

Chapter Three "It was like pulling teeth."

Oversight—and Oversights—in Regulating Deepwater Energy Exploration and Production in the Gulf of Mexico

The Deepwater Horizon rig sank on April 22, 2010, two days after the Macondo well blowout and explosion that killed 11 workers. Not long after the tragedy, its repercussions shifted to the Minerals Management Service (MMS), the federal agency responsible for overseeing the well's drilling and operation. Nineteen days after the rig sank, Secretary of the Interior Ken Salazar announced his intention to strip MMS's safety and environmental enforcement responsibilities away from its leasing, revenue collection, and permitting functions, and to place the former within a "separate and independent" entity.¹ A week later, he announced MMS would be reorganized into three separate entities with distinct missions: a Bureau of Ocean Energy Management; a Bureau of Safety and Environmental Enforcement; and an Office of Natural Resources Revenue.² And, by June 19, the Secretary had discarded the "MMS" name altogether.³ Like the *Deepwater Horizon*, MMS had ceased to exist.

The rig's demise signals the conflicted evolution and severe shortcomings—of federal regulation of offshore oil drilling in the United States, and particularly of MMS oversight of deepwater

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The often competing goals of energy independence and environmental protection collide at the Department of the Interior, which historically has held broad regulatory authority in both realms. For nearly three decades a single departmental agency, the Minerals Management Service, was at the center of the offshore-oil saga.

drilling in the Gulf of Mexico. The regulatory context for the leasing procedures and safety and environmental oversight that led up to the Macondo blowout took shape in the 1970s, when two conflicting priorities dominated the political landscape. The first to appear, in the early 1970s, was the public mandate for environmental protection, which prompted enactment of an extraordinary series of sweeping regulatory laws intended, in the language of the National Environmental Policy Act, to "create and maintain conditions under which man and nature can exist in productive harmony."⁴ The second was the nation's drive for energy independence; it led to new policies designed to increase domestic production and decrease American reliance on foreign energy supplies. Oil served as a catalyst for both: the Santa Barbara oil spill in 1969 helped to promote passage of demanding environmental protection mandates, and the OPEC oil embargo of 1973 amplified the urgency of efforts to make the nation more energy self-sufficient.

The federal regulation of offshore drilling awkwardly combined the two priorities, as a series of Congresses, Presidents, and Secretaries of the Interior—responding to competing constituencies in explicitly political ways—sought to reconcile the sometimes conflicting goals of environmental protection, energy independence, and revenue generation. In some offshore regions, oil drilling was essentially banned in response to environmental concerns. Elsewhere, most notably in the Gulf, some environmental protections and safety oversight were formally relaxed or informally diminished so as to render them ineffective, promoting a dramatic expansion of offshore oil and gas production and billions of dollars in federal revenues.

The origins of MMS vividly illustrate that political compromise. Secretary of the Interior James Watt created the agency with great fanfare in January 1982, aiming from the outset to promote domestic energy supplies by dramatically expanding drilling on the outer continental shelf. He combined, in one entity, authority for regulatory oversight with responsibility for collecting for the U.S. Treasury the billions of dollars of revenues obtained from lease sales and royalty payments from producing wells.⁵ From birth, MMS had a built-in incentive to promote offshore drilling in sharp tension with its mandate to ensure safe drilling and environmental protection.

Revenue generation—enjoyed both by industry and government—became the dominant objective. But there was a hidden price to be paid for those increased revenues. Any revenue increases dependent on moving drilling further offshore and into much deeper waters came with a corresponding increase in the safety and environmental risks of such drilling. Those increased risks, however, were not matched by greater, more sophisticated regulatory oversight. Industry regularly and intensely resisted such oversight, and neither Congress nor any of a series of presidential administrations mustered the political support necessary to overcome that opposition. Nor, despite their assurances to the contrary, did the oil and gas industry take the initiative to match its massive investments in oil and gas development and production with comparable investments in drilling safety and oil-spill containment technology and contingency response planning in case of an accident.

On April 20, the inherent risks of decades of inadequate regulation, insufficient investment, and incomplete planning were realized in tragic fashion. MMS no doubt can fairly boast

of many hardworking individual public servants who have in good faith sought to achieve their agency's important safety mission over sustained industry opposition. But, notwithstanding their individual efforts and accomplishments, the overall picture of MMS that has emerged since April 20 is distressing. MMS became an agency systematically lacking the resources, technical training, or experience in petroleum engineering that is absolutely critical to ensuring that offshore drilling is being conducted in a safe and responsible manner. For a regulatory agency to fall so short of its essential safety mission is inexcusable.

This chapter is divided into three parts. The first part describes the emergence of MMS as the dominant federal regulatory agency responsible for overseeing the offshore oil and gas industry. The second part examines the performance of MMS over time, with particular focus on its efforts to promote drilling safety and the institutional, political, and cultural impediments to its success. Finally, the third part explores in more detail the application of environmental protection requirements to offshore drilling, highlighting the particular ways in which the requirements were effectively diminished or ignored.

Creation of a Cross-Purposes Regulator

The federal government's authority to regulate oil and gas leasing activities on the outer continental shelf is not merely an expression of the government's traditional authority to regulate private activities affecting public health, safety, and welfare. Its authority is even more sweeping in nature and further arises out of the nation's *ownership* of the natural resources on the outer continental shelf and the federal government's corresponding power and responsibility to manage and protect those invaluable resources on behalf of current and future generations of Americans. As described by the Constitution's Property Clause, it is the "power to dispose and make all needful rules and regulations respecting the territory or other property belonging to the United States."⁶ The federal government, accordingly, has plenary authority, essentially "without limitations,"⁷ "to prescribe the conditions upon which others may obtain rights in" natural resources located on properties that belong to the nation as a whole.⁸ Because, moreover, of the national security implications of those resources, especially energy resources, that national power further implicates the President's broad authority as Commander-in-Chief to ensure the maintenance of sufficient energy supplies to keep the nation secure.⁹

Rights and Riches: The Early Skirmishes over the Outer Continental Shelf

The foundations of federal regulation of offshore oil and gas development were laid in the Outer Continental Shelf Lands Act of 1953.¹⁰ That initial legislation gave the Department of the Interior diverse and potentially contradictory responsibilities for offshore mineral development. The vigorous debates preceding enactment of the new law and its early implementation gave the impression that it was all about the money.¹¹

The potential windfall from leasing public land offshore to private companies for mineral development provoked an intense dispute between coastal states and the federal

government. In 1945, President Harry Truman had proclaimed federal authority over the subsoil of the U.S. continental shelf. California, Texas, and Louisiana defied this proclamation and continued to lease offshore land, prompting suits by the U.S. Department of Justice. The Supreme Court ruled against California in 1947 and against Louisiana and Texas in 1950, declaring that the federal government possessed "paramount rights" that transcended the states' rights of ownership.¹² Offshore leasing and exploration stalled for three years, as Congress and the 1952 presidential candidates postured around proposals to return submerged coastal lands to the states.¹³ That conflict was largely resolved in the Submerged Lands Act, passed in 1953, two months before the Outer Continental Shelf Lands Act: states would control three nautical miles out from the shoreline (9 nautical miles for Texas and western Florida due to historic claims).¹⁴ The "outer continental shelf"—seaward of state lands—was claimed by the federal government. Estimates of the value of federal land offshore ranged from \$40 billion to \$250 billion.¹⁵

President Truman had called on the nation to postpone mineral development in the federal offshore area, foregoing the revenues immediately available. He argued that setting the federal offshore area aside, in the Naval Petroleum Reserve, would ensure that the oil and gas would be there later when needed for strategic purposes.¹⁶ But the congressional debates in 1953, under President Dwight Eisenhower, focused on what to do with this attractive new source of revenue. Various senators proposed dedicating the funds to deficit reduction or to education. But in the end, the new money from lease sales, rents, and royalties would flow into the general treasury.¹⁷

The first leases. During the first week of September 1954, Secretary of the Interior Douglas McKay announced the first federal lease sale: rights to explore 748,000 acres off the coast of Louisiana.¹⁸ When the sealed bids were opened on October 13, half the available acreage was leased with winning bids totaling \$130 million. The next month, a similar sale off the Texas coast yielded \$23 million.¹⁹ The promise of a new stream of federal revenue had come to pass.

The Rise of Environmental Law

At the outset, environmental restrictions on offshore drilling were very limited. The 1953 legislation governing offshore mineral development authorized the Interior Department to prescribe rules "for the prevention of waste and conservation of natural resources" of the outer continental shelf,²⁰ but "conservation" at that time mostly referred to the desire not to waste the resource physically by destroying the oil and gas reservoir. The Department did announce, however, that the Fish and Wildlife Service would have to approve all offshore drilling in wildlife refuges and that oil and gas leasing there that endangered "rare" wildlife species (like whooping cranes or trumpeter swans) would not be allowed.²¹

Federal offshore leasing policy remained largely unchanged until a Union Oil Company well located in the Santa Barbara Channel blew out on January 28, 1969 (described in Chapter 2). The Interior Department toughened its rules in response to the spill (after first issuing a moratorium on offshore drilling and production in California waters pending those new rules), the first changes since 1953.²² And, at that time Congress was already taking up legislation in response to heightened awareness of a host of environmental

problems, now punctuated by the Santa Barbara spill. Starting with the National Environmental Policy Act (NEPA), signed into law on January 1, 1970,²³ Congress enacted sweeping new environmental protection and resource conservation laws that dramatically changed the federal role in overseeing activities that polluted the air or water or that exploited the nation's natural resources on public lands—including offshore oil and gas development.²⁴

Given its bold promises of preserving the environment for future generations, NEPA is often referred to as the *Magna Carta* of the nation's environmental laws. It requires federal agencies to prepare "environmental impact statements" for all proposed "major Federal actions significantly affecting the quality of the human environment" in order to ensure that decisions are based on full consideration of their environmental consequences.²⁵ Although it is far from clear that either Congress or the President appreciated NEPA's full import, federal courts quickly embraced the law, applying its procedural requirements strictly and enjoining agency actions found to be in violation.²⁶

In order to provide the science needed for the environmental reviews and consultations directed by these statutes, the Department of the Interior created the "Environmental Studies Program" in 1973.²⁷ The program was established to provide information on the geological, physical, biological, and chemical characteristics of offshore oil and gas leasing areas. It was initially focused on scientifically characterizing areas and providing baseline environmental data, but later shifted its focus to research directly linked to resource management decisions by the offshore leasing program.²⁸

NEPA was just the first among approximately 20 new laws enacted during the 1970s that aimed to advance environmental protection by curbing pollution of the nation's waters, air, or land; manage commercial activities that sought to exploit the nation's natural resources, including mining and forestry; manage the coastal zone prudently; control noise; regulate toxic substances; and protect endangered species—among other goals.²⁹ Amid this rapid, extensive transformation of the nation's environmental protection and natural resource management laws, one had particular significance for federal oversight of offshore drilling: the Outer Continental Shelf Lands Act Amendments of 1978. It was the last major natural resource law that Congress passed during the 1970s—and so embodies the shifting nature of national politics from the decade's beginning to its end.

Energy Independence vs. Environmental Protection: Conflicting Aims in High Relief

Although Americans' embrace of environmental protection persisted throughout the decade, the 1973 oil embargo prompted ambitious efforts to promote the nation's energy independence. President Richard Nixon proposed a dramatic expansion of offshore oil and gas development, including in frontier areas around most of the nation's coast. President Jimmy Carter created the Department of Energy in 1977 and secured passage of the National Energy Act of 1978, consisting of five separate laws, some designed to promote development of domestic energy supplies and others to encourage energy conservation.³⁰

The Outer Continental Shelf Lands Act Amendments, also enacted that year, not surprisingly reflected the tension between the nation's environmental and energy independence goals. Those skeptical of accelerated offshore leasing—including many coastal states, local governments, fishermen, and environmentalists—sought, to that end, opportunities to ensure that offshore oil and gas leasing complied with strict safeguards and a greater voice in the decisionmaking process. They were concerned about the broad discretion the Act conferred on the Secretary of the Interior over control and management of offshore energy resources.

By contrast, advocates for expanded domestic production wanted to ensure that the new legislation did not allow environmental protection laws to stifle exploration, development, and production of significant offshore oil and gas reservoirs. They were aware that environmental organizations had used NEPA successfully to challenge a proposed lease sale, covering almost 380,000 acres offshore Louisiana and Mississippi, on the grounds that the Interior Department had failed to first prepare an adequate environmental impact statement. The federal courts had agreed and enjoined the sale in January 1972.³¹ Coastal states and environmentalists had since launched challenges against other lease sales.

Congress began to hold hearings on revamping the federal offshore leasing program in 1974—just after the oil embargo and not long after those early environmental challenges.³² The law that emerged in 1978³³ included findings on the need to reduce the nation's dependence on "imports of oil from foreign nations," the potential to increase production of oil and gas on the outer continental shelf significantly "without undue harm or damage to the environment," and the need to review "environmental and safety regulations relating to activities on the Outer Continental Shelf . . . in light of current technology and information."³⁴ The Act's purposes included "expedited exploration and development of the Outer Continental Shelf" and the "development of new and improved technology for energy resource production which will eliminate or minimize risk of damage to the human, marine, and coastal environments."³⁵

The 1978 Act fundamentally transformed federal offshore leasing. The law added detailed procedures governing the leasing of rights to explore, develop, and produce the resources of the outer continental shelf. The offshore program was divided into four distinct stages:

- Development by the Secretary of the Interior of a "schedule of proposed lease sales indicating, as precisely as possible, the size, timing, and location of leasing activity which he determines will best meet national energy needs for the five-year period following its approval or reapproval";³⁶
- Lease sales by the Secretary pursuant to that five-year schedule;
- Submission by lessees of exploration plans for the Secretary's approval; and
- Upon discovery of oil and gas in commercial quantities, submission of development and production plans by lessees for the Secretary's approval.

The Act further requires lessees to apply for the Secretary of the Interior's permission prior to drilling *any* wells, pursuant to an approved exploration plan³⁷ or, in most areas, pursuant to a development and production plan.³⁸

FIGURE 3.1: Outer Continental Shelf Oil and Gas Leasing, Exploration & Development Process



Four major steps guide the Outer Continental Shelf leasing and development process, from the decision to open an area to drilling, to the operations during oil and gas production. Before a lease is granted, Stage I establishes the "5-Year Program," setting the schedule and possible locations for individual lease sales, and Stage II lays out the details by which each individual lease sale is conducted. After a company acquires a lease, Stage III plans and executes the oil and gas exploration activities, and Stage IV plans and executes the oil and gas development and production operations.

At the same time, the statute also made clear that environmental safeguards are a relevant, important part of the Secretary's decisionmaking. For instance, it charged the Secretary "to obtain a proper balance between the potential for environmental damage, the potential for discovery of oil and gas, and the potential for adverse impact on the coastal zone."³⁹ The law also expressly required the Secretary to prepare a series of "environmental studies"

to assess the environmental impacts of activities on the outer continental shelf,⁴⁰ and "the Secretary of the Department in which the Coast Guard is operating" (currently the Department of Homeland Security) to promulgate "safety regulations."⁴¹ Such regulations were to include "the use of the best available and safest technologies which the Secretary [of the Interior] determines to be economically feasible, wherever failure of equipment would have a significant effect on safety, health, or the environment."⁴² But this potentially demanding requirement included an exception "where the Secretary determines that the incremental benefits are clearly insufficient to justify the incremental costs of utilizing such technologies."⁴³

The Gulf of Mexico exemption. Offsetting the apparent interest in environmental review, the Act reflected a carefully calibrated political compromise designed to promote offshore drilling: it expressly exempted leases in the "Gulf of Mexico" from the law's requirement that development and production pursuant to an oil and gas lease must be based on and consistent with a "development and production plan" submitted by the lessee and approved by the Secretary of the Interior.⁴⁴ (No comparable exception applied to "exploration plans," which all lessees were required to submit for approval prior to conducting such drilling, which naturally occurs prior to development and production.⁴⁵) The telling compromise lay in the details: the law specified that a development and production plan must set forth "the environmental safeguards to be implemented"⁴⁶ and the Secretary must at least once declare the approval of a development and production plan in any area "to be a major Federal action"—language which triggers NEPA's requirement for an impact statement detailing the environmental consequences of development and production.⁴⁷ Therefore, by exempting leases in the Gulf from the required "development and production plan," the Act was also exempting such leases from the related requirement of at least one NEPA impact statement.⁴⁸ And the Act included one further bit of congressional horse-trading. It authorized the Secretary of the Interior to reinstate the development and production plan requirements, including NEPA review, for an oil and gas lease located in the eastern planning area of the Gulf abutting the western coastline of Florida, leaving only the central and western Gulf planning areas off limits from such requirements.⁴⁹

The legislative history makes clear that this was a deal brokered between the Carter administration, the oil and gas industry, Congress, and Gulf states. Industry had argued that NEPA and similar requirements could lengthen the interval between leasing and production by three to six years. In response to this concern, Congress amended the bill to draw a distinction between the Gulf of Mexico, where such consultation would not be required, and other offshore areas where it would. The rationale for singling out the Gulf of Mexico for less environmental oversight than other parts of the nation's offshore was that the oil and gas industry in the Gulf was already mature and therefore the environmental risks were already better known than they were in "frontier" areas. This rough geographically-defined generalization took no account of the Gulf's remarkable fisheries, or the economic importance of the region's beaches to the tourism industry. Secretary of the Interior Cecil Andrus sought administrative discretion to require the full environmental review even in some non-frontier areas if drilling in those areas proved to present heightened environmental risks,⁵⁰ but the final legislation made that further concession only for a part of the Gulf.⁵¹

A compromise comes undone. Whatever compromise Congress and President Carter may have thought they had struck in the 1978 legislation quickly unraveled. In the first five-year leasing schedule issued in June 1980, Secretary Andrus offered 55 million acres, and proposed Lease Sale 53 along the Pacific Coast. Unlike previous sales, which had been concentrated on one geographic region, Lease Sale 53 called for nominations of tracts from the Santa Barbara Channel all the way up the California coast to the Oregon border. Fierce opposition immediately greeted the proposed leasing schedule and Lease Sale 53. California and Alaska filed lawsuits challenging the legality of the leasing schedule under the 1978 law. After huge public rallies, Secretary Andrus formally withdrew the entire northern and central California portion of the proposed sale.⁵²

The Creation of the Minerals Management Service (MMS)

Against a backdrop of rising inflation, record interest rates, further turbulence in the oil market following the 1979 Iranian revolution, and a severe recession, the politics of offshore drilling became even more volatile early in the administration of President Ronald Reagan, who was inaugurated in January 1981. Perhaps not surprisingly, after the upwelling of new regulatory powers under Presidents Nixon, Ford, and Carter, the new President made clear from the outset his view that government regulation was a leading cause of the nation's problems—a drag on the nation's economy in general and the development of its rich natural resources in particular.

Secretary of the Interior James Watt shared that outlook and focused his early regulatory reform efforts on offshore drilling. He quickly vowed to lease a billion acres of the outer continental shelf—virtually the entire area—for oil and gas exploration.⁵³ And he made clear his commitment to maintaining that objective, notwithstanding enormous criticism: "If the press is here," he declared during a National Ocean Industries Association meeting in April 1982, "I hope they will write this down. We will offer one billion acres for leasing in the next five years. We will not back away from our plans to have 42 lease sales."⁵⁴

MMS originated in this context, driven by the administration's desire to ensure that it obtained the financial fruits of its plan for this massive expansion in offshore drilling. With the dramatic increase in oil prices over the previous decade, royalties and revenues from federal oil and gas resources had already become the second largest revenue source for the U.S. Treasury. (A September 1980 lease sale in New Orleans had demonstrated the sums potentially at stake, bringing in a record \$2.8 billion of cash bonuses, far more than any prior lease sale; see Chapter 2.) Clearly, this was a consequential way to secure revenue without needing to raise taxes.

Revenue collection and regulation, **separated**. Until this time, the Interior Department's Bureau of Land Management and Bureau of Indian Affairs had been responsible for collecting royalties for mining and drilling on federal and Indian lands, respectively—and regulatory oversight of offshore exploration and energy production had been vested in the U.S. Geological Survey's Conservation Division.

But the department's management of royalties was subjected to frequent criticism. In July 1981, the administration created a Commission on Fiscal Accountability of the





Sources: Minerals Revenue Management, Total Federal offshore mineral revenue collections, Calendar Years 1953-2000, 2001, 7, http://www.onrr.gov/Stats/pdfdocs/coll_off.pdf; Office of Natural Resources Revenue, Total Federal Offshore Reported Royalty Revenues, http://www.onrr.gov/ONRRWebStats/Home.aspx.

Revenues from lease bonuses can occasionally dwarf royalties. A single 2008 lease sale in the Chukchi Sea, Alaska, brought in a record cash bonus of \$2.6 billion.

* Calendar year from 1955-200; fiscal year from 2001-2010

Nation's Energy Resources, charged with reviewing and recommending changes in the system for collecting royalties. Reporting the next January, the commission concluded that "[m]anagement of royalties for the nation's energy resources has been a failure for more than 20 years....[T]he oil and gas industry is not paying all the royalties it rightly owes. The government's royalty recordkeeping ... is in disarray."⁵⁵ It accordingly called for a complete overhaul, including a wholesale reorganization of Interior Department responsibility for overseeing royalty collection from federal and Indian lands.

Mixing oil and water: revenue-collection and regulation combined. Using the discretion conferred on him in the 1978 Outer Continental Shelf Lands Act Amendments, Secretary Watt moved quickly, issuing Secretarial Order No. 3071 on January 19, creating the Minerals Management Service. Moving beyond the commission recommendations for reform of royalty collection, he provided that the new agency would also absorb offshore leasing and oversight responsibilities from the U.S. Geological Survey. There is no available formal record of his reasoning for this further step, but the most likely reasons are revealed by a memorandum written by the Chief of the Conservation Division, Don Kash, dated December 11, 1981, just a few weeks earlier. In that memo, Kash vigorously argued in favor of relocating responsibilities for lease management from the Conservation Division into a new independent agency within the Interior Department—precisely what the Secretary then did.

But Secretary Watt's decision did not fully reflect Kash's concerns. The latter had worried that the controversial politics of lease management were "sullying the [U.S. Geological] Survey's scientific reputation" and threatened its "science ethos" and "scientific virtue." The collision of cultures between those engaged in scientific research and those engaged in lease management was a "continuing source of irritation" and "bitterness" within the U.S. Geological Survey. He was concerned that lease management would increasingly take priority, draining resources from the research that should be the hallmark of the U.S. Geological Survey. Finally, Kash described problems that leasing management would face going forward—foremost among them a tendency toward myopic thinking and inadequately trained personnel. On that last issue, he pointed out that the government could not retain "geologists and geophysicists associated with [outer continental shelf] activities" because they "can move to an industrial or business concern for a substantial increase in pay, almost at will." Kash recommended a series of steps to attract and train personnel capable of overseeing the management of offshore oil and gas activities.⁵⁶

Secretary Watt organized two distinct programs within his newly-minted MMS: the Offshore Energy and Minerals Management program and the Minerals Revenue Management program. (He rejected the General Accounting Office's recommendation, which industry had opposed, that MMS also assume responsibility for *onshore* oil and gas leasing; the Bureau of Land Management retained that regulatory authority.⁵⁷) The result was that the same agency became responsible for regulatory oversight of offshore drilling—and for collecting revenue from that drilling.

The Billion-Acre Leasing Land Rush

It did not take long for Secretary Watt to make sure that his new agency was fully engaged. In July 1982, just after MMS's birth, he issued a new five-year plan that envisioned leasing nearly one billion acres of the outer continental shelf from August 1982 to June 1987—18 times the 55 million acres offered by the first five-year plan of June 1980. To meet this ambitious program, he scheduled 41 sales over the ensuing five years; divided the billion acres into 18 planning areas, ranging in size from 8 million to 133 million acres; and established a streamlined process for leasing in those areas. Under this new process, MMS would no longer lease just those tracts previously designated by industry to be of interest, but would instead offer vast acreage on an "area-wide" basis.⁵⁸

As described in Chapter 2, area-wide leasing promoted significant new discoveries of large oil-bearing formations in contrast to the smaller fields found in shallower depths. Those additional discoveries in fact led to major technological advances and increased exploration of oil and gas reservoirs in Gulf waters. But the federal revenues generated fell short of expectations. With such a large increase in supply, the price offered for leases declined. The Sierra Club claimed that Secretary Watt's plans for accelerated leasing would cost the U.S. Treasury \$77 billion over the five-year period.⁵⁹ Moreover, the Gulf states persuaded Congress to increase their share of leasing revenues as compensation for physical drainage of oil and gas from reservoirs within state jurisdiction by offshore activities of federal lessees. In 1986, Congress amended the federal law to guarantee that the Gulf states would receive 27 percent of the revenues from leases in the federal zone three nautical miles





In January 1982, President Reagan's Interior Secretary, James Watt, created the Minerals Management Service (MMS) in support of his goal to open unprecedented reaches of U.S. territorial waters to oil and gas exploration. MMS had a conflicting and ultimately disastrous mandate: to both regulate offshore energy leases and collect the revenue they generated.

Frank Johnston/The Washington Post via Getty Images

beyond state waters.⁶⁰ Previously the law had provided only that states should receive a "fair and equitable" portion of those revenues, an ambiguous standard that invited disagreement between the federal and state governments concerning what that portion should be.

The Gulf of Mexico's still-more-special status. The distinction first drawn in the 1978 Act between offshore drilling in the Gulf of Mexico and in other parts of the nation was widened further during the 1980s and 1990s. What began as a policy allowing offshore drilling in the Gulf under a more relaxed regulatory regime than applied elsewhere gradually became a policy of allowing offshore drilling, as a practical matter, almost *only* in the Gulf.

Court challenges quickly greeted Secretary Watt's efforts to expand offshore leasing throughout the United States. But decisively, Congress, not court rulings, ended the Secretary's plan and effectively singled out the Gulf for offshore drilling. In a series of

recurring one-year moratoriums imposed on the Interior Department's annual budgets, the House Appropriations Committee effectively prohibited everything from new leasing activities to exploration and development on existing leases in areas all over the outer continental shelf outside the Gulf of Mexico and a few sub-regions off of Alaska.⁶¹ From 1982 to 1993, the area covered by these moratoriums expanded from 0.7 million acres to 266 million.⁶² The persistent unpopularity of offshore drilling outside the Gulf was underscored by President George H.W. Bush. Despite his background as a former Gulf state (Texan) oil-industry executive, he issued a memorandum in June 1990 that canceled all scheduled sales off of the California, southern Florida,* North Atlantic, Washington, and Oregon coasts and withdrew those areas from leasing until after 2000 (Alaska was not mentioned). At the same time, the President began a process to buy back existing leases in the eastern Gulf of Mexico; he established the proposed Monterey Bay Marine Sanctuary, banning oil and gas leasing there; and he prepared legislation to provide coastal communities directly affected by outer continental shelf development with a greater share of revenues from development and more voice in decisionmaking.⁶³

Secretary Watt's promise of offshore drilling throughout the outer continental shelf was never realized. But he succeeded in creating an agency (MMS) and a method of leasing (via area-wide sales) that dramatically expanded the reach of offshore drilling in one place: the Gulf of Mexico. In that one oil- and gas-rich region, that same agency would increasingly struggle to keep up with the pace of industry expansion, while juggling four distinct responsibilities—offshore leasing, revenue collection and auditing, permitting and operational safety, and environmental protection—requiring different skill sets and cultures.

Impediments to Safety Regulation

The federal government has never lacked the sweeping authority required to control whether, when, and how valuable oil and gas resources located on the outer continental shelf are leased, explored, or developed. As described at the outset, the government's authority is virtually without limitation, traceable to both its authority as proprietor and as sovereign, then further bolstered by the President's inherent authority as Chief Executive and Commander-in-Chief to ensure the security of the nation. The root problem has instead been that political leaders within both the Executive Branch and Congress have failed to ensure that agency regulators have had the resources necessary to exercise that authority, including personnel and technical expertise, and, no less important, the political autonomy needed to overcome the powerful commercial interests that have opposed more stringent safety regulation.

* Although Florida's jurisdiction offshore extends to 9 nautical miles, Florida has not joined those other states in favoring significant offshore oil and gas drilling. Florida has instead supported continuing moratoriums on drilling in the outer continental shelf off the Florida coast. Nor has the State sought to promote such drilling within its territorial jurisdiction offshore. Florida's principal reason has been to protect its coast from the potential adverse environmental consequences of drilling activity, including oil spills. See Robert Gramling, Oil on the Edge: Offshore Development, Conflict, Gridlock (Albary, NY: SUNY Press, 1996), 13.

Safety on the Outer Continental Shelf: Increasing Risk, Absence of Necessary Regulatory Reform, and Decreasing Government Oversight Capacity

Modern oil and gas drilling rigs and producing platforms are, in effect, enormous floating machines, densely equipped with powerful engines and responsible for keeping within geologic formations large volumes of highly combustible hydrocarbons at high temperatures and pressures. For all their productivity, the rigs expose their crews to the risks of injury or death if not properly operated and maintained—risks compounded for operations conducted in progressively deeper waters, ever farther from shore.

From its creation until the Macondo well blowout, MMS was the federal agency primarily responsible for leasing, safety, environmental compliance, and royalty collection from offshore drilling.* In carrying out its duties, MMS subjected oil and gas activities to an array of prescriptive safety regulations: hundreds of pages of technical requirements for pollution prevention and control, drilling, well-completion operations, oil and gas wellworkovers (major well maintenance), production safety systems, platforms and structures, pipelines, well production, and well-control and -production safety training.⁶⁴ As required by the 1978 Act, MMS also attempted to conduct both annual and periodic unscheduled (unannounced) inspections of all offshore oil and gas operations to try to assess compliance with those requirements. Agency officials have tried to meet the requirement for annual inspections of the operation of safety equipment designed to prevent blowouts, fires, spills, and other major accidents. In both annual and unannounced inspections, MMS officials used a national checklist, covering categories such as pollution, drilling, well completion, production, crane, electrical, and personal safety. Most inspections tend to cover a subset of the elements on the list. Roughly 20 percent of the matters for inspection (those for the production meters) are not related to safety.65

But over time, MMS increasingly fell short in its ability to oversee the offshore oil industry. The agency's resources did not keep pace with industry expansion into deeper waters and industry's related reliance on more demanding technologies. And, senior agency officials' focus on safety gave way to efforts to maximize revenue from leasing and production.

The "Safety Case" and MMS's Inability to Adopt New Practices

By the early 1990s, some MMS officials had begun to rethink the agency's approach to safety oversight of the offshore industry. In the wake of an accumulation of accidents in U.S. waters, and several devastating accidents elsewhere around the globe, they had come to appreciate that a command and control, prescriptive approach to regulation did not adequately address the risks generated by the offshore industry's new technologies and exploration, development, and production activities, including industrial expansion into deeper waters.

In March 1980, the *Alexander Kielland*—built as a drilling rig but under lease to Phillips Petroleum Company to house offshore workers at the Ekofisk Field in the Norwegian North Sea—capsized, killing 123 of the 212 people on board the "flotel." Two years

^{*} Other federal agencies, including the United States Coast Guard, Department of Transportation, Occupational Safety and Health Administration, Environmental Protection Agency, and National Oceanic and Atmospheric Administration possess regulatory authority over discrete aspects of oil and gas operations offshore.

later, during preparation for an approaching North Atlantic storm, the *Ocean Ranger* semisubmersible drilling the Hibernia field for Mobil Oil of Canada, sank off the coast of Newfoundland; all 84 crew members were lost in the freezing-cold waters. And in July 1988, the Piper Alpha production platform operated by Occidental Petroleum 120 miles northeast of Aberdeen, Scotland, exploded and sank, killing 167 people, including 2 rescuers.⁶⁶ Although the causes of the three accidents varied, they all involved international operations of U.S.-based oil and gas companies. Common contributing factors included inadequate safety assurance, worker training, and evacuation procedures. Poor communication and confusion about lines of authority amplified the death toll in at least two of the accidents.

The Norwegian government responded to the loss of the *Alexander Kielland* by transforming its approach to industry operations. Under the new regime, rather than relying solely on prescribed operational and safety standards, the government required the industry to demonstrate thorough consideration of all risks associated with the structures and operations for a drilling or production plan. The regulator no longer "approved" operations. Shifting the burden of demonstrating safety to the operator, the regulator would instead now "consent" to development activity proceeding only upon the operator's demonstration that sufficient safety and risk management systems were in place.

The Piper Alpha accident and the subsequent investigation led by Lord Cullen had a similar impact on United Kingdom regulation. As in Norway, the previous prescriptive regulatory approach evolved into one where regulations were supplemented with a requirement for companies to demonstrate to the regulator that they had undertaken a thorough assessment of risks associated with an activity and they had adequate safety and risk management systems to address those risks.

All these foreign regulators—the United Kingdom, Norway, and Canada—had previously relied on the kind of prescriptive approach used in the United States, but in the aftermath of these fatal accidents in harsh, remote offshore environments, authorities elsewhere concluded that adding a risk-based approach was essential. They faulted reliance on the "prescriptive regulation with inspection model" for being fundamentally reactive and therefore incapable of driving continuous improvement in policies and practices.⁶⁷ According to Magne Ognedal, the Director General of the Norwegian Petroleum Safety Authority, the prescription-only model engendered hostility between the parties and put the risk—legal and moral—onto the *regulator* to accommodate changing technology, geology, and location, rather than onto the operator, where the responsibility rightly belonged.⁶⁸ Under the new safety-management model, minimum standards for structural and operational integrity (well control, prevention of fires and explosions, and worker safety) remained in place. But the burden now rested on industry to assess the risks associated with offshore activities and demonstrate that each facility had the policies, plans, and systems in place to manage those risks. In the United Kingdom, such riskmanagement plans were called a "Safety Case."

On March 19, 1989, while the Piper Alpha accident was still under review, a platform operated by ARCO exploded in the South Pass Block 60 off the Louisiana coast. An uncontrolled release of liquid hydrocarbons ignited, destroying the platform and killing seven people. An MMS investigation concluded that poor management of a repair operation was to blame: not only was there an "absence of detailed and coordinated planning for the project," there was a dearth of much-needed "oversight over contractor activities."⁶⁹

After South Pass Block 60, the latest in the series of tragic accidents involving U.Sbased companies, MMS convened an internal task force to review its offshore drilling inspection and enforcement program by October 1989. That same year, the agency also commissioned the Marine Board of the National Research Council to make recommendations for overhauling MMS's regulatory program to best fulfill its safety mission at current levels of staffing and budget.⁷⁰ The Marine Board's report, delivered in January 1990,⁷¹ concluded that MMS's emphasis on a list of "potential incidents of non-compliance" could lead to an attitude on the part of an operator that compliance with the list equals safety, thereby diminishing "recognition of [the operator's] primary responsibility for safety."⁷² The report recommended that MMS place its primary emphasis on the detection of potential accident-producing situations—particularly those involving human factors, operational procedures, and modification of equipment and facilities rather than scattered instances of noncompliance with hardware specifications.

The Marine Board found that MMS needed to upgrade its program to address changes in the operating environment on the outer continental shelf—including its aging platforms, more complex systems and operations, activities in deeper water at greater distances from shore, and changing characteristics of operating companies. Further, the Board urged continuation of frequent and comprehensive inspections of facilities engaged in drilling and workover operations, including the conduct of the operations themselves, because of "(1) the high frequency of events per unit for these facilities as compared to production facilities, and (2) the large population of workers on each facility. . . ." Overall, the Board recommended that MMS cultivate a more proactive inspector corps and develop a greater focus on identifying emerging safety risks.⁷³

Safety reform run aground. Unfortunately, by the time the Marine Board delivered its report, hardly anyone was listening. Five days after the South Pass Block tragedy in March 1989, the *Exxon Valdez* ran aground in Prince William Sound, spilling an estimated 11 million gallons of crude oil on the Alaskan shore. The Board's calls for change were thus presented to a government still preoccupied with cleanup duties in Prince William Sound and to a nation attuned to demands for requiring double-hulled tankers. Ironically, Congress enacted the Oil Pollution Act of 1990, but failed to address *any* of the regulatory deficiencies identified by the Marine Board, while *adding* to MMS's regulatory responsibilities (the agency was charged, under the Act and a supplementary Presidential Executive Order⁷⁴ with overseeing offshore pipelines and oil-spill response planning and prevention).⁷⁵ The agency's already scarce regulatory resources were stretched even thinner.

MMS nonetheless tried to take the initiative for regulatory reform. In July 1991, in response to the Marine Board report and MMS's own internal task force report, MMS published a notice requesting comments on alternative strategies to promote safety and environmental protection, specifically a requirement that outer continental shelf lessees and/or operators develop, maintain, and implement "a safety and environmental management program (SEMP), similar to the United Kingdom's Formal Safety Assessment or Norway's Concept Safety Evaluation programs."⁷⁶ Declaring that lessees and operators already had "full responsibility to plan and prepare for the overall safety and reliability of Outer Continental Shelf operations," MMS asserted that requiring SEMP would help to enhance offshore safety and environmental protection.⁷⁷ Acknowledging the difference in scale and scope of the activities between the Gulf of Mexico and the North Sea—as the Gulf consists of many more, but smaller facilities⁷⁸—MMS sought in its request for comments "to determine the degree to which such programs exist and to draw upon that experience in establishing the requirements for a management control program."⁷⁹

Reform indefinitely frozen in time. At the time of the Macondo blowout—almost 20 years after its original proposal—MMS had still not published a rule mandating that all operators have plans to manage safety and environmental risks. The agency's efforts to adopt a more rigorous and effective risk-based safety regulatory regime were repeatedly revisited, refined, delayed, and blocked alternatively by industry or skeptical agency political appointees.⁸⁰ MMS thus never achieved the reform of its regulatory oversight of drilling safety consonant with practices that most other countries had embraced decades earlier.

Industry served as an initial impediment to MMS reform efforts—and has largely remained so. In late 1991, the American Petroleum Institute asked the agency to postpone action in order to allow the institute itself to develop an offshore safety standard.⁸¹ MMS agreed, and actively participated in the institute's committee-based process over the next two years. The American Petroleum Institute's "recommended practice" guidance document was published in May 1993—the same month that the UK Safety Case regulations came into force.⁸² Missing from the first edition of the Institute's guideline, however, was a key element of standard process safety management⁸³—nor did it even cover drilling rigs,⁸⁴ clearly an integral element in operating offshore.

MMS announced in June 1994 that it would continue evaluating the new safety concept for two additional years in order to determine whether it should be mandated⁸⁵—a deadline it soon extended by yet another year, delaying a final decision until late 1997.⁸⁶ In the meantime, the agency urged companies to adopt safety and environmental management systems voluntarily, and hinted that wide industry participation might prevent a formal rulemaking.⁸⁷

By this time, there appears to have been a working assumption within both the agency and the industry it was charged with overseeing that technological advances had made equipment remarkably reliable. As one MMS official put it in 1996, conceding that the best the agency could do with available resources was to encourage voluntary compliance with SEMP, "We want to approach our relationship with the offshore industry more as a partner than a policeman. We need to create an atmosphere where the primary concern is to fix the problem, not the blame"—an apt characterization for a period of "regulatory reform" in Congress and fiscal restraint nationwide.⁸⁸

Holy Grail or Poisoned Chalice? The MMS voluntary approach to risk assessment was met with skepticism by regulators in the North Sea. At a May 1996 industry forum in Houston, Texas, an official with the UK Health and Safety Executive (HSE) compared the two safety regimes in a presentation titled *US Voluntary SEMP Initiative: Holy Grail or Poisoned Chalice?* "Last year, with the safety cases of most UK rigs already accepted well ahead of the deadline, IADC [the International Association of Drilling Contractors] told us they were pleased to be operating a premium fleet in North Sea and that HSE was not to think of relaxing the safety case requirements." By contrast, he described the voluntary SEMP scheme as an unrealistic halfway position, while noting that "both the US and the UK need more time to find out which way provides the best lasting effect."⁸⁹

Almost a decade later, MMS was no more successful when it tried to resurrect movement toward even a weakened version of a safety and environmental management rule. In May 2006, when MMS finally proposed a rule on "Safety and Environmental Management Systems"—the successor to the long-moribund SEMP initiative—its proposed rule was limited in its reach. The proposal would have required that only 4 of the 12 widely accepted elements of industrial process safety management be put into place. Industry opposition even to this watered-down proposal was swift. And, ultimately, it was only after the Macondo well blowout four years later that the federal agency finalized a more comprehensive, mandatory SEMP rule.

Other MMS regulatory initiatives critical to safety faced strong and effective opposition. In 2003, the White House stiffly opposed MMS's efforts to update its requirements for the reporting of key risk indicators.⁹⁰ (MMS had proposed that *all* unintentional gas releases be reported, because even small gas leaks can lead to explosions.⁹¹) "It was like pulling teeth," one senior MMS official involved with the process told the Commission: "We never got positive cooperation" from either industry or the Office of Management and Budget.⁹² The Offshore Operators Committee, an industry association, vehemently objected that the requirement would be too burdensome and not conducive to safety; MMS disagreed, yet the final rule in 2006 mandated that a gas release be reported to MMS only if it resulted in an "equipment or process shut-in," or mechanical closure—a much less complete standard.⁹³

Safety Regulation on a Starvation Diet

During the 1990s, the resources available to MMS decreased precipitously just as it faced a dramatic increase in the offshore activity it was charged with overseeing—and matters only deteriorated thereafter. Perversely, MMS's budget reached its lowest point in November 1996,⁹⁴ just as major development activities in deepwater were expanding. That December, the *Houston Chronicle* reported with tragic detail an 81 percent increase in offshore fires, explosions, and blowouts in the Gulf since 1992.⁹⁵ The oil and gas industry drilled a record number of Gulf wells in 1997—many in deepwater.⁹⁶ By 1999, oil production from deepwater eclipsed production from shallow water for the first



FIGURE 3.3: MMS Budget and Gulf of Mexico Crude Oil Production, 1984-2009

Sources: "Budget Division: Congressional Budget Justifications," Bureau of Ocean Energy Management, Regulation, and Enforcement, http://www.boemre.gov/adm/budget.html; Minerals Management Service, *Deepwater Gulf of Mexico 2009: Interim Report of 2008 Highlights,* (May 2009), 71-72, http://www.gomr.boemre.gov/PDFs/2009/2009-016.pdf; U.S. Energy Information Administration, *This Week in Petroleum: Production, Proved Reserves and Drilling in the Ultra-Deepwater Gulf of Mexico,* (May 26, 2010), http://www.eia.gov/oog/info/twip/ twiparch/100526/twipprint.html.

In the last twenty years, MMS's leasing, environmental, and regulatory budget decreased or remained static while deepwater oil production in the Gulf of Mexico boomed. Note: OEMM (Office of Energy and Minerals Management) has responsibility for renewable energy, leasing and environmental, resource evaluation, regulatory, and information management programs. It does not include revenue management or general administration.

time.⁹⁷ Oil production in the Gulf grew from 275 million barrels in 1990 (when only 4.4 percent of that volume came from deepwater wells) to 567 million barrels in 2009 (when deepwater wells yielded more than 80 percent of the total).⁹⁸

Changing technology and changing industry structure outpacing regulations. As

MMS's resources lagged behind the industry's expansion into deepwater drilling—with its larger-scale and more demanding technology, greater pressures, and increasing distance from shore-based infrastructure and environmental and safety resources—the agency's ability to do its job was seriously compromised.⁹⁹ Of particular concern, MMS was unable to maintain up-to-date technical drilling-safety requirements to keep up with industry's rapidly evolving deepwater technology. As drilling technology evolved, many aspects of drilling lacked corresponding safety regulations. The regulations increasingly lagged behind industry and what was happening in the field.

When industry contended that blowout-preventer stacks—the critical last line of defense in maintaining control over a well—were more reliable than the regulations recognized, warranting less frequent pressure testing, MMS conceded and halved the mandated Drill Pipe



Waiting their turn, lengths of colored drill pipe stack up aboard a Transocean rig. Independent studies suggest that failures of crucial blowout preventer components could be caused in part by industry-driven changes to drill-pipe strength and configuration.

Derick E. Hingle/Bloomberg via Getty Images

frequency of tests.^{100*} Soon afterward, a series of third-party technical studies raised the possibility of high failure rates for the blowout preventers' control systems, annular rams, and blind-shear rams under certain deepwater conditions and due to changes in the configuration and strength of drill pipe used by industry.¹⁰¹ Two studies commissioned by MMS found that many rig operators, by not testing blowout preventers, were basing their representations that the tool would work "on information not necessarily consistent with the equipment in use."¹⁰² Yet, MMS never revised its blowout-preventer regulations nor added verification as an independent inspection item in light of this new information.¹⁰³

Nor did MMS adapt its regulatory framework in response to significant ways in which the oil and gas industry has changed over time. In particular, the industry has witnessed a rise in specialized service contractors, such as Halliburton and Transocean that serviced BP at the Macondo well. When the lessee directly regulated by the government is itself

not performing many of the activities critical to well safety, that separation of functions poses heightened challenges for the regulator. But there was no apparent effort by MMS to respond to those challenges by making the service companies more accountable.

Permit "shopping." With increasing industry activity, MMS regulators could not possibly keep pace. The oil and gas industry works 24/7, but MMS regulators generally work regular office hours, requiring "on-call" responsibility to be assigned to individual senior engineers. Those engineers, however, work at a marked disadvantage because they cannot gain access to the permit database from off-site locations due to security concerns.¹⁰⁴ Even during normal business hours, the Gulf of Mexico office lacks a sufficient number of engineers to process permit reviews with necessary scrutiny. From 2005 to 2009, the number of applications for drilling permits in just the MMS New Orleans District increased 71 percent: from 1,246 to 2,136.¹⁰⁵ Without enough engineers in the Gulf of Mexico district office to process all the applications, some operators literally "shop around." They "contact district offices outside the appropriate jurisdictional area . . . to find an engineer who will eventually give approval."¹⁰⁶

Inspections forgone. Not surprisingly, with diminished resources, MMS inspections became less effective, as the Interior Department's Inspector General reported in 1999.¹⁰⁷



FIGURE 3.4: MMS Inspections in the Gulf of Mexico, 1990-2009

Source: Bureau of Ocean Energy Management, Regulation, and Enforcement data upon National Commission Staff request to the Department of the Interior.

"Unannounced" or surprise inspections of offshore oil and gas activity grew increasingly rare over time. Less than 3% of MMS inspections conducted in 2009 were unannounced.

The frequency of unannounced inspections plummeted.¹⁰⁸ Although the raw incident data are online, MMS last produced an analysis of offshore incidents—critical data for promoting the safety of offshore operations—for calendar year 2000.¹⁰⁹ And MMS's progressive reduction in oversight relative to the level of industry activity occurred just as the industry struggled to find highly trained staff needed to work the expanding population of deepwater drilling rigs.¹¹⁰ Precisely when the need for regulatory oversight intensified, the government's capacity for oversight diminished.

Overlaps and "underlaps." The lack of resources extended beyond MMS. The United States Coast Guard is responsible for regulating the "safety of life and property on Outer Continental Shelf (OCS) facilities, vessels, and other units engaged in OCS activities."¹¹¹ Because most drilling rigs and even some production platforms fall under the definition of "vessels," part of the responsibility for regulating their safe operation (and full authority for certifying their seaworthiness) is within the jurisdiction of the Coast Guard.¹¹² But just when the need for Coast Guard oversight increased during the 1990s—as industry drilled in deeper waters farther offshore and used more ambitious floating drilling and production systems—it, too, faced more severe budgetary restraints. Accordingly, the Coast Guard failed to update its marine-safety rules—the last major revision was in 1982¹¹³—to reflect the industry's new technology. The resource plight worsened further following the terrorist attacks of September 11, 2001, given the nation's overriding need to focus on border and port security. The Coast Guard's "solution"—to transfer much of

its responsibility for fixed platform safety to MMS in 2002¹¹⁴—eerily echoed earlier cycles of expanding MMS's mandate in the face of inadequate resources, stretching its capabilities thinner still. The practical effect of the Coast Guard and MMS's shared responsibility for offshore safety has been the presence of "overlaps" in jurisdiction that have required the renegotiation of informal interagency agreements ever since 1989—the continuance of which has left MMS with "underlaps" in resources.¹¹⁵

The Culture of Revenue Maximization

When Interior Secretary Watt moved regulatory oversight of offshore energy exploration and production to a new entity that was also responsible for collecting revenue from the activity it regulated, he created a new agency that inexorably came to be dominated by its focus on maximizing that revenue.

For at least the past 15 years, every former MMS Director has freely acknowledged that the royalty issues have taken most of the Director's time—at the expense of offshore regulatory oversight.¹¹⁶ In 1995, as the United States faced global competition for oil exploration and development capital during a period of low prices, Congress enacted the Deep Water Royalty Relief Act.¹¹⁷ It provided a suspension of royalty payments on a portion of new production from deepwater operations.

But when prices and volumes increased, the sheer amount of money at stake—literally billions of dollars (MMS total onshore and offshore revenues for 2008 were \$23 billion¹¹⁸)—compelled even greater attention, as the White House, members of Congress, and certainly the states each advanced competing notions of how those sums might best be spent.* Litigation, new regulations, and legislation designed to increase one party's relative share of such massive sums have been a constant feature of managing the flow of royalties from onshore and offshore energy production. Such disputes have invariably been controversial, politically sensitive, and time-consuming for MMS decisionmakers.¹¹⁹

Agency leadership and technical expertise. Agency personnel naturally look to agency leadership to signal what constitutes their primary mission, including the expertise and experience that such leaders bring with them. In the case of MMS, those signals were profoundly disturbing, yet nonetheless consistent over time. No one who has led MMS since it was created almost 30 years ago has possessed significant training or experience in petroleum engineering or petroleum geology, or any significant technical expertise related to drilling safety.

In the absence of a clear statement from the top about the necessity for such expertise to ensure drilling safety, it should be no surprise that MMS personnel have suffered from the loss of essential expertise throughout their ranks. Indeed, the lack of requisite training is abysmal. According to a recent survey conducted at the request of the Secretary of the Interior, "[a]lmost half of the [MMS] inspectors surveyed do not believe they have received sufficient training." MMS, unlike Interior's Bureau of Land Management (which

^{*} Because of a bureaucratic mistake within Interior, however, federal lease sales held in 1998 and 1999 failed to include price thresholds in each lease, meaning that those lessees received relief from royalty payments even though higher oil prices made such relief wholly unnecessary. The Government Accountability Office has estimated that the error could cost the government at least \$10 billion and perhaps as much as \$80 billion. Government Accountability Office, "Oil and Gas Royalties – Royalty Relief Will Likely Cost the Government Billions, but the Final Costs Have Yet to Be Determined" (January 18, 2007), 3, 5.

inspects onshore oil and gas drilling operations), has no "oil and gas inspection certification program" and no exam "is required of each inspector in order to be certified." MMS "does not provide formal training specific to the inspections process, and does not keep up with changing technology. Some inspectors noted that they rely on industry representatives to explain the technology at a facility."¹²⁰

The Macondo well blowout makes all too clear the cost of such a departure from the standards of excellence that the nation expects from its public servants. As described in Chapter 4, the MMS personnel responsible for reviewing the permit applications submitted to MMS for the Macondo well were neither required nor prepared to evaluate the aspects of that drilling operation that were in fact critical to ensuring well safety. The regulations did not mandate that MMS regulators inquire into the specifics of "rupture disks," "long string" well designs, cementing process, the use of centralizers, lockdown sleeves, or the temporary abandonment procedures (see Chapter 4). And, no doubt for that same reason, the MMS personnel responsible for deciding whether the necessary drilling permits were granted lacked the expertise that would have been necessary in any event to determine the relative safety of the well based on any of these factors.*

Agency integrity and pockets of corruption. The preoccupation with revenues did not merely divert MMS leaders' attention from drilling safety. It also allowed the ethical culture to degenerate in a few isolated offices, leading to serious charges of abuse of government authority and even charges of criminal misconduct by a few individuals. This conduct was far removed from the daily work of almost all those agency personnel who performed regulatory oversight of offshore drilling. But the conduct of a few working elsewhere in the agency unfairly cast a cloud over the agency as a whole, especially in the immediate aftermath of the Macondo well blowout, providing a ready reminder of the critical importance of public trust in the management of the nation's resources.

The most notorious example arose from the "royalty in kind" program, based in Denver, Colorado. Under the program, MMS exercised its option to accept royalty payments "in kind" rather than in cash.⁺ A September 2008 Inspector General's report implicated more than a dozen employees in the Denver royalty-in-kind office in unethical and criminal conduct.¹²¹ Those MMS staff had also socialized with, and received a wide array of gifts from, companies with whom they were conducting business. The Inspector General further acknowledged that although "99.9 percent of [Interior] employees are hard-working, ethical, and well-intentioned[,] . . . the conduct of a few has cast a shadow on an entire bureau."¹²²

Nor was unethical conduct limited to MMS's revenue collections. It extended to some of those who worked on overseeing offshore oil and gas activities in the Gulf of Mexico. An Inspector General's investigation in 2010 revealed that prior to 2007, "a culture of

⁺The royalty-in-kind program allowed MMS to market the natural gas or oil to establish a reference against which it could evaluate industry reports of their market value.

^{*} See, e.g., Written submission to the National Commission from MMS permitting official, November 5, 2010 ("I did not know they were using nitrogen foamed cement. []] twould not have mattered under the regulations. We do not do any evaluations of types of cement.") *id.* ("I do not recall them informing me as to why they decided not to drill to that length. We do not need an explanation as to why a well is not drilled to the proposed depth.").; *id.* ("At the time I reviewed the APD [drilling permit application], my knowledge of rupture disks was limited to what I had learned from the previous drilling engineer when working with him learning the review process."); *id.* ("I did not receive training on lock down sleeve setting procedures.").

accepting gifts from oil and gas companies was prevalent throughout the MMS Lake Charles[, Louisiana] office." "[A] number of MMS employees at th[at] district office admitted to attending sporting events prior to 2007 in which oil and gas production companies sponsored teams, as well as receiving lunches and accepting gifts." The investigation found that one employee had conducted inspections on a company's oil platforms while in the process of negotiating (and later accepting employment) with the company.¹²³ Here again, the actions of a few damaged the reputation of the agency as a whole, and demoralized the vast majority of MMS employees who avoided such conflicts.¹²⁴ In January 2009, only days after taking office, Secretary Salazar met with MMS employees and announced an ethics reform initiative in response to the problems identified at MMS and elsewhere in the agency.¹²⁵

Mismanagement and Misdirection

Perhaps because of the cumulative lack of adequate resources, absence of a sustained agency mission, or sheer erosion of professional culture within some offices, MMS came progressively to suffer from serious deficiencies of organization and management: the fundamental traits of any effective institution. According to the Outer Continental Shelf Safety Oversight Board,* MMS lacks "a formal, bureau-wide compilation of rules, regulations, policies, or practices pertinent to inspections, nor does it have a comprehensive handbook addressing inspector roles and responsibilities." As a result, the Board concluded, "policies and enforcement mechanisms vary among the [Gulf of Mexico] districts and the regions, and there is no formal process to promote standardization, consistency, and operational efficiency."¹²⁶

The Safety Oversight Board singled out MMS's handling of inspections for pointed criticism. For example, management promoted inspections by single inspectors in order to increase the total number of inspections, even though "most inspectors interviewed said that two-person teams would increase efficiencies, eliminate reliance on an operator representative for observations on safety tests, improve the thoroughness of the inspection, and reduce the ability of operators to successfully pressure an inspector not to issue [a citation]." The Board's interviews revealed "staff concerns regarding a perceived emphasis on the quantity rather than quality of inspection."¹²⁷

The agency's management shortcomings were underscored, and compounded, by lack of communication and inconsistencies among its three regional offices for the Gulf of Mexico, the Pacific, and Alaska. The directors of each regional office naturally adapted practices to best suit the specific characteristics and needs of the region. But by acting in parallel fashion, with little coordination in decisionmaking and resource allocation, program implementation, regulatory interpretation, and enforcement policies became inconsistent, undermining the integrity of MMS's work.¹²⁸ For example, the Safety Oversight Board found that "the Pacific Region employs 5 inspectors to inspect 23 production facilities—a ratio of 1 inspector for every 5 facilities. By contrast, the [Gulf of Mexico Region] employs 55 inspectors to inspect about 3,000 facilities—a ratio of 1 inspector for every 54 facilities." ¹²⁹

^{*} Secretary Salazar created the Outer Continental Shelf Safety Oversight Board in the immediate aftermath of the Macondo well blowout and charged the Board with reviewing the effectiveness of MMS's management. The Board issued its report on September 1, 2010.

Ultimately, MMS was unable to ensure that its staffing capabilities and competencies kept pace with the changing risks and volume of offshore activity. As the Safety Oversight Board concluded, the Gulf of Mexico "district offices did not have a sufficient number of engineers to efficiently and effectively conduct permit reviews."¹³⁰ As the Chief of the U.S. Geological Survey's Conservation Division had warned nearly 30 years earlier,¹³¹ salaries—for engineers stuck in the midranges of the federal pay scale—were far too low to attract individuals possessing the experience and expertise needed to oversee the increasingly complicated oil and gas drilling activities in the deepwater Gulf.¹³² At the most elementary level, MMS frequently lacked defined qualifications that new employees must meet before they start performing their jobs, or clear procedures for on-the-job training. The Board report further observed that the "amount of time and the structure of this training vary from office to office and from inspector to inspector," and it concluded that the on-the-job training "does not address the need for substantive, consistent training in all aspects of the job."¹³³

An Environment Unfavorable to Responsible Drilling

Erosion of Environmental-Protection Safeguards in the Gulf of Mexico

Even as oversight of drilling safety became less effective while the industry pursued more demanding deepwater plays in the Gulf of Mexico, environmental safeguards eroded, too—putting the rich natural resources of the Gulf waters and the surrounding coasts at increasing risk.

The legislative promise. The 1978 Outer Continental Shelf Lands Act Amendments promised full consideration of concerns for environmental protection. The Act provides that "[m]anagement of the outer Continental Shelf shall be conducted in a manner which considers economic, social, and environmental values of the renewable and nonrenewable resources contained in the outer Continental Shelf, and the potential impact of oil and gas exploration on other resource values of the outer Continental Shelf and the marine, coastal, and human environments."¹³⁴ It further requires that the timing and location of exploration, development, and production of oil and gas take environmental factors into consideration, including: existing ecological characteristics; an equitable sharing of development benefits and environmental risks among the regions; the relative environmental sensitivity and marine productivity of areas; and relevant environmental and predictive information.¹³⁵ Based on an evaluation of these and other factors, the Act directs the Secretary of the Interior to select the "timing and location of leasing, to the maximum extent practicable, so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone."136

A host of other laws, many enacted by Congress during the 1970s surge of environmental legislation, buttress these promised priorities. Of particular relevance to oil and gas leasing on the outer continental shelf is the National Environmental Policy Act requirement that federal agencies prepare environmental impact statements for all major federal actions

significantly affecting the human environment.¹³⁷ Those detailed statements must include not only discussion of the immediate adverse impacts on the natural environment that might result from the federal action, but also the "socio-economic"* effects of those impacts.¹³⁸ The Magnuson-Stevens Fishery Conservation and Management Act requires agencies to analyze the potentially adverse impacts of oil and gas activities on fish habitat and populations, and provide conservation measures to mitigate those impacts.¹³⁹ The Endangered Species Act requires federal agencies to determine the potential adverse impact of oil and gas activities on endangered and threatened species, limits activities that harm individual members of such species, and bars altogether activities that place such species in jeopardy.¹⁴⁰ The Marine Mammal Protection Act imposes limits on activities that injure or even harass marine mammals.¹⁴¹ The National Marine Sanctuaries Act requires consultations to guard against harm to marine sanctuary resources from oil and gas leasing activities.¹⁴² The federal Clean Water Act imposes permitting requirements on any discharge of pollutants into navigable waters from such activities.¹⁴³ And, the Oil Pollution Act of 1990,¹⁴⁴ supplemented by a Presidential Executive Order,¹⁴⁵ imposes a panoply of oil-spill planning, preparedness, and response requirements on fixed and floating facilities engaged in oil and gas exploration, development, and production on the outer continental shelf.

Promise vs. practice. But some of these apparent statutory promises dim upon closer examination. The Outer Continental Shelf Lands Act routinely requires consideration of environmental protection concerns in leasing location and timing—but ultimately gives the Secretary of the Interior tremendous discretion in deciding what weight to give those concerns.¹⁴⁶ The balance ultimately struck depends largely on the politics of the moment. The Secretary can assign significant weight to environmental protection concerns—or not.

And in fact, parts of the 1978 Act arguably stack the deck *against* full consideration of environmental concerns. For instance, the law provides that the Secretary must approve a lessee's exploration plan within 30 days of submission.¹⁴⁷ If environmental review is to occur after plan submission, that timetable effectively precludes the kind of exacting review necessary to ensure that the Act's environmental safeguards can be achieved. It would, in effect, be a statement by Congress that the rush to energy exploration is too important to be delayed.

The Act also expressly singles out the Gulf of Mexico for less rigorous environmental oversight under NEPA. As a result of political compromise with oil and gas interests, the Act exempts lessees from submitting development and production plans (which include environmental safeguards) for agency approval. Accordingly, Gulf leases, unlike those applicable to other offshore areas, are not subject to the requirement of at least one NEPA environmental impact statement for development plans for a particular geographic area.¹⁴⁸

None of the other statutes includes such a stark exception, but their effects still are more limited than it might at first seem. For instance, both the Endangered Species Act and the

As the Macondo well blowout makes clear, the socio-economic effects of an oil spill are hardly an incidental concern. As described in Chapter 6, the economic costs of the spill to the Gulf states can be measured in the billions of dollars. Yet absent careful NEPA review, there are no assurances that these potential consequences of a decision to lease, explore, develop, or drill in any given location will be carefully considered by the governmental decisionmaker before the decision is made.

Clean Water Act impose tough substantive limits on activities. But each has only a narrow, discrete focus and statutory trigger: threats to endangered or threatened species or their critical habitat under the Endangered Species Act or, under the Clean Water Act, only the incidental aspects of oil and gas activities that discharge pollutants into navigable waters (unless, of course there is an oil spill).

Neither the Magnuson-Stevens Act nor the Marine Sanctuaries law imposes any mandatory substantive limitation on oil and gas activities offshore. Each instead authorizes the National Oceanic and Atmospheric Administration (NOAA) to make recommendations to MMS about possible adverse environmental impacts (to fish habitat and marine sanctuaries) and appropriate conservation measures. Congress clearly assigned NOAA this central role because it is the federal agency most expert on ocean science and has a clear mission to serve as the steward safeguarding the nation's ocean resources. But, notwithstanding that assignment, neither law provides any corresponding obligation on the part of MMS to heed NOAA's advice. MMS can, and has, on occasion given little or no weight to NOAA's views; according to NOAA officials, that causes some NOAA scientists to expend fewer resources on generating such views.

As a result, although the various laws create the potential for comprehensive environmental protection in oil and gas drilling on the outer continental shelf, neither alone nor in combination do any of the laws come close to *ensuring* a reasonable level of overall environmental protection applicable to all aspects of oil and gas activities on the outer continental shelf. Whether they have achieved their statutory objectives has therefore historically depended instead entirely on the discretionary determinations of MMS officials.

Limiting NEPA. The Department of the Interior and MMS also took a series of steps that further limited the potential for NEPA to ensure government decisions were based on full consideration of their environmental consequences. Erosion of NEPA's application to offshore oil and gas activities began, as noted, when Congress exempted a category of leasing activities in the Gulf of Mexico from NEPA review. The Interior Department, however, subsequently took that legislative exemption and unilaterally expanded its scope beyond those original legislative terms.

Although the 1978 Act exempted only the Interior Department's review of a lessee's "development and production plan" from the environmental impact statement process, Interior unilaterally extended that exemption. In January 1981, the Department promulgated final rules declaring that exploration plans in the central and western Gulf of Mexico were "categorically excluded" from NEPA review.* At that same time, the Department also categorically excluded from NEPA review applications to drill wells (for exploration or subsequent development and production of oil and gas) "when said well and appropriate mitigation measures are described in an approved exploration plan, development plan, or production plan."¹⁴⁹ In 1986, MMS scaled back the categorical

^{*} The President's Council on Environmental Quality, which is responsible for the administration of NEPA, has promulgated a regulation that permits agencies to create "categorical exclusions" from NEPA review for categories of minor activities that can be reasonably assumed in advance not to have significant environmental impacts. See 40 C.F.R § 1508.4.

exclusion to account for the possibility that NEPA review would be needed for these activities in certain narrowly defined "extraordinary circumstances." Extraordinary circumstances include those actions that have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks.¹⁵⁰

But because MMS personnel were apparently reluctant to conclude that such extraordinary circumstances were present, the rule in practice in the Gulf of Mexico was the categorical *exclusion*—rather than the *exception* to that exclusion. MMS staff have reported that leasing coordinators and managers discouraged them from reaching conclusions about potential environmental impacts that would increase the burden on lessees, "thus causing unnecessary delays for operators." The Safety Oversight Board also noted that "[s]ome [MMS] environmental staff also reported that environmental assessments for smaller operators may be minimized if the [Regional Office of Field Operations] manager determines that implementing the recommendation may be too costly."¹⁵¹

With regard to NEPA specifically, some MMS managers reportedly "changed or minimized the [MMS] scientists' potential environmental impact findings in [NEPA] documents to expedite plan approvals." According to several MMS environmental scientists, "their managers believed the result of NEPA evaluations should always be a 'green light' to proceed." In some cases, there may also have been built-in employee financial incentives that "distort[ed] balanced decision-making" to the extent that "[e]mployee performance plans and monetary awards [were] . . . based on meeting deadlines for leasing or development approvals."¹⁵²

Finally, just as a matter of sheer practicality, MMS personnel plainly lacked the substantial resources that would have been required to engage in meaningful NEPA review in light of the extraordinary expansion of leasing activity in the Gulf. There were literally hundreds of exploration, development, and production plans, as well as individual permit drilling applications to be processed. No President ever sought for MMS the level of resources that would have been required to prepare individual assessments concerning whether each of those activities required an environmental impact statement, let alone such a statement for those that did. Nor did Congress. It should be no surprise under such circumstances that a culture of complacency with regard to NEPA developed within MMS, notwithstanding the best intentions of many MMS environmental scientists.

The Macondo Well

The gap between the protections promised by environmental statutes and regulations and actual practice is fully illustrated in the review and permitting of the Macondo well itself. MMS engaged in no NEPA review of the well's permitting, and neither MMS nor other federal agencies gave significant attention to the environmental mandates of other federal laws.

NEPA. MMS performed no meaningful NEPA review of the potentially significant adverse environmental consequences associated with its permitting for drilling of BP's exploratory Macondo well. MMS categorically excluded from environmental impact review BP's initial and revised exploration plans—even though the exploration plan could have qualified for an "extraordinary circumstances" exception to such exclusion, in light of the abundant deep-sea life in that geographic area and the biological and geological complexity of that same area.¹⁵³ MMS similarly categorically excluded from any NEPA review the multiple applications for drilling permits and modification of drilling permits associated with the Macondo well. The justification for these exclusions was that MMS had already conducted NEPA reviews for both the Five-Year Program and the Lease Sale that applied to the Macondo well. The flaw in that agency logic is that both those prior NEPA reviews were conducted on a broad programmatic basis, covering huge expanses of leased areas of which the Macondo well was a relatively incidental part. Neither, moreover, included a "worst case analysis" because the President's Council on Environmental Quality had eliminated the requirement for such analysis under NEPA for all federal agencies in 1986.¹⁵⁴ As a result, none of those prior programmatic reviews carefully considered site-specific factors relevant to the risks presented by the drilling of the Macondo well.*

Fishery conservation and management. Under the Magnuson-Stevens Fishery Conservation and Management Act, federal agencies must consult with NOAA on all activities (or proposed activities) authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat. For the Gulf of Mexico, accordingly, NOAA prepared a "programmatic" Essential Fish Habitat Consultation for the entire Gulf.¹⁵⁵ To similar effect, MMS complied with the Magnuson-Stevens consultation requirement by preparing Essential Fish Habitat Assessments that looked at offshore oil and gas leasing activities in the Gulf broadly.¹⁵⁶ Neither NOAA nor MMS considered the possible adverse impacts of any one well, such as the Macondo well, in isolation. Nor would it have been practical for them to do so in light of their understandable focus on possible cumulative impacts on fish populations from many offshore leasing activities. What is more telling, however, is that to the extent that the MMS Assessment identified potential threats to essential fish habitat and marine fishery resources from oil spills, both NOAA and MMS ultimately relied exclusively on conservation measures included in oil-spill response plans prepared by the oil and gas industry pursuant to the Oil Pollution Act of 1990 to address those threats.¹⁵⁷ For the Macondo well, both agencies assumed that BP's plan would adequately address those threats and therefore there was no need to seek to do so directly through the Magnuson-Stevens Act. There was, however, little reason to assume that those plans were in fact up to the task.

Oil Pollution Act of 1990 and Oil Spill Response Plans. Under the Oil Pollution Act of 1990, as supplemented by a Presidential Executive Order, MMS is responsible for oilspill planning and preparedness as well as select response activities for fixed and floating facilities engaged in exploration, development, and production of liquid hydrocarbons and for certain oil pipelines. The agency requires all owners or operators of offshore oil-handling, storage, or transportation facilities to prepare Oil Spill Response Plans. MMS regulations detail the elements of the response plan (an emergency-response action plan, oil-spill response equipment inventory, oil-spill response contractual agreements, a

* For instance, bluefin tuna are both commercially vital and biologically significant as predators in the Gulf. But in the relevant Five-Year (2007–2012) Programmatic Environmental Impact Statement on the entire offshore leasing program—covering the *entire* outer continental shelf of the United States—MMS discusses potential impacts of leasing activities on bluefin tuna in one sentence. Subsequent MMS environmental impact statements for lease sales within the Gulf of Mexico contained *no* significant or geographically-focused analysis of the potential impacts on bluefin tuna. And, in finally permitting the drilling of the Macondo well, MMS categorically excluded the action from any NEPA review, and thus conducted no analysis of the potential impacts of drilling on bluefin tuna, based on the rationale that it had already adequately reviewed environmental impacts in its prior reviews. calculation of the worst-case discharge scenario, plan for dispersant use, in-situ burning plan, and information regarding oil-spill response training and drills).¹⁵⁸ The emergency-response plan is supposed to be the core of the overall plan, and in turn is required to include information regarding the spill-response team; the types and characteristics of oil at the facilities; procedures for early detection of a spill; and procedures to be followed in the case of a spill.¹⁵⁹

But neither BP, in crafting its Oil Spill Response Plan for the Gulf of Mexico applicable to the Macondo well, nor MMS in approving it, evidenced serious attention to detail.¹⁶⁰ For instance, the BP plan identified three different worst-case scenarios that ranged from 28,033 to 250,000 barrels of oil discharge and used identical language to "analyze" the shoreline impacts under each scenario.¹⁶¹ To the same effect, half of the "Resource Identification" appendix (five pages) to the BP Oil Spill Response Plan was copied from material on NOAA websites, without any discernible effort to determine the applicability of that information to the Gulf of Mexico. As a result, the BP Oil Spill Response Plan described biological resources nonexistent in the Gulf—including sea lions, sea otters, and walruses.*

Even more troubling, the MMS Gulf of Mexico Regional Office approved the BP plan without additional analysis. There is little in that approval to suggest that BP and MMS gave close scrutiny to the contents of the Oil Spill Response Plan. The Regional Office's routine practice was to review and approve oil-spill response plans within 30 days of their receipt. Absent any legal requirement to do so, the office did not distribute submitted plans to other federal agencies for review or comment, nor did it seek public review or comment.

The inescapable conclusion is striking, and profoundly unsettling. Notwithstanding statutory promises of layers of required environmental scrutiny—by NEPA, the Magnuson-Stevens Act, the Outer Continental Shelf Lands Act, and the Oil Pollution Act—and the potential application of some of the nation's toughest environmental restrictions—the Endangered Species Act and Clean Water Act—*none* of these laws resulted in site-specific review of the drilling operations of the Macondo well. The agency in charge, MMS, lacked the resources and committed agency culture to do so, and none of the other federal agencies with relevant environmental expertise had adequate resources or sufficient statutory authority to make sure the resulting gap in attention to environmental protection concerns was filled.⁺

Federal oversight of oil and gas activities in the Gulf of Mexico—almost the only area where substantial amounts of drilling were taking place—took a generally minimalist approach in the years leading up to the Macondo explosion. The national government failed to exercise the full scope of its power, grounded both in its role as owner of the natural resources to be developed and in its role as sovereign and responsible for ensuring the safety of drilling operations. Many aspects of national environmental law

The BP plan does not appear to be an aberration. It was prepared by a contractor who also prepared the Gulf of Mexico plans for Chevron, ConcoPhillips, ExxonMobil, Shell, and other companies operating in the Gulf. The result is four nearly identical plans that repeat the same mistakes found in the BP plan applicable to the Macondo well.

⁺ The President's decision in March 2010 to expand offshore oil and gas leasing is a more recent example of the absence of full consideration of environmental protection concerns. According to their testimony before the Commission in August 2010, the White House did not ask either the Chair of the President's Council on Environmental Quality or the Administrator of NOAA to be directly involved in reviewing the plans before the President's declarst setup of the Honorable Nancy Sutley, Chair, Council on Environmental Quality, and The Honorable Jane Lubchenco, Administrator, NOAA, Hearing before the National Commission, August 25, 2010.

were ignored, resulting in less oversight than would have applied in other areas of the country. In addition, MMS lacked the resources and technical expertise, beginning with its leadership, to require rigorous standards of safety in the risky deepwater and had fallen behind other countries in its ability to move beyond a prescription and inspection system to one that would be based on more sophisticated risk analysis.

In short, the safety risks had dramatically increased with the shift to the Gulf's deepwaters, but Presidents, members of Congress, and agency leadership had become preoccupied for decades with the enormous revenues generated by such drilling rather than focused on ensuring its safety. With the benefit of hindsight, the only question had become not whether an accident would happen, but when. On April 20, 2010, that question was answered.