterly to coordinate and promote cooperation at the headquarters and regional levels. The spirit of cooperation was reaffirmed in October 2016 when the Response Work Group updated its charter to establish new tasks to formalize and publish processes related to synchronizing offshore worst case discharge scenarios and the review of oil spill response plans and area contingency plans. This commitment to cooperation was further reaffirmed on January 18, 2017 with the signing of the updated Memorandum of Agreement on Oil Discharge Planning, Preparedness, and Response. Further collaborations are evidenced by the Coast Guard (Chair) and BSEE (rotating Vice Chair) roles as key leaders of the Interagency Coordinating Committee on Oil Pollution Research where they promote coordinated

federal research and data sharing among the 15 member agencies. Also, OSPD participates on the Spills of National Significance Executive Steering Committee, which is led by the Coast Guard.

In FY 2016, BSEE coordinated reviews with the Coast Guard on 128 OSRPs. Under the agreement, BSEE notifies and provides the USCG with access to digital copies of OSRPs. BSEE considers the Coast Guard comments in the OSRP review process. Similarly, the Coast Guard ensures that worst case discharge values in the OSRPs are consistent with Area and Regional Contingency Plans. BSEE is also providing the Coast Guard with access to the new ePermits system, which allows operators to upload planning documents for easier retrieval and use.

BSEE and the Coast Guard regularly cooperate on oil spill research. During 2016, BSEE funded an assessment of the Coast Guard's Aviation Force's capability for airborne oil spill remote sensing and reporting. BSEE also completed tests of the Coast Guard's Ice Cage skimmer system and assessed ways to mitigate oil in the water column. BSEE also contributed funding and expertise to help update the Coast Guard's Joint Maritime Test Facility burn pan in Mobile, Alabama. To date, the agencies have used the facility to conduct two tests of in situ burning innovations and develop a manual for conducting tests at the facility. The tests have examined the use of herding agents in waters and a flame refluxer system that improves burn efficiencies and reduces soot.

## A Closer View

It is worth noting that, on a daily basis, a great deal goes right on the OCS. The examples below are the exceptions. As the *Deepwater Horizon* tragedy demonstrated, the risks inherent to offshore drilling are both real and potentially catastrophic. For these reasons, federal agencies such as the Coast Guard and BSEE approach offshore safety and environmental compliance using the principles of high reliability organizations. The chances of an incident may be low, but the costs of an incident may be particularly great; so great that risk must be pushed toward zero. Fortunately, in the two examples below major catastrophes were avoided.



***The charred component of this thruster reveals evidence of a fire. Working jointly, the Coast Guard and BSEE helped make sure that the drillship's maintenance, testing and inspection program addressed the underlying cause of this second fire that was tied to the same component.***



## Drillship DP Thruster Fires

Early last year, the Coast Guard completed an investigation of a fire on a dynamically positioned drillship operating on the OCS (see photo on page 10). The Coast Guard determined that the incident was the second thruster fire in the same thruster due to the same component failure. The Coast Guard, in consultation with BSEE, conducted a post casualty inspection that included an evaluation of the drillship's International Safety Management System code compliance and Safety and Environmental Management Systems program. The Coast Guard and BSEE worked with the lessee, drilling contractor, flag state, and the classification society to ensure the drillship's maintenance, testing and inspection program for DP system thrusters (a critical system) addressed the root cause of these fires. The drilling contractor applied the lessons learned throughout its fleet.

## Gas Pipeline Facility Inspection

In March 2016, the Coast Guard and BSEE conducted a joint safety and security inspection on a gas transmission pipeline facility that involved a complex set of multiple jurisdictions that services multiple major production facilities. The inspection uncovered multiple egregious safety issues such as evidence of smoking /exposed live electrical wires in hazardous areas and severely corroded gas transmission piping. The facility was a substantial explosion risk the Coast Guard and BSEE worked with Pipeline and Hazardous Materials Safety Administration to ensure all hazards were addressed.



***These corroded bolts on this temperature gauge were one of several issues observed during a Coast Guard inspection of the gas transmission pipeline facility. The Coast Guard notified BSEE of its findings, prompting a joint Coast Guard BSEE inspection.***

## Field Spotlight

On the following two pages are two staff spotlights with Coast Guard and BSEE professionals, that illuminate their dedication to the safety of offshore oil and gas industry workers and their commitment to helping minimize the environmental impacts of OCS operations.

## Spotlight on Tim McGraw, BSEE Inspections Operations Coordinator, Gulf of Mexico Region



***During a BSEE-Coast Guard training activity, Tim McGraw points out components that need to be examined.***

Tim McGraw starts off his year by understanding exactly what goals have been set for his areas of responsibility. Then he charts an efficient course to meet each. One goal that falls to him is coordination with the Coast Guard. Another major goal that he facilitates, along with a number of BSEE inspectors, is making sure that BSEE boards every offshore oil and gas production facility within that year. The hundreds of inspections he coordinates involve both production facilities and, more frequently, well operations. McGraw keeps on top of progress toward goals, and is known for keeping the districts apprised of their goals and how well they are achieving them. He's also a big believer in keeping the work standardized across districts, so that operators know what to expect.

McGraw thinks some of his most rewarding collaborations are those he has with Clint

Townsen, his Coast Guard counterpart. They coordinate joint monthly inspections on both production and well operations and try to schedule at least two such inspections per month (more if the need arises). One example McGraw gives is being informed of mold in the offshore crew's living quarters, which is a health hazard that does not fall under BSEE's jurisdiction. McGraw reached out to the Coast Guard and a follow-up joint inspection resulted in the living quarters being fully inspected. McGraw also contacts the Coast Guard for certain technical issues, often reaching out to the Coast Guard OCS Officer in Charge of Marine Inspections and the Coast Guard's Offshore National Center of Excellence. By collaborating, McGraw explains, both BSEE and the Coast Guard reduce redundancy, ensure consistent responses to issues that may arise, and develop a good working relationship that results in streamlined work processes.

McGraw sees the opening of BSEE-developed training courses to Coast Guard inspectors as a major sign of the collaborative effort. Following from that, Coast Guard staff now tour BSEE district offices to learn more about BSEE's oversight of offshore oil and gas production and well operations. Frequent and open communications and shared goals are critical to maintaining this strong collaboration, according to McGraw. By working together, he explains, both agencies tap into each other's findings, trend analysis and data to help develop more productive inspections. Joint inspections also help industry, according to McGraw, because it adds clarity and uniformity to the process. Gray areas, he points out, become clear when lines of communication become strong.

## LTJG Kevin Berto, United States Coast Guard, Marine Safety Unit, Morgan City, LA, Sector New Orleans, Eighth District



***LTJG Kevin Berto (center) inspecting a component during a joint Coast Guard-BSEE pipeline facility inspection.***

LTJG Berto, a Coast Guard marine inspector, has been entrusted with ensuring compliance of offshore installations. Beyond those duties, LTJG Berto leads the OCS's strategic efforts to leverage federal partnerships. In pursuit of these goals he participates in a wide variety of joint inspections with BSEE inspectors and is deeply involved with issues related to safety management systems.

LTJG Berto describes the coalition between the Coast Guard and BSEE as one that has expanded the capabilities of both agencies, thus improving safety oversight and environmental performance of offshore installations. A recent example of the Coast Guard and BSEE working together to expand capabilities was during a SEMS audit conducted in response to a Coast Guard inspection that uncovered a disabled lifeboat, fire pump, and

emergency power supply on board a floating installation. The next-day a joint agency inspection uncovered additional manifestations of safety management systems deficiencies and resulted in the restoration of integrity of vital industrial system safety devices not normally involved in Coast Guard inspections. This experience, among many others, allowed the Coast Guard inspectors and BSEE staff to better align approaches to safety management system audits and offshore inspections. A close inter-agency partnership, Berto explains, ensures consistent enforcement and reduces redundancy.

The ability to rapidly communicate findings as well as coordinate effective joint enforcement options has improved the safety culture of industry operators on the OCS. Berto cites a specific inspection of an offshore gas transmission platform where rapid coordination of enforcement options prevented a potential explosion and safeguarded the economic vitality of the Gulf of Mexico oil and gas industry. The collaborations with BSEE, according to Berto, enhance both agencies, especially during casualty responses and joint investigations. Berto anticipates that both agencies will increase collaboration in the future, expanding cross training and further developing data systems to exchange crucial and timely information.



# Glossary of Abbreviations

BSEE	Bureau of Safety and Environmental Enforcement
LTJG	Lieutenant Junior Grade
MOA	Memorandum of Agreement
OCS	Outer Continental Shelf
OSRP	Oil Spill Response Plan
PHMSA	Pipeline and Hazardous Materials Safety Administration
SEMS	Safety and Environmental Management System





## For Additional Information



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