

Q&A on Transocean Deepwater Horizon Incident, Oil Spill and Subsequent Issues

Q: What happened to the Deepwater Horizon rig? What are the potential environmental consequences?

A: We don't know for sure yet, but investigators from the U.S. Coast Guard and other state and government agencies are on the scene. Results from the investigation will be used by the industry, in cooperation with regulators, to reduce the chances that incidents such as this one happen again.

Q: Were there any previous safety violations or incidents with the Deepwater Horizon rig?

A: The Deepwater Horizon was one of five Transocean ships given safety awards by the U.S. Minerals Management Service (MMS) in 2009, and that the ship was inspected three times since January by the regional MMS office and found to be in compliance.

Q: News reports indicate that API, BP and others in the industry opposed new safety regulations proposed by the Mineral Management Service in September 2009? Why does API and the industry oppose new safety regulations, and doesn't this incident confirm the need for increased regulation?

A: Neither API nor its member companies oppose safety regulations. API supports the development of safety management systems and expressed concern to the government about the potential effectiveness of the proposed safety regulations.

Strong, comprehensive, and effective safety and environmental management systems are vital to drilling operations. API and industry companies voluntarily developed and continue to maintain Recommended Practice 75, Development of a Safety and Environmental Management Program for Offshore Operations and Facilities. This document was originally developed in 1993, with a third edition published in 2004 and reaffirmed in 2008, and its guidance is followed by many Gulf of Mexico operators. The MMS proposal would adopt only portions of this document, while re-writing other provisions. We are concerned that this ultimately could work counter to the goal of safe and environmentally sound operations. API and the industry will continue to work with MMS, the Coast Guard and other agencies to ensure that any regulations first and foremost protect the workers.

During the past several decades, API has brought together the best minds in the industry and at the MMS to develop dozens of standards and best-practices that contain guidance and recommendations to address safety concerns. Both the MMS and the Coast Guard often incorporate industry standards into their regulations, giving them the force of law, and the standards and recommended practices are regularly reviewed and updated.

Industry Task Forces

Q: What is the industry doing in response to the Deepwater Horizon accident?

A: In the wake of the oil spill in the Gulf of Mexico, the U.S. oil and natural gas industry has formed four task forces. These address offshore equipment and technology, offshore operating procedures and both short- and long-term issues related to subsea well control (stopping/mitigating the release of product at the point of origin) and spill response and cleanup. The ultimate goal of these task forces is to improve offshore safety and environmental protection by learning from any gaps identified from this tragedy.

Q: Will the task forces findings be made public?

A: All four task forces will work with government investigations as well as the SWAT teams that BP is presently assembling. All findings will be incorporated in final reports from those investigations.

Q: Who sits on the task forces?

A: The task forces bring together relevant experts from the oil and natural gas industry and government to identify and further reduce risks of offshore operations.

Q: For how long will these task forces be assembled?

A: Just as we don't yet know the cause of the accident, we also don't know how long we will need to dedicate the industry's efforts to these task force investigations. These task forces also roll up into larger governmental investigations so ultimately we will have the task forces in place as long as we need to find answers. Additionally, we expect these task forces to inform API standards for the long-term.

Q: What is the focus of the offshore equipment task force?

A: The offshore equipment task force will bring equipment manufacturers, industry subsea equipment specialists and deepwater contractors to focus on maintenance, response and testing of blowout preventer-equipment and remotely operated vehicles, or ROVs.

Q: What is the focus of the offshore operating procedures task force?

A: The offshore equipment procedures task force will leverage the expertise of offshore operators and members of the service sector to strengthen practices related to drilling and completion of deepwater wells.

Q: What is the focus of the subsea well control and response task force?

A: The task force focusing on subsea well control and response will address technologies and practices for controlling the release of oil from its source. It also will review equipment designs, testing protocols, research and development, regulations and documentation, and make recommendations for improvements. Among other things, it will look at various well-control procedures, including the "junk shot," coffer dams, "top kill" and other subsea containment and collection methods.

Q: What is the focus of the oil spill response task force?

A: The oil spill response task force will review existing spill-response processes and technologies, identify gaps and seek options to address those gaps through recommended practices and procedures, as well as research and development. Among other things, it will look at planning and pre-staging of assets, mechanical recovery methods, dispersants (including their toxicity and application), shoreline protection issues, bio remediation, unconventional response technologies, wetlands protection and the use of volunteers.

The Drilling Moratorium

Q: Does API support President Obama's six month delay in issuing permits to drill new deepwater wells?

A: API opposes lengthy or open-ended delay of offshore oil and natural gas development, as proposed today by the administration. Offshore development is crucial to creating and saving jobs and strengthening U.S. energy security.

Deepwater development is a key component of domestic energy security. In 2007, deepwater provided 70 percent of the oil and 36 percent of the natural gas from overall federal Gulf of Mexico production. The 20 most prolific producing blocks in the Gulf are located in deepwater.

Q: How will the cancelation of lease sales off the coast of Alaska, Virginia and in the Western Gulf impact the industry?

A: Additional moves to curtail domestic production by postponing exploration and development off the coasts of Alaska and Virginia, as well as areas in the Gulf, have the potential to significantly erode our energy and economic security.

Decisions that impact the industry's ability to produce the oil and natural gas this country needs in every sector of our economy and in every household in this country will affect the lives of every citizen, every day. We will encourage the administration and Congress to reconsider any decisions that would place previously available lease areas off limits, and to ensure that there is a process and a timeline for revisiting decisions that impact our energy and economic future.

Q: What will be the long term affects of a drilling moratorium?

A: An extended moratorium on safely producing our oil and natural gas resources from the Gulf of Mexico would create a moratorium on economic growth and job creation—especially in the Gulf States whose people and economies have already been most affected by the oil spill—by undercutting our nation’s access to affordable, reliable, domestic sources of oil and natural gas.

But this issue is much larger than the oil industry, since access to affordable energy impacts every sector of our economy, every state in our nation and every American family. Further, thousands of products – from toothpaste to iPods, cell phones to computers, and vitamins to vegetables – use oil and natural gas as a feedstock in the manufacturing process.

Safety, Planning and Response

Q: Is offshore drilling safe?

A: The oil and natural gas industry has a strong safety and environmental performance record, despite a work environment that often involves heavy equipment, hazardous materials, high temperatures and high pressure equipment.

Offshore oil and natural gas development has been safely conducted for more than 60 years. Within that time, more than 42,000 wells have been drilled, including more than 2,000 deepwater wells, or wells drilled in water depths of 1,000 feet or more. Despite a challenging operating environment, overall offshore performance has shown steady and significant improvement over the last several decades.

America’s oil and natural gas industry considers safety its top priority. We are committed to developing the technologies, standards and best practices needed to help ensure that workplace safety and environmental stewardship are at the forefront of the offshore development process.

Q: What is the industry’s offshore record as it relates to worker safety? What about spills? Is there data available?

A: In the past 60 years, America’s oil and natural gas industry has produced more than 16.3 billion barrels of oil in the Gulf of Mexico – and had just 0.00123 percent of that oil spilled.

The strong environmental performance of offshore production facilities was demonstrated in 2005 during Hurricanes Katrina and Rita, when the industry was able to safely evacuate its workers and shut down production of more than 3,000 offshore platforms that withstood winds gusts of more than 200 mph without loss of life or any significant offshore spills.

Q: How many workers are hurt in OCS operations in a given year?

A: As the industry continually evaluates and advances its safety technology, incidents in offshore operations have sharply declined. The industry reported nearly a third fewer incidents in 2009 than in 2007.

Q: What types of standards and best practices are in place to support safe offshore operations?

A: The industry has helped create more than 235 exploration and production standards that improve offshore operational safety, and 78 of these standards are referenced in Minerals Management Service regulations. These standards are developed under a program accredited by the American National Standards Institute (ANSI), and API undergoes regular program audits to ensure API continues to meet all of ANSI’s due process requirements.

Additionally, companies work closely with local, state and federal regulators to ensure safety in the offshore operating environment. This includes the U.S. Coast Guard and the MMS, who conduct offshore facility inspections on a regular basis. Offshore operators must also obtain 17 major federal permits and comply with 90 sets of regulations to operate on the OCS.

Q: Does the oil and natural gas industry have plans/protocol in place in case of an oil spill?

A: Together with government and oil spill response organizations across the country, the oil and natural gas industry has developed an oil spill prevention, preparedness and response program and mutual aid regime that is recognized around the world. Under federal law, all companies with offshore facilities must file oil spill contingency plans with the Minerals Management Service and emergency response plans with the U.S. Coast Guard.

Employees must be adequately trained and spill response equipment must be available and properly maintained. To ensure response capabilities remain at a high level, federal and state agencies conduct regular and unscheduled drills and inspections.

Q: What other specific procedures does the oil and natural gas industry employ to practice and maintain safe operations?

A: The oil and natural gas industry maintains a culture of safety in the areas of company procedures and operations, technology and design, and inspections by:

- Encouraging intervention in unsafe or non-compliant situations, empowering operations managers and supervisors to develop solutions to safety issues and rewarding successful performance.
- Ensuring company operating procedures are simple, clear and easy to understand and follow.
- Applying good design principles and engineering and operating practices to reduce the likelihood and severity of safety incidents.
- Maintaining structured inspection and maintenance programs, applying safe work controls, regularly testing integrity-critical equipment, and adhering to strict procedures.
- Using advanced technologies and systems that alert operators to investigate abnormal operating events in offshore operations and facilities.
- Routinely testing operating teams on myriad scenarios, including simulated product spills, fires, explosions, natural disasters and security incidents.
- Correcting potential risks and determining their root causes to prevent recurrence.
- Measuring lagging indicators, which record events that have already occurred, and leading indicators, which focus on the strength of controls, to prevent incidents; including inspections and testing of safety-critical equipment.

Spill Prevention Technologies

Q: What spill prevention systems were in place on the Deepwater Horizon? A: All drilling rigs are equipped with well control systems, including a blowout preventer (BOP), which is designed to close and stop the flow of oil in an emergency. In many cases, rig operators may incorporate additional back-up methods as supplementary safeguards to close the well.

Q: How do BOPs work?

A: Subsea BOP systems, also known as BOP stacks, contain a series of ram BOPs, annular BOPs and other devices, that are designed to close off the wellbore in various drilling situations. As a first line of defense in a blowout, pipe ram BOPs and annular preventers close around pipe in the well to stop the blowout surge. BOP stacks also have blind and shear rams in the case of an extreme event. These rams are designed to close and seal the entire wellbore to stop a blowout. Blind rams close to seal the wellbore if there is no pipe in the well, while shear rams cut through pipe (if the drill is still in the well) to close and seal the wellbore.

Q: How are BOPs activated in an emergency?

A: Subsea well control systems contain multiple redundant systems that activate the well control system (control panels), deliver power supplies to the BOPs (electric cables and hydraulic lines), and control the functions of the BOP (control pods). In addition, back-up control systems may be installed to operate selected functions of the well control system in the event of power loss from the surface.

Types of back-up control systems include remotely operated vehicle (ROV) systems and acoustic control systems. An ROV backup system includes an operating panel mounted on the BOP stack that will allow activation of certain BOP functions, including the ability to shut-in the well in an emergency situation. An acoustic backup control system uses coded acoustic signals for communication between the surface and sea floor. It may be used to control selected critical BOP functions.

Q: How are BOPs regulated?

A: Minimum regulatory requirements for a subsea BOP stack call for one annular preventer, two pipe ram BOPs and one blind/shear ram BOP. The BOPs must be pressure tested upon installation and every 14 days thereafter and must be functionally tested every seven days. BOPs come in a variety of pressure ratings. Companies will choose the appropriate BOP stack based on the expected conditions of the well.

Q: What does the industry know about BOP functionality in deepwater conditions?

A: BOPs have been in use for nearly a century. As drilling technologies have advanced, the stress tolerances of these safety devices have improved. Engineers constantly test new devices in labs mimicking the pressures and temperatures of the deep sea environment.

Q: What other spill prevention technologies does the industry use?

A: Additional systems can provide further safeguards, such systems include auto-shear and deadman. An auto-shear system is designed to automatically seal the wellbore if the riser were to disconnect above the BOP. A deadman system is designed to automatically close the wellbore in the event of a simultaneous loss of hydraulic and electrical power supply to both subsea control pads.

Industry Standards

Q: What is the purpose of industry standards?

A: Industry standards promote reliability and safety through the use of proven engineering practices. Since 1924, API has been the leader in developing these voluntary standards.

Q: Are these standards accredited?

A: The API Standards Program is accredited by the American National Standards Institute (ANSI), the authority on U.S. standards, and undergoes regular program audits to ensure it meets ANSI's Essential Requirements of openness, balance, consensus and due process. This is the same body that accredits programs at several national laboratories. API's standards are developed through a collaborative effort with industry experts, as well the best and brightest technical experts from government, academia and other interested stakeholders.

Q: What do these standards cover?

A: API maintains more than 500 standards—recommended practices, specifications, codes, technical publications, reports and studies—that cover all aspects of the oil and natural gas industry, including 240 focused on exploration and production activities.

Q: How often are these standards reviewed?

A: API standards are reviewed on a regular basis to ensure they remain current, with the normal review cycle being five years, although some standards may be reviewed more frequently based on advances in technology or other demonstrations of need.

A recent study² on the use of standards by international regulators found through a survey of 14 oil producing regions that “Regulators make good use of standards...with 1348 references to standards identified” in regulations, and that “API standards are dominating, with 225 references, including 49 API Manual of Petroleum Measurement (MPMS) standards.”

Q: Does the federal government recognize these standards?

A: API's standards are referenced in federal regulations because they are recognized to be industry best practices. For example, the Minerals Management Service references 78 API standards in its offshore regulations. Overall, nearly 100 API standards are referenced in more than 270 citations by government agencies, including the Environmental Protection Agency, the Department of Transportation and the Occupational Safety and Health Administration, in addition to the Minerals Management Service.

Mutual Aid/Company Response

Q: What is the oil and natural gas industry doing in response to the Deepwater Horizon accident?

A: Right now the industry's three priorities are 1) stopping the leaks; 2) cleaning up the spill; and 3) determining what went wrong and applying the lessons learned to reduce the chances of this ever happening again.

Additionally, in order to move expeditiously toward the goal of preventing similar incidents, the industry is forming two task forces to review offshore equipment and technology and to review offshore operating procedures. The industry looks forward to working closely with the government on both task forces.

Q: Are other oil and natural gas companies helping in the response efforts?

In addition to BP and the government, the industry is responding to this incident with many oil companies providing assistance in the form of personnel, equipment, and expert knowledge and counsel.

Q: What are other oil and natural gas companies doing to help?

In addition to overall support on spill response and cleanup efforts, oil and natural gas companies have provided the following forms of assistance:

People and Expertise:

- Drilling and technical experts across the industry to help determine solutions to stopping the spill and mitigating the spill's impact, including experts in the areas of subsea wells, environmental science and emergency response.
- Technical advice on blowout preventers, dispersant injection, well construction and containment

options.

Vessels and Equipment:

- Additional drilling rigs to serve as a staging area for equipment and responders
- Advanced underwater vehicles that allow technicians and engineers to get a first hand view of the sea floor
- Equipment to provide live video feeds from the ocean floor
- Oil spill response vessels and other vessels to help transport equipment to response sites
- Barges to capture and store oil that is skimmed up by response vessels, and shallow water barges that hold pontoons used for skimming and can be deployed in shallow water situations to protect the shoreline
- Support vessels with dispersant chemicals, tanks and assorted tools to be lowered to the well head to inject the dispersant directly into the leak stream
- Aircraft and helicopters deploying surface dispersants
- Equipment such as dispersants, fire boom and radios
- Identifying, procuring and manufacturing additional supplies of dispersant for potential use
- A portable wildlife rescue trailer
- Providing training and conference center space to the Unified Command team, including accommodations and press conferencing space

Deepwater Drilling

Q: Given this disaster shouldn't the government restrict or halt deepwater drilling in the Gulf of Mexico?

A: While understanding and correcting the causes of the Gulf of Mexico accident are essential, the American Petroleum Institute opposes lengthy or open-ended delay of offshore oil and natural gas development, as proposed by the administration. Reducing U.S. domestic oil production will lead to hundreds of thousands of lost jobs, billions of dollars of lost government revenue and a sharp decrease in our nation's energy security.

Deepwater development is an essential part of oil and natural gas production in the Gulf of Mexico, and our nation's energy future. Approximately 80 percent of the oil and 45 percent of the natural gas in the Gulf come from deepwater exploration. Of the more than 7,300 active leases in the Gulf of Mexico today, 58 percent of them are in deep waters – including the 20 highest producing leases in the Gulf.

Additionally, exploration and production for oil and natural gas in the Gulf of Mexico supports hundreds of thousands of jobs and is a key factor in U.S. technological leadership in the global energy economy.

Q: Why should Americans, especially those living along the Gulf Coast, trust the safety of deepwater drilling?

A: Offshore oil and natural gas development has been safely conducted for more than 60 years. Within that time, more than 42,000 wells have been drilled, including more than 2,000 deepwater wells, or wells drilled in water depths of 1,000 feet or more.

The Deepwater Horizon accident is unprecedented – and so is the industry's response. Companies from across the industry are working around the clock contain the spill and figure out what happened so it never happens again. America's oil and natural gas industry remains committed to developing the technologies, standards and best practices needed to help ensure that workplace safety and environmental stewardship are at the forefront of the offshore development process.

Exploration and Production Technologies

Q: How does the industry determine the presence of oil and natural gas?

A: A critical first step in oil and natural gas production is the drilling of exploratory wells to determine the

presence of oil and natural gas in the subsurface. The only way to know if oil and natural gas are present is by drilling. Advances in technology have enabled us to pinpoint more accurately where to drill exploratory wells.

Q: What is the industry's safety record on offshore drilling?

A: America's oil and natural gas industry has had a strong safety record of offshore drilling operations—including exploratory wells—for the last 60 years. Within that 60-year period, America's oil and natural gas industry has produced more than 16.3 billion barrels of oil in the Gulf of Mexico, with just 0.00123 percent of that oil lost to spills.

Q: Why are exploratory wells drilled before production wells?

A: Drilling exploratory wells gives the operator the data needed to develop a field more quickly if it is determined the field is economically viable.

Exploratory wells also provide important information to help engineers understand the area they are drilling and how to improve drilling technologies in the future. If an exploratory well is successful in finding oil or natural gas, it is often closed up so it can be transitioned to a production well. It is cased and cemented using various plugs and fluids to keep the oil or natural gas safe in the ground until it can be produced.

Q: What other advantages does an exploratory well provide?

A: The increased data gathering, surveying, and monitoring done as exploratory wells are drilled result in these wells typically taking longer to drill than other types of wells, such as delineation or development wells.

If an exploratory well is determined to have successfully discovered an oil or natural gas field, a secondary well, or delineation well, is drilled to determine the size and characteristics of the reservoir.

If the decision is made to develop an oil and natural gas field, development wells, which are drilled to actually produce oil or natural gas, have the benefit of the data from the exploratory well. This data allows optimization of the development well designs which generally results in less drilling time.

Q: Does production begin immediately once oil and natural gas is discovered?

A: No. In some cases, after a discovery of oil and natural gas is made, exploratory, delineation and/or development wells may be capped before they are fully converted to a production mode. Generally, the hydrocarbon section of the well will be cased and cemented. Then, various plugs and weighted fluid are inserted as additional barriers to prevent the well from flowing. This process may include any or all of the following options:

1. An exploratory or development well might be filled with drilling mud to control the well, with a cement plug set and tested in the wellbore.
2. Additional cement plugs and/or mechanical plugs may be set in the wellbore. This is especially true if the well does not have mud with sufficient weight to kill the well left in the wellbore.
3. In nearly all cases an actual mechanical cap is put on the top of the well to serve as an additional sealing mechanism.

The wells are left in the temporarily abandoned condition until they are completed for production or until additional testing is done—although all tests and data gathering can be completed before temporary abandonment. The wells are re-opened and completed for production when the platform and pipelines are complete.