

# FOLLOWING THROUGH:

How Industry and Government are  
Improving the Safety of Offshore Energy  
Development in the Post-Macondo Era

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For the latest report,  
please visit <https://www.api.org/oil-and-natural-gas/health-and-safety/exploration-and-production-safety/offshore-safety>

energy **API**





The oil and natural gas industry and the federal government have together taken great strides to enhance the safety of offshore operations. Since Macondo, industry has focused on increasing its ability to:

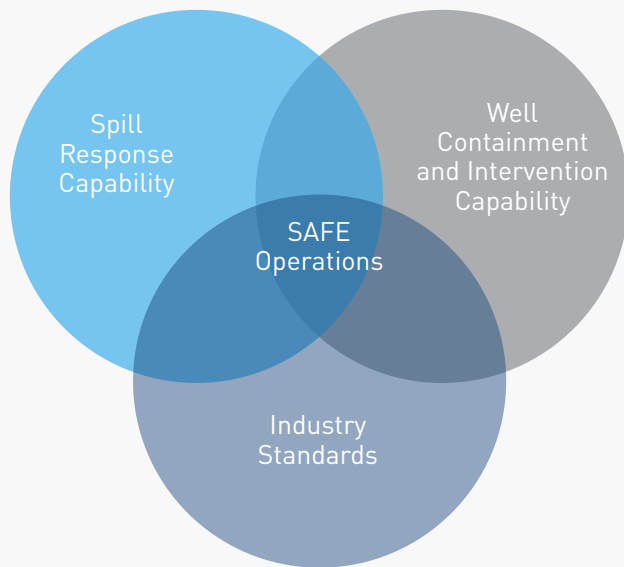
- ▶ **PREVENT** spills from occurring.
- ▶ **INTERVENE** to halt any spill that does occur.
- ▶ **RESPOND** to spills with the most effective mitigation measures possible.

As always, standards and best practices will continue to be reviewed on an ongoing basis in order to protect the environment and promote the safe and responsible development of energy sources that help fuel the American economy.

# AFTER MACONDO:

## Industry and Government Made Significant Improvements to Prevention, Intervention and Response Capabilities

### Restoring Confidence in Offshore Operations



### IMMEDIATE INDUSTRY ACTION

Immediately after the Macondo incident, the U.S. oil and natural gas industry launched a comprehensive review of offshore safety measures and operations to enhance safety and environmental protection by identifying best practices in offshore drilling operations and oil spill response. Four industry panels were assembled to focus on the critical areas of equipment, operating procedures, subsea well control and containment, and spill response. The panels also worked with the U.S. Department of the Interior and the Presidential Oil Spill Commission to help form their recommendations to improve offshore safety and the regulatory framework.

The goal of this ongoing effort is continuous improvement of comprehensive safe operations through evaluation and revision of industry guidelines and procedures and active engagement with regulators.

The full suite of industry reports and recommendations are available at <https://www.api.org/oil-and-natural-gas/environment/clean-water/oil-spill-prevention-and-response/api-joint-industry-task-force-reports>.

In addition to the initial work focused on drilling operations, the U.S. oil and natural gas industry has been on a continuous improvement journey to enhance safety and environmental protection in all areas of offshore exploration, production and oil spill response.

### PREVENTION: INDUSTRY STANDARDS

API standards raise the level of safety performance across the industry, and more than 100 have been incorporated into offshore federal regulation. The industry has 275 exploration and production standards that address offshore operations, covering everything from blowout preventers to comprehensive guidelines for offshore safety programs. Since 2010 API has published over 250 new and revised exploration and production standards, including standards for:

- Well design, cementing and operator/contractor interaction.
- Blowout prevention equipment design, operation, repair and maintenance, and associated control systems.
- Subsea equipment interfaces with remotely-operated vehicles and well capping equipment.
- Protective equipment for oil spill response workers.
- Integrity Management and Safety and Environmental Management Systems.

Reviewing and improving industry standards has always been a top priority. Since 1924, API has been the leader in developing industry standards that promote reliability and safety through the use of proven engineering practices. The API standards process is accredited by

the American National Standards Institute (ANSI), and all API standards are reviewed on a regular basis to ensure they remain current. Government-referenced and safety-related standards may be freely viewed online at <http://publications.api.org>.

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**PREVENTION + INTERVENTION + RESPONSE**  
**+ ONGOING IMPROVEMENT =**  
Safe and Environmentally Sound Operations

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## INTERVENTION: WELL CONTAINMENT

The Marine Well Containment Company (<http://marinewellcontainment.com>) and HWCG (<http://www.hwcg.org>) were founded in 2010 to provide containment technology and response capabilities for the unique challenges of capping a well that is releasing oil thousands of feet below the water's surface.

These companies maintain quickly deployable systems that are designed to stem any uncontrolled flow of hydrocarbons from a subsea well and facilitate training of their member companies on the installation and operation of these systems. Their systems also provide the potential to capture flow from a subsea well incident via subsea equipment, risers and containment vessels that can safely capture, store and offload the oil.

## RESPONSE: OIL SPILL PREPAREDNESS AND RESPONSE

The United States has established one of the world's most sophisticated and well-coordinated spill response networks, administered by the National Contingency Plan (NCP). By bringing together the resources and expertise of private industry, public agencies

and academia, we ensure we learn everything we can from past incidents. Since Macondo, oil spill response organizations have increased their capabilities by increasing training and by updating their suites of response equipment that enable them to respond to a spill with all the tools we have at our disposal. Assessments conducted immediately after the Macondo incident also led to the creation of new guidance documents and reports, including:

- Guidance on the creation of offshore oil spill response plans (API Recommended Practice 1145 – Preparation of Response Plans for Oil Spills from Offshore Facilities).
- An evaluation of the mechanical recovery systems used at sea during the Macondo incident.
- A report and field guide for spills on sand beaches and shoreline sediments, including protection techniques and detection and response capabilities.
- An evaluation of the process by which alternative technologies are reviewed for use during an oil spill.

In addition, API and the oil and natural gas industry have established a robust program of oil spill response research and development, with a focus on: planning, mechanical recovery, dispersants, in-situ burning, remote sensing, shoreline protection, alternative technologies and inland spill response.



Results from these efforts have been published in peer-reviewed academic journals and in conference proceedings around the world, with the goal of educating the global oil spill response community. All final reports from these efforts are publicly available at <http://oilspillprevention.org>.

The industry has also invested in two international oil spill preparedness and response programs focused on improving industry operational capabilities in all parts of the world including the Arctic. These two programs are coordinated with API's activities, and together, they represent a comprehensive, global approach to continued advancements in oil spill preparedness and response.



## ONGOING IMPROVEMENTS: CENTER FOR OFFSHORE SAFETY

In 2011, the industry formed the Center for Offshore Safety (COS) to help improve the safety performance of America's offshore oil and natural gas industry. The COS promotes the highest level of safety and continuous improvement for offshore drilling, completions and operations through enhanced communication of best practices within the industry, use of effective safety and environmental management systems, and analysis of findings identified by independent third-party auditing programs.

The COS has developed Safety and Environmental Management Systems (SEMS) tools for auditor qualification, conducting audits and accreditation of Audit Service Providers. The Bureau of Safety and Environmental Enforcement (BSEE) has adopted three COS guidelines into its own regulations, and the COS continues to work on additional guidelines to strengthen industry's safety culture and advance its mission.

The mission of COS is to promote the highest level of safety for offshore drilling, completions, and operations through:

- Effective leadership
- Communication
- Teamwork
- Use of disciplined SEMS
- Third party auditing & certification

COS is governed by a diverse board representing the breadth of the industry. The board includes operators, drilling contractors, service and supply companies, and other Associations. COS has a full-time staff. This staff works with numerous industry committees, subcommittees and work groups organized by COS to address specific SEMS concerns and opportunities.

SEMS in the U.S. industry and the work of COS is based on and defined by API RP 75. Thus, COS is focused on delivering SEMS tools and techniques based on API RP 75 as well as identified needs from safety data. The work continues as part of COS's commitment to learn and continuously improve SEMS and Safety Culture via SEMS. Currently COS is in the process of updating documents and processes for the new edition of API RP 75.

## COS CORE FUNCTIONS

COS's initial work was focused on SEMS auditing to support an independent third-party SEMS auditing process. The development of standard and uniform COS audit tools, processes, and audit documents assists in implementing SEMS, and creating uniformity that would enhance sharing and learning from audit results.

## COS's work now focuses in the following areas:

1. SEMS Audit Tools and Good Practices
2. Data Collection, Analysis and Reporting
  - SEMS audit data
  - Learning from Incidents (LFIs)
  - Safety Performance Indicators (SPIs)
  - Annual Performance Report
3. Good Practice Development
  - Continual improvement of SEMS
  - Create good practices to close SEMS gaps
4. Sharing Industry Knowledge
  - Facilitate the sharing and learning process
  - Interface with industry leaders to assure system deficiencies are recognized and addressed
  - Conduct forums, workshops and other sharing events
5. Accreditation
  - Accreditation of qualified third-party Audit Service Providers
  - Overseeing that ASP assure their SEMS audit management systems meet the COS audit requirements and the regulator requirements

From the beginning, COS has provided a place for the industry to come together, share lessons learned and collaborate regarding SEMS. More information on COS can be found at <http://www.centerforoffshoresafety.org>.



## FEDERAL GOVERNMENT ACTIONS

The federal government responded to the Macondo incident by reorganizing the Minerals Management Service (MMS) and initially focusing on four areas of regulatory policy:

- 1) Blowout prevention
- 2) Drilling safety
- 3) Spill response
- 4) Well containment

**To help accomplish this, the MMS was reorganized into three new agencies:**

- The Bureau of Ocean Energy Management (BOEM), responsible for energy leases in areas of the U.S. Outer Continental Shelf;
- The Bureau of Safety and Environmental Enforcement (BSEE), responsible for enforcement of safety and environmental protection in all offshore energy activities; and,
- The Office of Natural Resources Revenue (ONRR), responsible for management of royalties and revenues.

These new agencies identified areas for improvement through a series of regulatory and policy actions, including:

- Requiring operators to follow new procedures when calculating worst-case scenarios for loss of well control and determining how to effectively manage such an event.
- Subjecting blowout prevention systems to new testing, inspection and maintenance requirements.
- Requiring oil spill response plans to have a signed statement of compliance and adequate well containment resources to be readily available.
- Requiring safety and environmental management systems (SEMS) to address all elements of API's Safety and Environmental Management Program standard (API RP 75) and be subject to verification through audit.

In addition, the United States Coast Guard (USCG) has taken actions to address guidance received in its internal investigation and report of the Macondo incident. These include rulemakings to address the following:

- Operations and equipment on mobile offshore drilling units (MODU).
- Voluntary Incident reporting for MODU dynamic positioning systems to facilitate industry-wide improvements in system reliability.
- Testing and training requirements for lifesaving and firefighting equipment on MODUs and floating production facilities.

The USCG has also entered into two Memorandums of Agreement with BSEE, one to delineate responsibility for inspection and oversight on MODUs, and another to strengthen agency management of safety and environmental protection responsibilities. The USCG has also reorganized its management of offshore inspections to provide for a single point of responsibility.

## SUMMARY

The offshore oil and natural gas industry remains committed to following through on our responsibility to operate in a safe and environmentally sound manner. Together with changes being made by federal regulators, our collective actions will serve to improve the safety of offshore energy development and continue to provide the resources needed to increase our nation's energy security.



