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In Deep Water

Weak Governance and the Gulf Oil Spill, a 30-Year Timeline

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The Institutions and Governance Program at the World Resource Institute works with partners around the world to strengthen environmental decision-making processes, so that development policies are socially equitable and sustainable.

SUMMARY

The Deepwater Horizon Blowout last April in the Gulf of Mexico is the largest oil spill in U.S. history. It will be many years before we know the full extent of the disaster in terms of its impact on the environment and the economy.

Regardless of the final damage tally, the system put in place to avoid these types of disasters has proven inadequate. This is evident from the investigations and recommendations of the National Oil Spill Commission, established by President Obama, whose report was published on January 11, 2011. It was also implicit in the immediate response by the federal government to restructure and rename the agency responsible for regulating the oil and gas industry – formerly the Minerals Management Service, now the Bureau of Ocean Energy Management, Regulation and Enforcement.

How did we reach this point? As a new timeline of events from WRI shows, the governance problems that allowed the spill to happen began long before the blowout, and long before the Deepwater Horizon well was authorized.

A THEMATIC TIMELINE

The World Resources Institute (WRI) has conducted a wide-ranging review of the decisions, policies, participants and events that formed the backdrop to the April 2010 oil spill in the Gulf. This timeline is intended to serve as a resource and reference tool for policymakers, academics and journalists interested in a larger accounting of the oil drilling governance and regulatory system, going back to 1978.

The research draws from, and references, a broad range of primary sources including congressional testimony, federal agency and commission reports, documents released through Freedom of Information Act requests, and secondary news sources.

Box 1 | **WRI's Related Work**

WRI has worked for over 20 years at the intersection of natural resource management policy and good governance. Published research on the policies and regulations dealing with extractive industries includes guidelines for corporate engagement with communities, lessons learned from natural gas revenue management in Peru, and an ongoing review of laws and procedures for oil production in Uganda.

Key recurring governance failures highlighted over the 30-year timeline include:

- Efforts by government agencies to keep pace with the risks associated with new drilling technologies were undermined as new guidelines were not adopted or enforced.
- Lack of transparency and accountability over the collection and expenditure of oil revenues led to mismanagement of royalty fees owed to the American people.
- A revolving door culture between the public and private sector coincided with the failure of the U.S. Attorney's Office to prosecute ethical breaches.

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KEY POLICY ISSUES

The timeline is accompanied by thematic icons to highlight specific streams of influence and decision-making areas that contributed to the complex system failure (see Box 2).

Box 2 | **Policy Themes**

Permitting: Highlights policies and decisions regarding the release of permits for deepwater drilling, especially in regard to Environmental Impact Assessments and compliance with the National Environmental Policy Act.

Policymaking: Examines policy development for deepwater drilling and management of publicly-owned natural resources.

Technical Standards: Points to technical recommendations and the results of enforced versus voluntary implementation of best available technologies as they relate to cost-benefit tradeoffs.

Personnel Management: Examines agency culture and "revolving door" occurrences as they affected policy making and permitting decisions.

Revenue management: Tracks the development of royalty payments and royalty in-kind payments as well as the system in place to ensure that royalty payments are accurately calculated and collected.

Operational Monitoring: Tracks adherence to processes and standards for project and facility inspections as well as inspector qualifications.

Major Spills and Events: Highlights significant events dealing with or responding to oil spills as well as policies addressing safety for drilling operations.

MOVING FORWARD

This timeline seeks to shed light on the circumstances, policies and decisions that helped enable America's worst oil spill. It does not provide recommendations, but rather highlights key governance issues that need to be addressed if the U.S. is to avoid another such disaster.

The National Oil Spill Commission Report, released early January 2011, clearly states the extent of governance reform required:

> "*To assure human safety and environmental protection, regulatory oversight of leasing, energy exploration, and production require reforms even beyond those significant reforms already initiated since the Deepwater Horizon disaster. Fundamental reform will be needed in both the structure of those in charge of regulatory oversight and their internal decision-making process to ensure their political autonomy, technical expertise, and their full consideration of environmental protection concerns.*"

The report goes on to make detailed recommendations ranging from technical standards to auditing and permitting requirements. These recommendations will take time and resources to integrate and as the new 112th Congress settles into office proposed budget cuts and calls for regulatory reform may pose a challenge. It is therefore critical that non-governmental organizations play an active role in ensuring that environmental resources are managed safely and fairly and that the lessons of the last 30 years regarding U.S. deepwater oil extraction are learned and acted upon.

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Burning oil on the surface of the Gulf of Mexico (James Davidson, June 17, 2010)

1978: ***Congress passed amendments to the Outer Continental Shelf Lands Act, charging the Secretary of the Interior with overseeing the "expeditious and orderly" development of offshore oil reserves, according to a new tiered management structure.*** The 1978 amendments established a new management framework for Outer Continental Shelf (OCS) production. Every five years, the Department of the Interior (DOI) must develop a comprehensive, nationwide oil and gas development plan. After Congressional approval of the five-year plan, DOI organizes and holds lease sales, in which drilling rights for a given area are auctioned off to the highest bidder. Before drilling can begin, DOI must approve lessees' exploration and development plans within 30 days of submittal. While the Outer Continental Shelf Lands Act does direct the Secretary to consider "the potential impact of oil and gas exploration on other resource values of the Outer Continental Shelf and the marine, coastal, and human environment," the law provides little specific guidance about how to incorporate environmental concerns into the leasing and permitting processes. It also lacks concrete guidelines for operational standards, drilling practices, and safety assurance. The Outer Continental Shelf Lands Act states that the Secretary *may* cancel a lease if it "would probably cause serious harm;" DOI *must* approve an Exploration Plan unless it is clear that the project would damage life, property, national security, or the environment.

1978: ***The White House Council on Environmental Quality issued regulations regarding federal agencies' mandatory implementation of the National Environmental Policy Act of 1969 (NEPA).*** Under NEPA, agencies must carefully and systematically consider the potential environmental impacts of any proposed agency action. The Council on Environmental Quality directed agencies to develop criteria and processes for classifying agency actions based on the level of NEPA analysis required: Environmental Impact Statement (EIS), Environmental Assessment (EA), or Categorical Exclusion. The Council on Environmental Quality also introduced the concept of 'tiering' NEPA analyses, wherein related assessments build off of one another – from broad program level to specific project level – incorporating information from previous studies by reference. If, in preparing an EIS, an agency were to find that crucial information about an action's risks was missing or unknown, the regulations required the inclusion of a worst-case scenario analysis. The worst-case analysis was included as an "action-forcing" provision, requiring agencies to acknowledge uncertainty and consider prevention and mitigation methods to avoid a worst-case outcome.

1982: ***January 19, Minerals Management Service was created amid mounting concerns that revenue collection was being mismanaged by the U.S. Geological Survey.*** The Linowes Commission, tasked with investigating a growing trend of royalty underpayment and revenue mismanagement, found that "the oil and gas industry is not paying the royalties it rightly owes;" due to a lack of oversight, "the industry is essentially on an honor system." The commission cited widespread failures by the U.S. Geological Survey to verify industry-reported data, conduct systematic

audits, and assess penalties for underpayment. All of this, they concluded, was traceable to the lack of clear management structure and a trained, expert staff focused solely on revenue management at the U.S. Geological Survey. In response, Secretary James G. Watt created the Minerals Management Service (MMS), making it responsible not only for revenue management, but for regulating the industry as well. Faced with a lack of funding and experienced staff, the new agency often turned to industry for guidance in developing standards and regulations.

1983: *Congress passed the Federal Oil and Gas Management Act of 1982 to strengthen the "archaic and inadequate" systems used to manage royalty collections.* The law required the Secretary of the Interior to establish a comprehensive system to ensure that royalties were correctly assessed and collected. It also required DOI to perform regular audits of industry-reported data, and to conduct physical inspections of high-production facilities and those with a history of non-compliance. To ensure proper implementation of this system, the act also directed DOI to improve staff training and management oversight.

1985: *The Council on Environmental Quality approved MMS's departmental manual, which established the agency's policy for NEPA implementation and issuing Categorical Exclusions.* According to MMS, if an action was "common" or if impacts were "expected to be negligible to non-existent[1] based upon general information gathered during past environmental analyses," the agency would exempt it from further NEPA analysis by granting a Categorical Exclusion. For these actions, MMS would instead conduct a Categorical Exclusion Review. A Categorical Exclusion Review, which takes a few days to weeks to prepare[2] (compared to several months to a year for an EIS) looks at certain program-specific elements to ensure that no Extraordinary Circumstances exist and that "the drilling operation can remain Categorically Excluded[3]."

1986: *The Council on Environmental Quality revoked its 1978 requirement that agencies include worst-case analyses in EISs for actions with unknown or questionable risks.* A central task of any EIS is to assess the potential for significant adverse impacts; to do so, agencies summarize existing scientific evidence relevant to the proposed action. Often, however, important data is inconclusive or unavailable. To address this, the 1978 rule required agencies to "weigh the need for the action against the risk and severity of possible adverse impacts were the action to proceed in the face of uncertainty" by providing both a detailed description the possible worst-case consequences and an estimate of the probability of a worst-case outcome. The 1986 amendments, however, cancelled both of these requirements. After outlining existing scientific evidence, the Council on Environmental Quality said agencies need only "disclose the fact of incomplete or unavailable information;" formal consideration of the significance and degree of this uncertainty was no longer required.

Clean-up of Exxon Valdez Oil Spill on Smith Island off Valdez, Alaska (Jim Brickett, 1989)

1989: ***March 24, the Exxon Valdez oil tanker struck a reef off the coast of Alaska, spilling between 11 and 30 million gallons of crude oil into Prince William Sound.*** According to the National Transportation Safety Board, the collision was attributable to misjudgments made by fatigued, overworked and possibly intoxicated crew members. Other investigations also suggested that the ship's radar system was broken, but Exxon management failed to make the necessary repairs before the spill. The oil spill contaminated more than 1200 miles of Alaskan coastline, causing major environmental impacts that continue to threaten the area's fragile ecosystem.

1990: ***President George H.W. Bush expanded congressional moratoria on offshore drilling.*** President Bush, who called for the protection of offshore waters "until technology moves forward" during his 1988 presidential campaign, issued a presidential directive ordering the Department of the Interior not to grant any offshore oil leases or conduct any preleasing activity in places other than the Western and Central Gulf of Mexico and parts of Alaska until 2000. This action helped to protect east and west coast waters, but it also served to concentrate exploration projects in the Gulf of Mexico, where 99 percent of U.S. offshore drilling is conducted today**.**

1990: ***Following the Exxon Valdez oil spill, Congress unanimously passed the Oil Pollution Act of 1990.*** The act required oil companies to cover all spill-cleanup costs, but capped their liability for damages (such as lost wages and property damage) at $75 million. Affected parties can only collect damages above the $75 million cap if it can be proven that the company violated federal regulations or was willfully negligent leading up to the spill. The new law also decreed that all offshore drilling operators should "prepare and submit…a plan for responding, to the maximum extent practicable, to a worst case discharge." Over the next two decades, however, MMS regulations diluted this requirement, limiting consideration to a worst-case discharge of only 30 days in duration and failing to establish criteria to assess whether a company's Oil Spill Response Plan is sufficient to prevent major environmental damage.

1993: ***October, MMS OCS Policy Committee's Subcommittee on OCS Legislation issued an influential report calling for a major shift in federal offshore drilling policy toward increased oil and gas exploration.*** In the report, the committee urged the Clinton Administration to lift the moratoria, which it described as "symptoms of the federal government's past hierarchical approach to OCS decision making," and called for extensive royalty relief programs to incentivize the industry. The committee – chaired by Paul L. Kelley, an oil company executive – advocated for less regulation and oversight in general, insisting that "environmental sciences review panels should not be established because they would add an unnecessary layer of review." The report drew significant attention in Washington, where deregulation and expanded drilling were steadily gaining support.

1994: ***June 30, MMS adopted a voluntary "safety systems management model" developed by the American Petroleum Institute.*** MMS originally proposed that its version of the model, known as SEMP (Safety and Environmental Management Program), be made mandatory, but reversed its position after consultation with the American Petroleum Institute. According to MMS, the new system reflected a shift within the agency toward "placing more responsibility for safety and environmental protection on the operators and less reliance on prescriptive government rules".

"The new [SEMP] system reflected a shift within the agency toward 'placing more responsibility for safety and environmental protection on the operators and less reliance on prescriptive government rules."

1995: ***Congress passed the Deep Water Royalty Relief Act, which granted a royalty "holiday" to oil and gas companies drilling in deep waters for leases sold between 1996 and 2000.*** According to the Clinton Administration, this was done to create additional incentives for expanded Gulf development. Under the Act, lessees would pay no royalties for the oil extracted from public lands unless they reached a certain "price trigger" specified under the terms of their lease. As a 2007 DOI Office of the Inspector General (OIG) investigation would later reveal, MMS employees failed to include the price triggers in many leases written in the late 1990s, costing the American people billions in lost revenue. Louisiana Senator J. Bennett Johnston, the author of the bill, retired from Congress in 1997 and is now a lobbyist for the American Petroleum Institute.

1995: ***MMS began a pilot program to test an industry-backed proposal to allow lessees to pay royalties in oil extracted from the lease, rather than in cash.*** Industry representatives, opposed to a proposal by MMS to tie royalty assessment to market value, urged the agency to instead begin allowing energy companies to pay what they owed in the form of oil or gas ("in kind"). MMS Director Cynthia Quarterman later told Congress that the pilot projects were MMS's way of "testing the concept of removing itself from the complex practice of determining the appropriate value of production and auditing whether companies have paid royalties based on an appropriate value." As the pilot programs expanded over the next five years to become the royalty-in-kind (RIK) program, MMS stopped conducting audits of RIK projects, based on the assumption that because the agency itself would be selling the oil, it would not need to depend on producers to accurately report sales. As a 2008 OIG investigation would later reveal, industry preference for the RIK program was at least partially due to their exemption from audit under the system.

1996: ***August 16, President Clinton signed into law the Federal Oil and Gas Royalty Simplification and Fairness Act of 1996.*** The law, strongly supported by industry, aimed to simplify royalty collections by cutting down on paper work and reducing the accounting requirements for oil and gas producers. MMS was charged with developing regulations to implement the law's stipulations. To do so, MMS would first have to settle on a consistent mineral valuation method. MMS, Congress, and industry clashed for years over valuation, with industry opposed to applying fair market value principles to oil and gas royalty collections.

1997: ***July 31, MMS Director Cynthia Quarterman testified before Congress that she had doubts about whether the RIK program could earn the federal government as much as would be owed under the traditional royalty-in-value system.*** Quarterman explained that, during the 1995 pilot study, "royalties were some 9 cents per MMBtu less than would have been realized under the invalue system. Extrapolated to all Gulf of Mexico Federal leases, this loss would have been approximately $82 million annually." Under pressure from Congress and industry to move forward with RIK, however, MMS continued to expand and formalize the program.

1998: ***MMS Director Cynthia Quarterman twice went before Congress to speak out against the proposed Royalty Enhancement Act of 1998 (H.R. 3334) – legislation that would require MMS to collect all royalties in kind.*** Quarterman argued that H.R. 3334 was "weighted heavily in favor of the oil and gas industry;" essentially, it would strip the U.S. of rights to collect royalties for publicly owned resources while relieving lessees of their legal and financial obligations to the American taxpayer. "Our preliminary analysis suggests that the revenue loss would be significant and on the order of hundreds of millions of dollars at a minimum," she said, adding that to push forward with the "unproven and risky" RIK program would be "a gambler's folly with the taxpayers money." On her final appearance, Quarterman urged Congress to gather "independent opinions" when considering legislation, rather than consulting solely with "lobbyists or lawyers." H.R. 3334 died in committee three months later, Quarterman resigned from MMS in December, 1998, and MMS continued to expand the RIK program over the next decade.

"[MMS] Our preliminary analysis suggests that the revenue loss would be significant and on the order of hundreds of millions of dollars at a minimum."

2000: ***March 3, MMS issued a Safety Alert urging offshore lease holders to install a backup mechanism for activating a rig's blowout preventer (BOP) in the event of a blowout.*** As the last line of defense for maintaining well control and preventing blowouts, BOPs are essential to safe drilling operations. Most BOPs involve several different types of opposing steel 'rams' which, when activated, push together to create a seal over the wellhead, keeping hydrocarbons from escaping. The BOP can be activated via a control panel on the rig, but if crewmembers cannot reach the switch, or if it fails, a backup activation system could be the last chance to avoid a major blowout. In the Safety Alert, MMS stressed that a secondary activation system was an "essential component" of any rig's emergency-response system. It did not, however, specify which type of backup system should be used, and left it up to operators to decide whether or not to comply. Given the high cost of the most commonly used backup mechanisms – remote-control (or 'acoustic') switches that enable crewmembers to activate the BOP even after an evacuation – many companies chose not to act.

2000: ***April, a confidential risk assessment of the Deepwater Horizon's BOP warned Transocean that 260 possible failure modes could keep the entire blowout prevention system from functioning.*** In particular, the assessment focused on the decision to outfit Deepwater

Horizon's BOP with a single blind shear ram. A blind shear ram is the last line of defense against a spill; its pincher-like blades are designed to cut through well pipe and seal a blown-out well. Subsea BOPs rely on hydraulic systems to supply the tremendous amount of pressure necessary to force a blind shear ram's blades closed. The risk assessment, commissioned by the manufacturer of Deepwater Horizon's BOP, listed a hydraulic leak as just one of the many 'single-point failures' that could render the BOP useless. The report warned that "with only one blind shear ram capable of sealing the well in, it is extremely difficult to remove all the single failure points from the control system." The five-story Cameron BOP, as built, did have the capacity to accommodate two blind shear rams. A backup shear ram was not required by MMS, however, and neither Transocean nor BP installed a second on the Deepwater Horizon.

A worker cleans up oily waste on Elmer's Island, west of Grand Isle, Lousiana, U.S. Coast Guard Atlantic Area, (Petty Officer 3rd Class Patrick Kelley, May 21, 2010)

2000: ***May, MMS released its Gulf of Mexico Deepwater Operations and Activities Environmental Assessment (DeepwaterEA), examining the potential impacts of deepwater drilling in the OCS.*** Although it called a large spill a "very low probability" event, the EA cautioned that "deepwater operations have the potential to result in oil spills on the OCS that are greatly larger than those previously analyzed." It also pointed out the difficulty of containing a blowout in deepwater, noting that "[w]ater depths may complicate well control operations… Of particular concern is the ability to stop a blowout once it has begun." Digging a relief well to stop a deepwater spill could take up to 120 days, and the environmental impacts and fate of the oil that would flow freely into the open ocean were not fully understood. Based on these findings, the Deepwater EA recommended that MMS undertake extensive additional studies into the consequences of a deepwater oil spill; in the official decision document, however, MMS concluded that "none of the suggested studies, research, or information synthesis represents a critical information need requiring suspension of decisions on specific deepwater activities." The agency said it would not prepare a more in-depth EIS because "most deepwater operations and activities are substantially the same as those associated with conventional operations and activities on the continental shelf," for which "existing NEPA documents…and established mitigation procedures" remained "fully sufficient" to address. Although several studies on the consequences of a deepwater spill were released in response to the Deepwater EA's call for deeper analysis, none of the future NEPA documents related to BP's Macondo site referenced these reports.

2000: ***May 9, In a site-specific EA prepared for a Shell Oil Company project less than 140 miles southwest of the future Macondo well site, MMS discussed the potential for a blowout very similar to the one that would later hit the Deepwater Horizon.*** While the report repeated claims that, based on historical data, the potential for a large-scale oil spill was low, it conceded that "[s]ince the historical MMS database reflects drilling in the shallower shelf waters and because of differences in deepwater drilling operations, it cannot yet be determined… whether this same trend will continue in the deepwater areas of the OCS." Furthermore, because "there is less containment capability subsea," the report warned that "it is more likely for a blowout in deep water to occur at the seafloor." The EA went on to say that the environmental impacts of a high-volume deepwater spill were unknown, as was the fate of the spilled oil – but acknowledged the potential for a huge, subsea plume to form, keeping the oil from reaching the surface (where it could be more easily captured). The EA also included the warning that "[r]egaining well control in deep water may be a problem since it could require the operator to cap and control well flow at the seabed in great water depths… and could require simultaneous fire-fighting efforts at the surface." Stopping such a subsea blowout would require digging a relief well, which could take 30-90 days. Despite these predictions, MMS granted the project a Finding of No Significant Impact, allowing the project to commence without the preparation of an EIS.

Gulf oil spill bird treatment in Louisiana provided by International Bird Rescue Research Center (Brian Epstein, 2010)

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2000: ***June 21, MMS published a notice of its plan to revise and clarify its existing regulations for drilling operations on the OCS, and invited comments from interested parties.*** While MMS stressed its intention to remove "overly prescriptive requirements," it also expressed concern that existing policy allowing operators to "use their judgment" in designing cementing and casing programs had led to "poor cementing practice" and a growing number of sustained well-pressure problems. MMS solicited comments on improving cementing practices, as well as on a provision that would require all OCS rigs to be equipped with at least one set of blind shear rams. Comments from the Offshore Operators Committee, developed in concert with the American Petroleum Institute and the International Association of Drilling Contractors, told MMS that its members "support the MMS's efforts to review and define guidance regarding best cementing practices, but will oppose the inclusion of prescriptive cementing practice requirements, over the current performance based requirements." The Offshore Operators Committee also "strongly oppose[d]" requiring blind shear rams for all BOPs.

2001: ***In an effort to meet annual performance goals, MMS began to move from conducting traditional revenue audits toward an easier and quicker "compliance review" process.*** Compared to traditional audits, compliance reviews are a relatively quick, "more limited reasonableness check of the accuracy and completeness of a company's self-reported data, and do not include a systematic examination of underlying source documentation." The transition to the compliance review process meant that employees without college-level accounting education could replace higher-paid, professional auditors. Despite protests by both the GAO and the DOI OIG that this system constituted little more than an honor system, the compliance review process quickly became the standard at MMS. According to one former MMS employee, auditors were told "not to bother the oil companies" by requesting documents, and to "stay away" from the RIK program.

2001: ***January, President George W. Bush named Denver oil and gas lawyer Gale Norton Secretary of the Interior.*** Norton worked as a lawyer during the Reagan Administration under Secretary of the Interior, James G. Watt, and was known to have a pro-energy industry reputation. Norton appointed Rejane "Johnnie" Burton to head MMS the following year; Burton's appointment was "commended" by the Independent Petroleum Association of America and other industry groups who appreciated her commitment to advancing the RIK program.

2001: ***January 29, during his second week in office, President George W. Bush announced the creation of the National Energy Policy Development Group (more commonly known as the Cheney Energy Task Force), a group of senior federal officials charged with developing recommendations for a new national energy policy.*** As documents would later indicate, energy industry representatives were granted a high level of access and influence to task

force deliberations. While the Bush Administration initially refused to reveal information on task force consultations, lawsuits brought by GAO and others eventually revealed that officials from Exxon Mobil, Conoco, Shell Oil, Chevron, and BP America met with Cheney's aides at the White House to contribute their own detailed policy recommendations. The task force also met with industry trade groups (e.g. American Petroleum Institute, National Mining Association) and large interstate utilities (e.g. Constellation Energy Group, Duke Energy).

2001. ***May 17, the Cheney Energy Task Force released its 170-page National Energy Policy Report.*** The final report concluded that excessive federal regulation was interfering with energy development in the OCS, where drilling operations had an "impressive environmental record." It included many of the policy positions championed by oil and gas companies and trade groups, including the American Petroleum Institute's call to reduce the drilling permit backlog and make it easier to acquire oil and gas leases. The Task Force, led by Executive Director Andrew D. Lundquist (former aide to Republican Senator Ted Stevens and future energy company lobbyist), also called on Secretary of the Interior Gale Norton to "consider economic incentives" and royalty relief programs to encourage domestic oil and gas production. Several of the report's key provisions were later included in President Bush's budgets and in the Energy Policy Act of 2005.

2001. ***May 18, in response to recommendations in the National Energy Policy Report, President George W. Bush issued Executive Order 13212, "Actions to Expedite Energy-Related Projects."*** The Executive Order established a new inter-agency task force to monitor agencies' efforts to streamline regulatory processes and "accelerate the completion of energy-related projects." As later revealed by investigations into the Cheney Energy Task Force, wording in the Executive Order was nearly identical to language in policy recommendations submitted to the Department of Energy in 2001 by the American Gas Association.

2001. ***July 24, an MMS-commissioned study concluded that, due to a high rate of failure, "all subsea BOP stacks used for deepwater drilling should be equipped with two blind shear rams" to ensure that the BOP could effectively seal a blown out well.*** The study, performed by SINTEF Industrial Management, examined data from 83 deepwater wells drilled by 26 different rigs on the Gulf OCS in 1997 and 1998. According to daily drilling reports, these wells experienced 48 well kicks and 117 BOP failures during that period. Because BOPs can fail "as a result of wear and tear during the kick-killing operations," rigs need a backup blind shear ram to help prevent serious spills. MMS, however, chose not to act. Even a single blind shear ram was not formally required until 2003, and two thirds of the rigs currently operating in the gulf have yet to install a second.

2001. ***October 25, MMS announced the launch of its new Grid EA system to address the complexities of deepwater drilling on the OCS.*** In an effort to simplify the permitting process for deepwater drilling projects, the new system divided the western and central Gulf into 18 "biologically similar" grid areas of millions of acres each. The grid areas were categorized by ocean depth, based on the assumption "that biological communities within a particular water depth zone are similar." The first drilling project in a given grid area would be required to conduct an EA that was "both site-specific and programmatic in nature," which would become known as the "Grid EA." Subsequent drilling plans in the same grid would be able to "tier" off the Grid EA rather than conducting a new, project-specific EA. As MMS explained in a 2003 deepwater NEPA guidance document, "once a Grid EA has been completed in a grid area, there is a very high likelihood that the NEPA review for each subsequent project will be a categorical exclusion review." Mississippi Canyon Block 252, the site of BP's Macondo well, was located in Grid 16; the Grid 16 EA, for BP's Thunder Horse project, would be completed in 2002.

"Once a Grid EA has been completed in a grid area, there is a very high likelihood that the NEPA review for each subsequent project will be a categorical exclusion review."

2001. ***September, BP leased the Deepwater Horizon rig from Transocean, agreeing to pay rental fees "in the neighborhood of $500,000 a day."*** Deepwater Horizon was a fifth-generation, ultra-deepwater, dynamically positioned, column-stabilized drilling rig that, according to Transocean, could operate in water depths of up to 10,000 feet. Construction of the rig was begun in 1998 and completed in 2001 by Hyundai Heavy Industries Shipyard in South Korea.

2002. ***December, MMS consultant West Engineering released a report detailing major inadequacies in BOP maintenance and testing by deepwater rig operators.***

West investigators found that, of the 14 newly-built rigs they surveyed, half had never tested their blind shear rams in deepwater conditions. Of the seven that had been successfully tested, only three were able to successfully shear pipe in deepwater tests – suggesting that, even when everything works properly, blind shear rams can sometimes fail to shear pipe. West stressed that BOP testing must be conducted under the specific temperature and pressure conditions likely to be encountered during drilling operations; freezing temperatures and extreme pressure in deepwater, combined with new, stronger well piping, greatly increase the potential for blind shear ram failure. Despite the importance of this system, West admitted it was "unaware of any regulatory requirements that state the obvious: that the BOP must be capable of shearing pipe planned for use in the current drilling program." In the absence of strong regulations, West prescribed that "education of those involved should result in higher safety of drilling operations."

2002: ***December, MMS released its Programmatic Environmental Assessment for Grid 16 (Grid 16 EA), which examined the potential impacts of BP's Thunder Horse Project (Mississippi Canyon Block 777).*** In accordance with MMS's grid system, the Grid 16 EA was designed to be both project-specific and programmatic – it would serve as a baseline analysis for all future projects in the 4.5 million acre grid area. The EA evaluated the project's potential impacts on the area's sensitive coastal ecosystems, including impacts from an accidental spill. While MMS allowed that "[s]ome of the subsurface oil may disperse within the water column," it cited a 2001 Norwegian study to argue that most oil from a deepwater spill would quickly rise to the surface and form a slick. Natural forces would then disperse the slick, "remove the oil from the water column, or dilute the constituents to background levels;" therefore, any impacts would be temporary and non-catastrophic. In an oil spill-potential analysis, included as an appendix, MMS calculated that an accidental blowout of the proposed well could have a worst-case flow rate of 141,000 barrels a day, but concluded that any such spill was highly unlikely to occur because of "comprehensive pollution prevention requirements that include numerous redundant levels of safety devices, as well as inspection and testing requirements to confirm that these devices work." Based on this assessment, MMS issued a Finding of No Significant Impact for the project and no EIS was prepared. This designation would be used as part of the basis for extending categorical exclusions to other drilling projects in Grid 16 - including BP's Macondo well at Mississippi Canyon Block 252.

"MMS calculated that an accidental blowout of the proposed well could have a worst-case flow rate of 141,000 barrels a day, but concluded that any such spill was highly unlikely to occur."

2003: ***Lukens Energy Group won a contract from MMS to conduct an assessment RIK pilot project performance.*** Lukens' assessment deemed the pilot projects a success and called for full implementation of RIK by 2004. A 2008 DOI Office of Inspector General (OIG) investigation into ethical violations by RIK staff, however, questioned the independence of Lukens' analysis. RIK Program Director Greg Smith told investigators that he considered Lukens' Vice President Fred Hagemeyer a "trusted advisor" because Hagemeyer had helped to guide the RIK program from its inception, providing "advice and input on how to successfully operate the program" (In 2000, Hagemeyer won an award from the American Petroleum Institute for his work to expand the RIK program). Smith also stated that he had been in contact with Hagemeyer before and during the contracting period, despite regulations barring any such contact between officials and bidding officials. Both Smith and Hagemeyer told the OIG investigators that their communication during this time had nothing to do with MMS's selection process for the $500,000 contract.

2003: ***Reversing the position taken in its 2000 Safety Alert, MMS decided not to require a backup system for remotely activating a rig's BOP in the event of an emergency or evacuation.*** MMS had been considering requiring acoustic (remote-control) trigger switches, which were found to be "the most effective and successful option" in Norway and Brazil, where they have been mandatory for years. This prospect came under fierce opposition by industry groups, who claimed that they were unproven and prohibitively expensive (at $500,000). In a 2003 report commissioned by MMS, West Engineering agreed, saying that "acoustic systems are not recommended because they tend to be very costly" and little data existed as to their utility. West did, however, express concern over the reliability of deadman switches, remotely operated vehicles, and other critical emergency backup systems. MMS did not take any action to address these concerns.

2003-2009: ***The Government Accountability Office (GAO) released a series of five reports detailing problems with the RIK program.*** In 2003, GAO

cautioned that MMS did not have the personnel, technology, or systems in place to effectively monitor and evaluate the RIK program. In 2004, GAO conducted an audit of RIK revenues, finding that "RIK oil sales in the Gulf of Mexico decreased revenues by $7.2 million, for a loss of 5.5 percent on sales of $131 million." Investigators outlined a number of factors contributing to program difficulties: "MMS does not analyze all sales because there is no requirement to do so, staff considers existing information on sales sufficient, few staff are assigned to analyzing sales, and MMS management has a lengthy review process for finalizing sales analyses." Three years later, GAO again reported on RIK, arguing that MMS's continued expansion of the RIK program, despite the fact that it could not accurately account for the program's costs and benefits, had already cost the American public millions of dollars in lost revenue. GAO issued yet another highly critical report in 2008, stating that MMS's reliance on self-reported data supplied by industry, and its replacement of comprehensive audits with more limited compliance reviews, had rendered MMS incapable of accurately assessing or collecting all owed revenue. Finally, GAO's 2009 report entitled "MMS Does Not Provide Reasonable Assurance It Receives Its Share of Gas, Resulting in Millions in Forgone Revenue" detailed the ways in which MMS had yet to address the central problems highlighted in its previous reports.

B

2003: ***February 20, MMS issued a final rulemaking on OCS drilling operations, incorporating comments on proposed regulations published on June 21, 2000.*** In response to industry concerns that the proposed rules were overly prescriptive, MMS agreed to wait for an American Petroleum Institute/International Standards Organization committee to finish drafting its own cementing guidelines before deciding whether to take "further regulatory action". Despite strong opposition from industry groups, MMS did finalize a proposal to require that all BOP's be outfitted with a blind shear ram. Citing warnings by West Engineering that "in deepwater applications…the operating limits of shear rams are often unclear," MMS also added a new rule requiring operators to include in their Applications for Permit to Drill "information that shows the blind-shear rams installed in the BOP stack…are capable of shearing the drill pipe in the hole under maximum anticipated surface pressures." Investigations into the Deepwater Horizon blowout would later call into question whether this rule was ever enforced. MMS New Orleans District Drilling Engineer Frank Patton testified that he had never heard of this requirement, and had never checked to see if blind shear ram capability data was included in any of the hundreds of Applications for Permit to Drill he approved – including BP's applications to drill the Macondo well.

B

2004: ***September 6, in another study by West Engineering for MMS, investigators concluded that BOPs on newly built rigs might be unable to shear pipe "at their maximum rated water depths," raising concerns about the industry's lack of preparedness to "shear and seal" a blown out well.*** The inability of blind shear rams to cut through thick drill pipe joints is widely known within the industry, but the West analysis highlighted additional blind shear ram vulnerabilities. For example, West found that blind shear rams also struggle to cut through some types of newer, thicker piping, especially under the high pressures of deepwater. West cautioned MMS that "as smaller operators with limited appreciation of the risks venture into ever deeper water, the industry's risk increases. At least some of the rigs currently in operation have not considered critical issues necessary to ensure that their shear rams will shear the drill pipe and seal the well bore."

B

2004: ***October 11, Transocean sent a letter to BP confirming BP's intention to replace a variable bore ram on the Deepwater Horizon's BOP with a 'test ram.'*** Like most, the BOP on the Deepwater Horizon, included several different types of rams – this built-in redundancy was meant to ensure that the BOP could successfully seal a blown out well in high-pressure, deepwater conditions. A variable bore ram is a type of pipe ram, which fits over the drill pipe to block the opening between the well and the pipe, thus sealing off the wellhead. BP's decision to replace one of its pipe rams with a 'test ram' would save BP time and money by allowing them to conduct federally mandated tests while continuing drilling operations, rather than having to pull up the drill pipe and lower special equipment into the well. Transocean warned, however, that it would also "reduce the built in redundancy of the BOP," thereby raising the rig's "risk profile." BP acknowledged these risks by signing on to the letter, but went ahead with the BOP modifications nonetheless. Later, in the course of the investigation into the spill, BP Vice President for drilling and completions Harry Thierens said that he was unaware of the replacement until after the disaster, and that when he did he was "frankly astonished that this could have happened."

2005: ***Congress passed the Energy Policy Act of 2005, giving MMS authority to expand energy-related projects on the Outer Continental Shelf.*** Incorporating recommendations made by Cheney's Energy Task Force, the law contained $2.6 billion in new tax breaks for oil and gas exploration and extended the royalty relief programs begun by the 1995 Deep Water Royalty Relief Act. It also authorized funding for the RIK program - essentially making the program official – and set out terms, conditions, administrative procedures, and program requirements for RIK.

2005: ***Gregory Smith became the new RIK Program Director, headquartered in Lakewood, Colorado.*** As Program Director, Smith managed 65 RIK staff members and served as the program representative to industry. Smith reported directly to Lucy Querques Dennett, the Minerals Revenue Management Associate Director in Washington, DC. Although Minerals Revenue Management Deputy Associate Director Deborah Gibbs-Tschudy was stationed at the Lakewood office, she had "no line or supervisory authority" over Smith or his staff. Both Smith and Dennett would later be found to have committed major ethical and legal transgressions, along with the majority of the RIK program staff. In his investigative report, DOI Investigator General Ed Devaney would later call Gibbs-Tschudy "the one supervisor whose integrity remained intact throughout."

2005: ***Transocean conducted a series of maintenance tests on Deepwater Horizon that revealed a number of problems with the rig's blowout preventer (BOP).*** The BOP control panels were issuing anomalous pressure readings and unexplained alarm signals, and the "hot line" from the rig to the BOP had a major leak. Transocean called in West Engineering to assess the extent of the issue, but did not take the rig out of operation. West conducted an inspection, but ultimately could not complete 72 necessary tests because the BOP was inaccessible, thousands of feet below on the sea floor. Among the tests not completed was one to ensure that the BOP's blind shear ram could successfully shear and seal the well in deepwater. West reported back to Transocean that the BOP was out of its 5-year recertification cycle, and therefore not in compliance with MMS regulations. Recertification would require pulling the rig out of operation for 90 days; instead, Transocean felt it sufficient to monitor the BOP while in operation.

2005: ***February 26, BP's Thunder Horse faces delays due to storm damage. Possible damages due to hurricanes were not properly addressed in the Environmental Assessment for the drilling grid.*** Later that year, Hurricane Dennis nearly toppled the rig, causing major damage and delaying production until 2008. The Grid 16 Environmental Assessment (EA), created for the Thunder Horse project in 2002, had incorrectly assessed the likelihood of any such accident; the EA later served as part of the basis for extending categorical exclusions to other drilling projects on Grid 16, including BP's Exploration Plan for the Macondo well.

> "He [Earl Devaney] worried that this sent a disheartening message to career civil servants: 'simply stated, short of a crime, anything goes at the highest levels of the Interior.' "

2006: ***September 13, DOI Inspector General Earl Devaney testified before the House Subcommittee on Energy and Resources regarding "the institutional culture of managerial irresponsibility and lack of accountability" at MMS.*** Ongoing OIG investigations uncovered major ethical lapses by senior officials, including cover-ups, financial impropriety, serial non-compliance, and coordinated efforts to influence policy decisions, which routinely went unpunished by DOI leadership. Devaney stated that often, in the face of disciplinary action for ethical violations, high-level DOI officials would simply decide to resign, at which point they would be "sent off in the usual fashion, with a party paying tribute to their good service; wishing them well, to spend more time with their family or seek new opportunity in the private sector." He worried that this sent a disheartening message to career civil servants: "simply stated, short of a crime, anything goes at the highest levels of the Interior."

2006: ***In an effort to fast-track a lease sale in the Beaufort Sea, MMS omitted information from its EA that would have required the preparation of a full EIS.*** Research conducted by MMS biologist Jeff Childs found that the Exxon Valdez spill had significant, long-term effects on resident fish populations, and indicated that any similar spill in the Beaufort Sea would be "likely to result in significant adverse effects on local populations requiring three or more generations to recover." MMS Alaska Regional Supervisor Paul Stang told Childs, in a handwritten note, "as you know, a conclusion of significance under NEPA means an EIS and delay in sale 202. That would, as you can imagine, not go over well with HQ and others." Childs' section of the EA was rewritten; the final version of the EA did not mention his findings. Concluding that a "large liquid hydrocarbon spill ... is regarded as too remote and speculative to be considered a reasonably foreseeable impacting event", MMS declared the preparation of a more detailed EIS unnecessary. The Beaufort Sea lease sale went forward as planned in July 2007, fetching $42 million in bids; Shell Oil planned to begin drilling on the lease it won at the sale in summer 2010. Paul Stang left MMS soon after to start his own consulting firm, which served as a principal adviser to Shell Exploration and Development Corporation from 2007-2009.

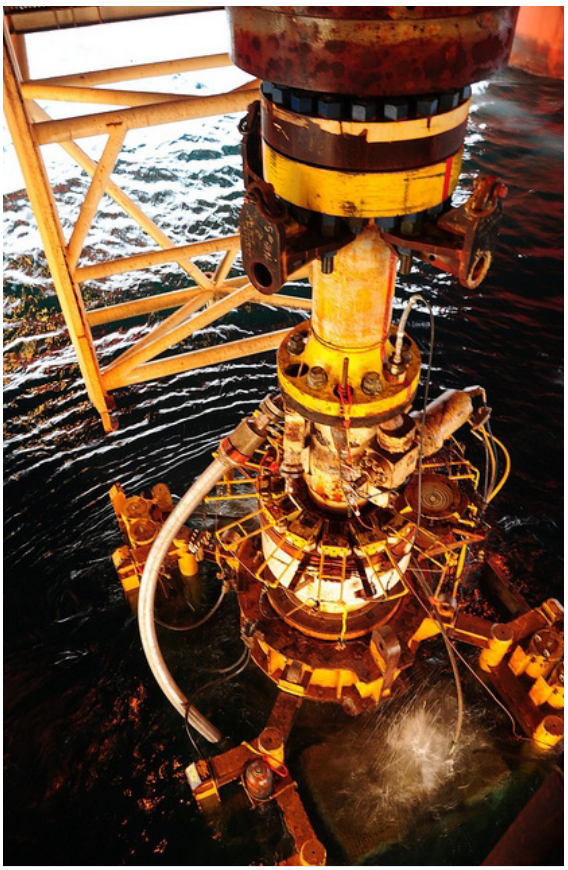
2007: ***January 18, DOI Inspector General Earl Devaney testified before Congress about his office's 2006 analysis of MMS' compliance review process, which found that***

the compliance reviews were not sufficient for detecting data anomalies or assuring accurate royalty assessment. Devaney's office found that MMS agents often did not verify industry-reported data when conducting compliance reviews, and, with program "performance measures tied to dollar figures," often failed to subject smaller companies or leases to review. Devaney called for a return to more traditional audits to ensure that MMS could fulfill its oversight and revenue management functions. The investigation also revealed that, in 1998 and 1999, MMS failed to include price limitations to trigger royalty payouts on many OCS leases, which exempted extractors from paying royalties on a technicality. OIG learned that MMS director Johnnie Burton, who testified in front of Congress that she first learned about the flawed leases in 2006, was actually informed by concerned employees in 2004; when asked why she hadn't then addressed the problem, Burton claimed that she simply hadn't paid much attention to the situation. Devaney called the situation "a jaw-dropping example of bureaucratic bungling" that could ultimately cost the US Government $10 billion in lost revenue.

2007: ***January 23, The Kerr-McGee Corporation (now Anadarko Petroleum) was found guilty by a jury in US District Court of underpaying $7.56 million in royalties and withholding information necessary for the federal government to determine the amount of royalties due.*** The suit was brought by Bobby Maxwell, a former senior auditor for MMS. From 2002 to 2003 Maxwell was repeatedly told by MMS not to pursue royalty underpayments by oil and gas companies. Maxwell persisted, filing a False Claims Act lawsuit against Kerr-McGee. He was fired by MMS within days of filing the suit, but allowed by the Justice Department to continue pursuing the case on behalf of the American people. Despite the jury's decision that the payment was due and Kerr-McGee's acknowledgment that Maxwell's calculations were correct, MMS continued to insist that no additional royalties were due and has still not attempted to collect them. The verdict against Kerr-McGee was overturned by the judge and is in appeals court. The ultimate outcome remains uncertain.

2007: ***April, MMS released its EIS in support of the OCSLA-mandated 5-year plan for OCS oil and gas development (5-year Plan EIS), assessing the potential impacts of expanded lease sales and drilling operations on the OCS from 2007-2012.*** MMS estimated that drilling operations in the Gulf of Mexico over that period, 75 percent of which were planned for deepwater, would yield 4-8 million barrels of oil and result in nine large oil spills (defined as one of 1000 barrels or greater). MMS calculated that the most probable spill from production or transportation would be 1500–4600 barrels (spills from exploration activities were not considered). The 5-year Plan EIS included a limited analysis of the impacts of oil spills and only considered the effects of a 1500 barrel spill. Based on these narrow parameters, MMS concluded that a large oil spill resulting from the 5-year plan would not have significant adverse environmental impacts.

2007: ***April, MMS prepared a Multi-Sale EIS for eleven lease areas in the Gulf Western Planning Area (including Lease Sale 206, which contained Mississippi Canyon block 252).*** The Multi-Sale EIS estimated that the most likely large spill in the area would release 1000-4600 barrels of oil into the Gulf. Like the Grid 16 EA and the 5-year Plan EIS, however, the Multi-Sale EIS did not reference any of the studies conducted in response to the 2000 Deepwater EA's call for more analysis of the potential impacts of a deepwater spill. Instead, MMS cited a 2001 Norwegian study that concluded such a spill would have only minor impacts because most of the oil would quickly weather or disperse. While it called a 1000 barrel spill "a low probability event," MMS also stated that "there is greater than a 99 percent chance that one or more spills ≥10,000 [barrels] will occur in the next 40 years." It did not, however, provide a comprehensive analysis of the impacts of a spill of this size. Although this finding could represent a reasonably foreseeable significant impact, MMS argued that, even if a large spill did occur, the impacts to wildlife and ecosystems would be "sub-lethal" and not catastrophic. The Multi-Sale EIS also briefly discussed the potential for loss of well control events, including blowouts, but argued



Damaged Deepwater Horizon blow out preventer extraction (Deepwater Horizon Response, September 4, 2010)

that well control losses were "rare events and of short duration," which were unlikely to have significant environmental impacts. Based on these analyses, MMS concluded that the lease sales could go ahead.

2007: ***May, in the wake of the RIK corruption scandal, MMS Director Rejane "Johnnie" Burton resigned.*** Representative Darrell Issa (R-CA), ranking member of the House Oversight and Government Reform Subcommittee, hailed her departure as "an opportunity to change a culture and history of failed management for the agency that, on behalf of the American people, collects royalties on oil and other resources. Problems at MMS may have cost American taxpayers billions." Interior Secretary Dirk Kempthorne named Randall Luthi, to succeed Burton as director of MMS.

"...an opportunity to change a culture and history of failed management for the agency that, on behalf of the American people, collects royalties on oil and other resources. Problems at MMS may have cost American taxpayers billions."

2007: ***July, MMS released a study of well blowouts on the OCS from 1992-2006, finding that the incidence of cementing-related blowouts during that period was significantly higher than in previous years.*** The study found that in 18 of the 39 blowouts, well control was lost due to "gas migration" during or after the cementing of the well casing. According to MMS, "[w]ith continued increases in drilling depth come increasingly higher formation pressures that need to be controlled during the drilling process. Improper well control procedures can result in sudden, uncontrolled escape of hydrocarbons... and can also delay drilling options for days or even months." The report did not address specific cementing problems, nor did it offer recommendations for improving cement integrity. Instead, MMS referenced its work with the American Petroleum Institute, ongoing since 2003, to develop new best-practices standards for cementing. As of the blowout at BP's Macondo well, those new standards have yet to be released.

2007: ***October, MMS released its EA for Gulf of Mexico OCS Oil and Gas Lease Sale 206 (Lease Sale 206 EA) - the sale that included the lease for the Macondo Prospect at Mississippi Canyon Block 252.*** According to MMS, the Lease Sale 206 EA "tiers off the Multi-Sale EIS and incorporates much of the material by reference." As such, the Lease Sale 206 EA cited the previous EIS's analysis of impacts from a 1000 barrel spill, but suggested that the environmental impacts "may have been overstated." MMS argued that a spill resulting from Lease Sale 206 would not significantly affect coastal wetlands or birds, and that any impacts to commercial fishing would be "negligible and indistinguishable from variations due to natural causes." MMS issued a Finding of No New Significant Impact based on the previous approval of the Multi-Sale EIS, therefore allowing the Lease Sale to go forward without any further NEPA analysis.

2008: ***March 19, MMS's Lease Sale 206 draws a record $3.7 billion in bids, including $34 million from BP for Mississippi Canyon Block 252 (MC252).*** In the notice announcing the lease sale, MMS specified that of 120 potential environmental mitigation requirements and/or lease stipulations, only one, the Protected Species Stipulation, would be applied to MC252. BP purchased the rights to drill on the Macondo Prospect, along with silent partners Anadarko Petroleum Corporation (25 percent interest) and MOEX Offshore 2007 (10 percent interest).

2008: ***April 1, MMS's Gulf of Mexico OCS Region (GOMR) issued a Notice to Lessees updating similar guidance issued in 2003 and 2006 on the information requirements for OCS Exploration Plans.*** In the Notice to Lessees, MMS advised operators on how to fulfill federal regulations requiring a worst-case spill estimate. According to GOMR, "because estimated blowout flow rates are speculative, you should not ordinarily determine that the worst-case scenario from the proposed activities in your Exploration Plan supersedes the appropriate worst-case scenario from your approved regional OSRP (Oil Spill Response Plan)." If for some reason an operator did estimate a flow rate greater than that which they had said they could effectively respond to in their Oil Spill Response Plan, GOMR cautioned that the plans worst-case scenario estimate would have to be modified before the Exploration Plan would be accepted. The Notice to Lessees also included a provision that effectively exempted most operators in the Gulf region from having to provide a federally-mandated blowout scenario. Unless the proposed operations fell under one of five very specific categories, Gulf operators would no longer have to evaluate the potential for a blowout or offer a detailed plan for responding to an associated oil spill. Because its proposed actions did not trigger any of the five specific conditions, BP did not include a plan for preventing or responding to a blowout in its 2009 Exploration Plan for the Macondo well.

Gulf oil spill bird treatment in Louisiana provided by International Bird Rescue Research Center (Brian Epstein 2010)

2008: ***July 30, Jimmy Mayberry, Special Assistant to the Associate Director of Minerals Revenue Management from 2000 to January 2003, pleaded guilty to violations of conflict-of-interest laws.*** Mayberry admitted to working with former MMS Associate Director Lucy Querques Dennett and former MMS Deputy Associate Director Milton K. Dial to write the requirements and 'fix' the competition for a government contract that he intended to bid on after his retirement. In 2003, his company, Federal Business Solutions, won the contract. Mayberry was sentenced in November 2009 to two years of probation and a $2,500 fine.

2008: ***August 19, DOI Inspector General Earl Devaney released the findings of his office's two-year, $5.3 million investigation into rampant illegal and unethical conduct by RIK program staff at MMS's Lakewood office.*** Between 2002 and 2006, almost one third of program staff engaged in inappropriate behavior with energy industry representatives, ranging from accepting gifts to carrying on sexual relationships. OIG also discovered that RIK Program Director Gregory W. Smith earned $30,000 moonlighting as a consultant for oil companies while employed by MMS, and used his position to steer lucrative contracts to client companies. MMS responded to these findings by removing Smith (accused of drug use, sexual misconduct, and profiteering) from his post and sending him back to Washington, DC to serve as special assistant to Minerals Revenue Management Associate Director Lucy Querques Dennett. Querques Dennett was also found to be implicated in a scheme, together with fellow DOI senior executives Jimmy Mayberry and Milton K. Dial, to fix selection criteria and funnel government contracts to companies in which they had a financial stake. Querques retired in May 2007 and Smith left during the investigation to work at Tenaska Marketing Ventures, an international power development company and energy marketer; the Department of Justice declined to prosecute. Neither Smith nor Dennett were ever charged by the Department of Justice.

2008: ***September 15, Milton K. Dial pleaded guilty to felony violations of "revolving-door" and conflict of interest laws.*** As Deputy Associate Director of Minerals Revenue Management at MMS, Dial helped to develop the evaluation criteria for and then award a lucrative government contract to Jimmy Mayberry's company Federal Business Solutions. He then served as the technical liaison at DOI for the contracted company until his retirement. Six months after retiring from DOI he took a job with Federal Business Solutions. In February 2009, Dial was sentenced to one year of probation and a $2,000 fine.

2008: ***October 1, by not expressly prohibiting funding for drilling in fiscal year 2009, Congress allowed the 26-year old OCS drilling moratoria to expire.*** The moratoria began in 1982 with a prohibition against certain oil and gas exploration and production activities off the

coast of California, and quickly widened to include almost all Atlantic and Pacific OCS areas, with the notable exception of the western and central Gulf of Mexico and parts of Alaska. In 1990, President H.W. Bush issued an Executive Withdrawal directive that strengthened the moratoria by ordering DOI not to grant any offshore oil leases or conduct any preleasing activity in the protected areas. President Clinton extended President Bush's prohibition through 2012, but President George W. Bush prematurely lifted the Executive Withdrawal in 2008.

2008: ***November 14, MMS approved BP's 583-page Gulf Oil Spill Response Plan.*** Federal MMS regulations require operators to prepare an Oil Spill Response Plan describing their ability to respond to a worst-case spill lasting up to 30 days. In its Gulf Oil Spill Response Plan, BP stated that it could handle a spill of 300,000 barrels per day. The plan dedicated a few lines to source control, but BP did not provide a meaningful plan for preventing or stopping a subsea blowout. As the OCS Safety Oversight Board noted, Oil Spill Response Plans are "designed to deal with surface oil cleanup, not containment and control of wells at the spill's source." As such, the Oil Spill Response Plan detailed cleanup equipment and techniques, surface containment methods, and the use of chemical dispersants. BP's Oil Spill Response Plan was written by a subcontractor that also wrote Gulf Oil Spill Response Plans for four other major oil companies at around the same time (ExxonMobil, Chevron, ConocoPhillips, and Shell Oil). As a congressional inquiry would later reveal, much of the text in each of these plans was almost exactly the same, so similar that Rep. Henry Waxman (D-CA) would refer to them as "cookie-cutter" plans, and "paper exercises." In one highly-publicized example, four of the plans – including BP's – listed walruses, sea otters, seals and sea lions as Gulf "wildlife resources" (none of which actually exist in the Gulf). Ultimately, the BP Oil Spill Response Plan, like the other four plans, vastly overstated companies' readiness to effectively respond to a large oil spill.

2009: ***MMS had about 60 inspectors in the Gulf region, roughly the same number that it had stationed there in 1985.*** The number of deepwater oil and gas wells operating in the Gulf of Mexico, however, increased sharply during this period (from 65 to 602), as did the complexity, depth, and distance from shore of the associated deepwater drilling operations. Between 2006 and 2009, these 60 rig inspectors were responsible for investigating "30 worker deaths, 1,298 injuries, 514 fires, and 23 blowouts." A 2010 Outer Continental Shelf Safety Oversight Board report later concluded that this was far too few inspectors to effectively oversee deepwater drilling operations in the Gulf. The report pointed out that the agency had no formal handbook or standardized training program for inspectors; new staff members received only on-the-job training from existing inspectors in the field. No testing or certification process existed for new inspectors, who were often deemed ready to begin conducting solo inspections based solely on approval by their trainer. Continuing education – to help current inspectors stay abreast of ever-more-complex technology – was often not available. According to the report, "inspectors who identify their own training needs often are denied that training," which led these inspectors to have to "rely on industry representatives to explain the technology at a facility."

2009: ***January 29, new Interior Secretary Ken Salazar announced his intention to institute major ethical reform at MMS.*** "The type of ethical transgressions, blatant conflicts of interest, wastes and abuses that we have seen over the past eight years will no longer be tolerated" he said. "The Department of the Interior will raise the bar for ethics, and we will set the standard for reform." Salazar asked the Department of Justice to reopen criminal investigations of RIK employees involved in the recent corruption scandal, and said that his office would reexamine the personnel actions that had been taken against offenders.

"The type of ethical transgressions, blatant conflicts of interest, wastes and abuses that we have seen over the past eight years will no longer be tolerated... The Department of the Interior will raise the bar for ethics, and we will set the standard for reform."

2009: ***February 23, BP submitted its Exploration Plan for the Macondo well (at MC252) to MMS.*** The Exploration Plan outlined BP's plan for the drilling and temporary abandonment of two exploration wells over the prospect. BP estimated that the 'worst-case scenario' spill for the Macondo project would be 162,000 barrels a day, but it did not offer any details to support its pledge to "respond, to the maximum extent practicable, to a worst-case discharge." Instead, BP cited MMS's approval of its Gulf Oil Spill Response Plan as certification that the company could handle a spill of that volume. BP also declined to provide a detailed blowout scenario, stating that "a scenario for a potential blowout of the well…is not required for the operations proposed in this EP [Exploration Plan]." In the Environmental Impact Analysis

section, BP conceded that an accidental spill *could* impact water quality, fisheries, beaches, wetlands, etc., but concluded that any adverse impacts would be limited, temporary, and non-catastrophic. It called an accidental spill "unlikely" and asserted that "in the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of BP's Regional Oil Spill Response Plan which address (*sic*) available equipment and personnel, techniques for containment and recovery and removal of the oil spill." After the Macondo well blowout, when BP submitted its Supplemental Exploration Plan for the drilling of two relief wells, this new Exploration Plan did include a blowout scenario, which stated that a blowout could result in "total evacuation" of the well.

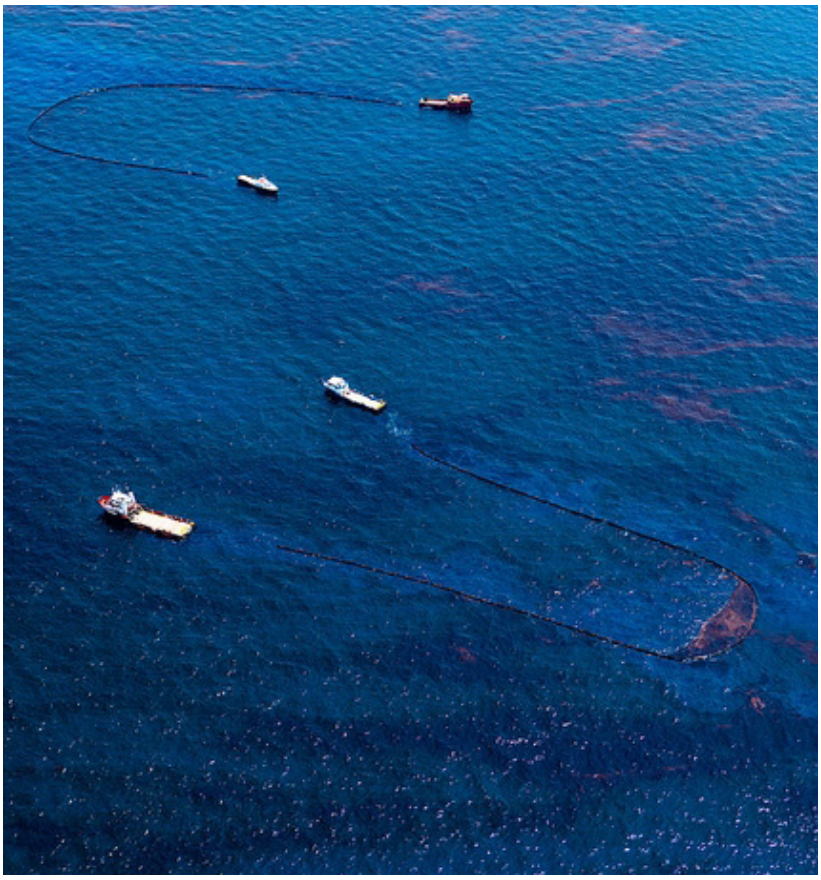
2009: *April, MMS issued a report to Interior Secretary Ken Salazar analyzing the potential risks and benefits of expanding offshore drilling in the United States.* The 219-page report emphasized a study that found most of the oil in marine environments to have come from industrial runoff and natural seepage, not oil production. MMS assured the Obama Administration that "spill prevention, mitigation, and response plans are required and tested frequently to maintain readiness offshore." While MMS did assert that "spill prevention offshore is achieved primarily through required, extensive safety procedures and practices, and engineering requirements such as the use of downhole shut-off valves and blowout prevention devices," the report did not mention the crucial role played by individual BOP components, like the blind shear ram. MMS also made no mention of the numerous studies it had commissioned that raised serious concerns about the vulnerability of deepwater emergency well-control systems. Instead, MMS concluded that President Barack Obama's plan to expand offshore drilling should go ahead.

2009: *April 15, MMS issued a Categorical Exclusion for BP's Exploration Plan for the Macondo Prospect, thus allowing drilling to commence without preparation of a detailed, site-specific EA or EIS.* Although MMS responded to a Freedom of Information Act request from Rep. Nick Rahall (D - WV) that "MMS has not yet officially tracked down[4] the origin of the CE [Categorical Exclusion]" applied to BP's Macondo well, it was likely based on an 1978 DOI exclusion (written before deepwater drilling technology existed) that exempted all exploration and production plans in the western and central Gulf, barring Extraordinary Circumstances. Similarly, 1986 MMS Departmental Manual states that an EA or EIS must be performed for all drilling plans except for those in the Gulf[5], suggesting that Gulf projects were exempted. Based on the assumption that "the impacts from the common operations are expected to be negligible to non-existent based on the general information gathered during past environmental analyses," MMS considered previous tiered NEPA analyses for the area sufficient. MMS instead conducted a Categorical Exclusion Review for the Macondo well, which found that because no "Extraordinary Circumstances" had been identified, "the drilling operation can remain Categorically Excluded."[6]

2009: *April 19, an oil rig owned by Louisiana Land Oil and Gas, drilling not far from where the Deepwater Horizon sank, had to be evacuated following an explosion caused by a gas-bubble surge and the subsequent failure of the BOP.* The 11-month MMS investigation – led by Frank Patton and approved by J David Dykes (who now serves as a co-chair of the joint MMS-Coast Guard panel investigating the BP oil spill) – largely relied on information supplied by company officials. For example, after they were told that they could not examine a critical valve because it was being repaired, the investigators accepted the assertion of the supplying contractor, Halliburton, that the valve had played no role in the accident. Nonetheless, the investigation ultimately concluded that no rules had been broken by Louisiana Land Oil and Gas, and no further action was taken by MMS.

2009: *May 22, MMS approved BP's initial Application for a Permit to Drill the Macondo well.* According to Federal regulations, Applications for Permit to Drill must include detailed technical and programmatic information, including the drilling prognosis, well design criteria, BOP stack configuration, well casing and cementing programs, and testing procedures. BP's initial Application for Permit to Drill was reviewed by MMS drilling engineer Frank Patton, who later testified that he first checked the application for completeness and consistency, and then ran calculations using an MMS designed computer program to ensure that the engineering plan was sound. Patton approved the Application for Permit to Drill even though BP had failed to include required data certifying that the blind shear ram in Deepwater Horizon's BOP could shear the type of drilling pipe to be used at the applicable depths. According to Patton, he had never heard of this requirement and therefore had never checked for its inclusion. In response to Congressional Freedom of Information Act requests, MMS later revealed the agency had never prepared a detailed NEPA analysis for any Application for Permit to Drill[7] - not even a limited Categorical Exclusion Review. Once obtaining Application for Permit to Drill approval, BP was able to begin drilling the well using Transocean's Marianas rig.

2009: ***September, four BP investigators conducted a safety audit of the Deepwater Horizon that revealed 390 maintenance issues, many of which were considered "high priority."*** In nearly 300 cases, the investigators found that rig components – including the BOP – were past their inspection date. Crucial alarms had been disabled, although investigators could not determine why. The safety audit also warned that the rig was understaffed and not all staff had adequate knowledge of drilling and maintenance procedures, and noted that the BOP was not in compliance with recertification requirements. The subsequent repairs would require 3,545 hours of labor and cost BP and Transocean millions in lost production time. Rig mechanics, under pressure from BP and Transocean officials to finish repairs, had addressed some, but not all, of the most critical safety issues by the day of the explosion.



Duel ship skimming surface oil in the Gulf of Mexico (Kris Krug, June 18, 2010)

2009: ***September 8, Chairman of the House Resources Committee Rep. Nick Rahall (D-WV) introduced H.B. 3534, the Consolidated Land, Energy and Aquatic Resources (CLEAR) Act of 2009.*** The CLEAR Act called for the creation of a new agency within DOI to oversee oil and gas revenue collection, stripping MMS of this role. It also called for the elimination of the RIK program, "to help prevent the loss of even more money owed to the American people for the disposition of our public energy resources."

2009: ***September 16, Secretary of the Interior Ken Salazar announced his plan to phase out the RIK program, calling it a "blemish" on the department.*** Despite criticism by the American Petroleum Institute, Salazar maintained that, because RIK had been created by Secretarial Order, he had the authority to end it. Salazar emphasized that phasing out RIK was "only one" of the sweeping changes needed at MMS, and, although the administration was not prepared to fully endorse it, said that Congressman Nick Rahall's proposed CLEAR Act was "absolutely targeted on the right set of issues."

2009: ***September 17, the Department of Justice launched a criminal investigation of former Secretary Gale A. Norton, investigating whether she used her influential position to steer lucrative oil leases to her future employer, Royal Dutch Shell.*** In early 2006, a DOI panel announced its plan to award three oil-shale leases on federal land in Colorado – potentially worth hundreds of billions of dollars – to Shell. Two months later, Norton resigned from DOI. Nine months after that, Norton took a position as general counsel for Shell's exploration and production division in Colorado. The investigation, which grew out of an inquiry initiated by former DOI Investigator General Ed Devaney, is still underway, but formal charges are not expected due to the complex nature of public integrity investigations and the difficulty of proving conflict-of-interest charges.

2009: ***October 7, House Oversight and Government Reform Committee Ranking Member Representative Darrell Issa (R-CA) introduced legislation to strip the Department of the Interior of its responsibilities for MMS and make it an independent agency.*** The bill, HR 3736, would require the Director of MMS to exercise all available powers to ensure accurate royalty collections. It was referred to the House Subcommittee on Energy and Mineral Resources, where it remains under review.

2010: *January 15, West Engineering released an industry-funded study which concluded that MMS should reduce the frequency of mandatory BOP pressure tests from every 14 days to every 35 days.* Conducting pressure tests delayed drilling operations, and West estimated that stretching the testing window to 35 days would save the industry almost $200 million a year in lost productivity. Biweekly tests were unnecessary, West argued, because tests run on the surface, *before* subsea deployment of the BOP, were highly effective for identifying BOP problems. In a 2009 draft version of the report, however, West's own critique of surface test procedure cast doubt on the validity of this argument. According to West, pressure from rig operators or drilling contractors to speed operations had created a mentality of "I don't want to find problems, I want to do the minimum necessary to obtain a good test." This pressure to cut corners meant that BOPs were often tested to only half of their maximum rated operating pressures. "Testing systems and components to the maximum rated pressures on surface should be considered the norm rather than the exception," West concluded, adding that if industry wanted to avoid the mandatory 14-day subsea pressure tests, surface testing guidelines (API RP53) should be strengthened and "adopted as protocol." When the final draft of the document was released, however, these concerns had been omitted.

2010: *February, the Deepwater Horizon began drilling at Macondo Prospect, after the original rig drilling there, the Marianas, was damaged by Hurricane Ida in November 2009.* While en route to the Macondo site, Deepwater Horizon maintenance workers spent 145 hours testing and repairing the rig's BOP. As Transocean officials would later testify, necessary BOP maintenance was generally conducted in between drilling jobs, in order to avoid delaying operations and incurring associated costs. Deepwater Horizon was to finish drilling an exploratory well that would be capped for production activities at a later date.

2010: *March, the GAO issued a report on a pattern of inconsistencies and omissions in MMS's NEPA analyses for offshore oil development; ultimately, GAO found that MMS suffered from a general lack of organization, guidance, technical expertise, and qualified personnel.* Although DOI policy requires it, GAO found that MMS had not issued any official guidance on how to conduct NEPA analyses. This, combined with high staff turnover, meant that employees were conducting crucial environmental impact studies without adequate knowledge, experience, or guidance. Moreover, GAO found that these shortcomings "left unclear MMS's policy on what constitutes a significant environmental impact" - a fundamental consideration under NEPA.

2010: *March, Randall Luthi, the last Director of MMS under President George W. Bush, became president of offshore drilling trade group National Ocean Industries Association 14 months after leaving MMS.* His predecessor at the National Ocean Industries Association, Tom Fry, was also a former Director of MMS. The National Ocean Industries Association's mission: to secure a "favorable regulatory and economic environment for the companies that develop the nation's valuable offshore energy resources."

2010: *March 10, facing a dangerous 'well control situation' at Macondo, BP submitted an Application for Permit to Modify[8] to MMS.* Over the preceding days, drilling operations had encountered major gas 'kicks', abnormally high pressure, and lost well circulation. The rig crew had been unable to extract a stuck drilling pipe, and BP needed MMS approval of its plan to sever the stuck pipe, abandon the existing wellbore, and bypass the high-pressure area. In its application to MMS, BP also requested permission to delay its federally mandated biweekly BOP test until after it had finished plugging the well. MMS official Frank Patton approved the Application for Permit to Modify a few hours after its submittal, but denied the request to delay BOP testing[9] beyond the point when well control could be reestablished. BP officials then emailed Patton's superior, David Trocquet, and asked him to intervene. Trocquet responded that, "[a]fter further consideration, an extension is approved to delay the BOP test until the lower cement plug is set." When BP resumed the BOP tests, they were conducted at a much lower pressure than before (6,500 psi vs. 10,000 psi); industry experts have since questioned whether tests at this pressure could have been of any use for assessing the BOP's ability to effectively prevent a blowout.

2010: *March 30, President Obama announced a plan to lift the 20-year old moratoria on new offshore oil drilling off the southern Atlantic coast and in the eastern Gulf of Mexico.* President Obama said his plan was the product of a year-long study, completed by his administration, which examined the benefits and risks of expanded drilling and considered more than 500,000 public comments on the issue. According to interviews and documents later obtained by the *New York Times*, however, the study failed to question the oil industry's often-echoed assertions about the safety of drilling operations. Well documented problems with crucial drilling technology such as blowout preventers – many of which had been identified in studies commissioned by MMS – "simply did not make it onto the administration's radar."

2010: ***March 31, the office of DOI Acting Inspector General Mary Kendall concluded its investigation into inappropriate behavior by inspectors at the MMS Lake Charles District Office.*** OIG found that many staff members had fraternized with, and accepted gifts from, oil industry representatives. MMS staff indicated that this behavior was common practice – "everybody was doing it." To explain this behavior, the Lake Charles District Manager noted that "obviously, we are all oil industry" – many district staff members had grown up with industry representatives and had worked within the industry prior to joining MMS. What these gifts and favors yielded for oil and gas companies, according to one inspector, was a "better working relationship" with MMS inspectors. The investigation also revealed troubling insights into inspector conduct and protocol directly related to their rig-inspection process. Several witnesses reported that certain inspectors used illegal drugs – including cocaine and crystal methamphetamine, both before conducting inspections and while onboard offshore platforms. Investigators learned that it was relatively common practice for inspectors to allow rig staff to fill out their own inspection forms in pencil prior to an MMS inspector's arrival; the inspector would then copy over the operators' entries in ink, sign the form, and submit it as an official MMS inspection report. Kendall concluded that her greatest concern was what these findings indicated about "the environment in which these inspectors operate - particularly the ease with which they move between industry and government." By the time the OIG report was released many of the most egregious offenders had already resigned from MMS; in 2009, the US Attorney's Office "declined the case for prosecution."

2010: ***April 1, Eric Neal, an inspector for MMS, conducted the final inspection[10] of Deepwater Horizon before the April 20th blowout.*** In testimony before the joint Coast Guard/MMS commission investigating the spill, Neal explained that much of the inspection was spent checking records of operator-conducted tests, to ensure that they were completed and the results deemed normal. When asked whether he had performed a gas detection system test (which is designed to help warn of impending blowouts) Neal said that he could not recall; he said that he performed tests as required by an MMS inspection checklist, and that test was not on the list. When pressed, Neal acknowledged that additional guidance was available in the PINC (Potential Incidents and Non-compliance) guide given to inspectors, but he hadn't used it for this inspection. Although a previous inspector[11] had noted that the rig "drilled through cement and lost circulation" in March, Neal did not revisit this situation, leaving the comments section of the form blank. At the time of this inspection, Neal was only four months into his training as a drilling inspector and had never before conducted a drilling inspection on his own.

2010: ***April 9, BP America's Senior Federal Affairs Director, Margaret D. Laney, sent a letter to the Council on Environmental Quality urging expanded use of Categorical Exclusions in approving oil and gas exploration permitting.*** Laney reminded the Council on Environmental Quality that Categorical Exclusions were established by NEPA, and as such any new guidance issued by the agency "should avoid language or creation of decision and review processes that suggest that categorical exclusions are unusual or exceptional agency actions." Instead, she argued, expanding the use of Categorical Exclusions would help "avoid unnecessary paperwork and time delays." According to DOI, MMS grants 250-400 Categorical Exclusions a year for Gulf drilling projects.

2010: ***April 13, BP engineers analyzed the two types of well casing being considered for the final segment of the Macondo well, cautioning that BP's preferred option was "unlikely to be a successful cement job" and would be "unable to fulfill M.M.S. regulations."*** Having been forced by dangerously high pressure and kicks to bypass the existing wellbore, BP needed to decide on casing and cementing for the new segment of the well. It had originally planned to use a single string of well casing, but engineers were now considering using a production liner instead. While the liner option was known to provide an "advantage over full string casing with redundant barriers to annular flow," BP officials argued that it would also be far more expensive and take more time to install than running a single string casing. BP estimated that using the liner would add $7-10 million to the "total completion cost" of the project. As a congressional investigation would later reveal, in a subsequent draft of the engineers' analysis of the single string option the text had been changed to "It is possible to obtain a successful cement job" and "It is possible to fulfill M.M.S. regulations." Despite the shift in the official company position, BP engineers remained concerned. In an email exchange regarding the well casing, BP engineer Brett Cocales called Macondo a "nightmare well which has everyone all over the place;" his colleague Richard Miller agreed, stating that "we have flipped design parameters around to the point that I got nervous." BP ultimately decided to go with its preferred, single string option, which it said represented the "best economic case."

2010: ***April 15, BP submitted another Application for Permit to Modify[12] to MMS, detailing the final steps it would take to finish the Macondo well and prepare it for temporary abandonment.*** Now 37 days behind schedule and tens of millions over budget, BP hoped to finish operations in just over a week. BP detailed its plan to use a single string of casing on the final segment

of the well (information that MMS noted had been "inadvertently removed" from previously approved well design schematics), and outlined the proposed abandonment procedure. After the well casing was set and the cementing job finished, BP would assess the stability of the well by running a negative test through the kill line, displace the drilling mud with seawater, set a final cement plug at the top of the well, and install a lockdown sleeve. The well would then be abandoned until BP decided to begin production. MMS official Frank Patton approved BP's application within hours.

Oil covered boom off Grand Isle, Louisiana (Kris Krug, Brian Epstein, June 17, 2010)

T! B

2010: *April 16, despite warnings from cement contractor Halliburton that to do so would lead to a "SEVERE gas flow problem," BP decided to use only six 'centralizers' to secure the new well casing.*

Halliburton had recommended that BP use 21 centralizers to hold the well casing in place, but BP only had six available on the Deepwater Horizon. According to emails obtained by federal investigators, BP engineers were concerned about the plan but also under pressure to complete operations. BP drilling engineer Brian Morel told Halliburton "[w]e have 6 centralizers…It's a vertical hole, so hopefully the pipe stays centralized due to gravity. As far as changes, it's too late to get any more product on the rig." Another BP engineer made similar comments to colleagues the following day: "[e]ven if the hole is perfectly straight, a straight piece of pipe even in tension will not seek the perfect center of the hole unless is has something to centralize it… But, who cares, it's done, end of story. Will probably be fine and we'll get a good cement job." Not wanting to take that risk, however, the BP's engineering team leader informed the well team leader that he had located 15 additional centralizers in Houston, which would be flown to the rig the following morning. The well team leader, however, was not pleased: "I just found out the stop collars are not part of the centralizer… Also, it will take 10 hrs to install them. I do not like this and ... I [am] very concerned about using them." (BP's internal investigation would later conclude that officials chose not to use the additional 15 centralizers because they "erroneously" believed that they were the wrong kind). BP finished securing the well, using only six centralizers, the following day.

T! B

2010: *April 18, BP flew in a crew of specialists to perform a 'cement bond log', a test to determine whether the cement had successfully secured the well casing to prevent a blowout.*

MMS required a cement bond log test in situations where the adequacy of the cement job was uncertain, but left vague the criteria for determining when a cement job is uncertain. In the preceding days, Halliburton and BP engineers had repeatedly expressed concern that the well had not been sufficiently secured. Nonetheless, BP ultimately changed its mind, telling the testing crew that the test would not be conducted. The cement bond log test would have cost BP $128,000 and taken 9-12 hours (or more, if problems had been detected). An independent engineering consultant would later tell the congressional committee investigating the spill that BP's decision not to conduct the test was "unheard of" and "horribly negligent."

T! ☑

APRIL 20, 2010: *Deepwater Horizon crewmembers performed two 'negative pressure tests' to make sure that the well was stable enough for abandonment.*

After receiving a number of inconsistent pressure readings the previous day, Transocean ran the first negative test early in the afternoon. The test showed inconsistent pressure, and drilling fluid came out of the drill pipe – an indication that gas could be building in the well. Rather than flushing the well to remove the gas – a process that can take hours – Offshore Installation Manager Jimmy Harell denied that there was a problem and ordered that the pressure on the BOP be

raised to hold any gas in the well down. Later in the afternoon, crewmembers and BP officials (who were visiting the rig to celebrate its seven-year safety record) disagreed about running a follow-up negative pressure test. Several of the rig crew were worried, and wanted to run another pressure test through the drill pipe – the way they had always done it. BP officials, however, insisted that the test be run through the 'kill line,' as their MMS-approved permit stipulated. The second test – through the kill line – was deemed normal by crew members and officials. Investigations and testimony would later reveal, however, that the kill line may have been blocked or misaligned with the BOP. According to BP's internal investigation, managers "misread" the negative test readings and decided to move on to the next phase of abandonment preparations.

April 20, 2010 – 8 PM:

BP ordered the crew to begin displacing the heavy drilling mud with seawater – one of the final steps before setting the last plug and capping the well for abandonment. Because the purpose of the heavy mud is to hold pressure down in the well, removing it and pumping in lighter seawater can only be done when the well is completely stable. As the negative pressure tests should have shown, however, the well was not stable; rig crewmembers would later testify that some Transocean employees expressed concerns but were overruled by BP officials. The displacement caused the well to become underbalanced, and hydrocarbons began to enter the well at 8:52 PM. BP's internal investigation found that a number of indicators should have alerted the crew to the influx, but workers failed to realize what was going on until it was too late. Operations were now 43 days behind schedule; the Deepwater Horizon had been scheduled to begin drilling a new well on another BP lease on March 8th. The delays had already cost BP $58 million.

April 20, 2010 – 9:49 PM:

A huge cloud of methane gas surged out of the Macondo well, causing a series of explosions on the Deepwater Horizon. At approximately 9:40 PM, drilling mud had begun shooting out of the well, indicating an eminent blowout. Crewmembers activated the annular preventer in the BOP, but it failed to seal around the pipe. According to BP, "[t]his first action was too late to prevent the release of hydrocarbons" which had already been flowing into the well for nearly an hour. Over the next several minutes, drill pipe pressure shot up as bore rams in the BOP attempted to close and seal off the well. In the chaos that followed the explosions, BOP operator Chris Pleasant rushed to the deck to initiate the Emergency Disconnect Sequence – the last chance for preventing a major blowout. The Emergency Disconnect Sequence involved activating the blind shear ram in the BOP to cut off the pipe and disconnect the riser, simultaneously sealing the well and freeing the rig. Despite orders from the rig's captain to "calm down" and wait, Pleasant activated the BOP. Indicator lights on the BOP console signaled that the sequence had been successful, but the BOP's flow meters showed no hydraulic pressure. Without pressure to force the blades of the blind shear ram closed, crewmembers realized that they could not seal the blown-out well. When the captain finally ordered the ship abandoned, many crewmembers had already begun rushing to the life boats, some even jumping overboard. The evacuees were rescued by a nearby boat; 11 crew members were missing, and later pronounced dead.

B 2010:

April 21 – May 5, using a remotely operated vehicle, BP made over 20 attempts to activate BOP components to seal the blown out well. BP's first attempts involved a 'hot stab,' blasting seawater into rams to force them to close. The pump that was used was not powerful enough to close the blind shear ram, however. Attempts to close the variable bore ram were also unsuccessful; officials later realized that what they thought was the variable bore ram was actually a test ram, which was useless for sealing the well. On the morning of April 22nd, a remotely operated vehicle was sent to cut hydraulic lines leading to the BOP; when these lines are severed, the 'deadman' is supposed to close the shear ram. At that time, a major hydraulic leak was discovered on the blind shear ram. Investigators would also later discover that the battery in one of the deadman's two control pods was dead. Next, a remotely operated vehicle cut a firing pin on the BOP to trigger the 'autoshear.' Investigators think that the blind shear ram actually did close at this time, but it failed to shear and seal the pipe. BP abandoned its efforts to seal the well with the BOP on May 5. In total, almost 5 million barrels of crude oil flowed into the Gulf of Mexico before the well was finally capped on July 15, 2010.

Deepwater Horizon Fire - April 22, 2010 (U.S. Coast Guard, www.incidentnews.gov/incident/8220)

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NOTES

1. See Towns Request 5/14/10 (ESO 00016936), #17, MMS-NOLA-B7-00006-0002.pdf.
2. See Towns Request 5/14/10 (ESO 00016936), #17, MMS-NOLA-B7-00006-0002.pdf
3. See Towns Request 5/14/10 (ESO 00016936), #17, MMS-NOLA-B7-00006-0001.pdf and MMS-NOLA-B7-00006-0002.pdf.
4. See Rahall Requests 5/13/10 and 5/14/10 (ESO 00016814), #2, MMS-NOLA-B1-00008-0001.pdf.
5. See Rahall Requests 5/13/10 and 5/14/10 (ESO 00016814), #4, MMS-NOLA-B1-00009-0001.pdf.
6. See Towns Request 5/14/10 (ESO 00016936), #17, MMS-NOLA-B7-00006-0001.pdf and MMS-NOLA-B7-00006-0002.pdf.
7. See Rahall Requests 5/13/10 and 5/14/10 (ESO 00016814), #3, MMS-NOLA-B1-00010-001.pdf.
8. See Rahall Request 5/6/10 (ESO 00016597), #11, MMS-NOLA-B2-00005-0003.pdf.
9. See Rahall Request 5/6/10 (ESO 00016597), #11, MMS-NOLA-B2-00005-0003.pdf.
10. See Towns Request 5/14/10 (ESO 00016936), #6, MMS-NOLA-B3-00001-0068.pdf.
11. See Towns Request 5/14/10 (ESO 00016936), #6, MMS-NOLA-B3-00001-0067.pdf.
12. See Rahall Request 5/6/10 (ESO 00016597), #11, MMS-NOLA-B2-00005-0004.pdf.

ACRONYMS

BOEMRE	Bureau of Ocean Energy Management, Regulation and Enforcement
BOP	Blowout preventer
CE	Categorical Exclusion
CLEAR Act	Consolidated Land, Energy and Aquatic Resources Act
DOI	Department of the Interior
EA	Environmental Assessment
EIS	Environmental Impact Statement
GAO	Government Accountability Office
GOMR	Gulf of Mexico OCS Region
MMS	Minerals Management Service
MRM	Minerals Revenue Management
NEPA	National Environmental Protection Act
OCS	Outer Continental Shelf
OIG	Office of Inspector General
OSRP	Oil Spill Response Plan
RIK	Royalty in Kind

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