





Chapter Nine

“Develop options for guarding against, and mitigating the impact of, oil spills associated with offshore drilling.”

Investing in Safety, Investing in Response, Investing in the Gulf

Introduction

The President asked this Commission to “develop options for guarding against, and mitigating the impact of, oil spills associated with offshore drilling”¹ in recognition of the compelling need to balance the nation’s interest in offshore energy resources with protection of our rich marine and coastal environments. To that end, previous chapters of this report have detailed the complex web of decisions, actions, and circumstances

Ugly fallout from the spill, tarballs foul a beach near Venice, Louisiana. The report sets out a broad array of recommendations for action by the federal government to better manage and protect the nation’s offshore energy resources. Two overarching and convergent goals: minimize the risk of another major spill along with its economic and environmental consequences—and be prepared when it happens.

< Win McNamee/Getty Images

that set the stage for the BP *Deepwater Horizon* disaster. Among the chief actors in that web was the government itself, which played a key role both in setting the policies that shaped offshore oil and gas activities in the Gulf over the course of many decades, and in overseeing responses to the spill once it began.

This chapter presents the Commission's recommendations for addressing the causes and consequences of the spill with a focus on the government's role (recommendations targeted to industry are presented in Chapter 8). The recommendations reflect the government's sweeping sovereign authority as both owner of the seabed and water column and as the regulator of activities, with the overriding responsibility to manage and protect the valuable resources of the Outer Continental Shelf (OCS) on behalf of current and future generations of Americans. They are grouped in seven distinct areas:

- A. Improving the Safety of Offshore Operations
- B. Safeguarding the Environment
- C. Strengthening Oil Spill Response, Planning, and Capacity
- D. Advancing Well-Containment Capabilities
- E. Overcoming the Impacts of the *Deepwater Horizon* Spill and Restoring the Gulf
- F. Ensuring Financial Responsibility
- G. Promoting Congressional Engagement to Ensure Responsible Offshore Drilling

The sections that follow summarize the context and rationale for each of the Commission's specific recommendations. Other chapters of this report, as well as staff working papers published by the Commission and available at www.oilspillcommission.gov,* provide additional detail and further support for the recommendations. Chapter 10 presents additional recommendations concerning the future of offshore drilling, including prospective drilling in the Arctic.

A. Improving the Safety of Offshore Operations

As detailed in Chapters 3 and 4, and in staff working papers, federal efforts to regulate the offshore oil and gas industry have suffered for years from cross-cutting purposes, pressure from political and industry interests, a deepening deficit of technical expertise, and severely inadequate resources available to the government agencies tasked with the leasing function and regulation. In the aftermath of the *Deepwater Horizon* oil spill, the Department of the Interior has already taken a series of significant and important steps to improve regulatory oversight of offshore drilling. But given the deep-rooted problems that had existed at the Department's Minerals Management Service (MMS) before the spill occurred, and the near certainty that the oil and gas industry will seek to expand into ever more challenging environments in the years ahead, a more comprehensive overhaul of both leasing and the regulatory policies and institutions used to oversee offshore activities is required. The necessary overhaul, to be successful, must address three core issues: (1) reducing and managing risk more effectively using strategies that can keep pace with a technologically

* A list of staff working papers can be found in Appendix F.

complex and rapidly evolving industry, particularly in high-risk and frontier areas; (2) assuring the independence and integrity of government institutions charged with protecting the public interest; and (3) securing the resources needed to provide a robust capability to execute the leasing function and adequate regulatory oversight.

1. The Need for a New Approach to Risk Assessment and Management

As described in Chapter 3 and staff working papers, neither the industry's nor the federal government's approaches to managing and overseeing the leasing and development of offshore resources have kept pace with rapid changes in the technology, practices, and risks associated with the different geological and ocean environments being explored and developed for oil and gas production. Nor do these approaches reflect the significant changes that have occurred in the structure of the oil and gas industry itself—especially the rise of specialized service contractors and the general trend toward outsourcing multiple functions. When the operator directly regulated by the government does not itself perform many of the activities critical to well safety, regulators face additional challenges due to the separation of these functions. However, MMS did not change its regulatory oversight to respond to these industry changes by making the service companies more accountable. In other countries, operators of drilling are required to demonstrate to the regulators their own fitness and risk management systems.

Also missing has been any systematic updating of the risk assessment and risk management tools used as the basis for regulation. MMS attempted under several administrations to promulgate regulations that would have required companies to manage all of their activities and facilities, and those of their contractors, under a documented Safety and Environmental Management System (SEMS). But, in the face of industry opposition, MMS did not adopt such a requirement until September 2010, after the BP *Deepwater Horizon* disaster. Industry objections also derailed a past MMS proposal to expand data reporting requirements as part of an effort to track and analyze offshore incidents and to identify safety trends and lagging and leading indicators. The proposal was abandoned when the Office of Management and Budget agreed with industry complaints about compliance cost (industry also complained about the potential for overlap with Coast Guard reporting requirements). As a result, there has historically been no legal requirement that industry track or report instances of uncontrolled hydrocarbon releases or “near misses”—both indicators that could point to a heightened potential for serious accidents. The United States has the highest reported rate of fatalities in offshore oil and gas drilling among its international peers, but it has the lowest reporting of injuries. This striking contrast suggests a significant under-reporting of injuries in the United States and highlights the need for better data collection to ensure needed attention to worker safety.

Government agencies that regulate offshore activity should reorient their regulatory approaches to integrate more sophisticated risk assessment and risk management practices into their oversight of energy developers operating offshore. They should shift their focus from prescriptive regulations covering only the operator to a foundation of augmented prescriptive regulations, including those relating to well design and integrity, supplemented by a proactive, risk-based performance approach that is specific to individual facilities,

operations, and environments. This would be similar to the “safety case”^{*} approach that is used in the North Sea, which requires the operator and drilling rig owners to assess the risks associated with a specific operation, develop a coordinated plan to manage those risks, integrate all involved contractors in a safety management system, and take responsibility for developing and managing the risk management process.

To accomplish these goals of creating a new approach to risk assessment and management, the Commission offers the following three recommendations:

Recommendations

A1: The Department of the Interior should supplement the risk-management program with prescriptive safety and pollution-prevention standards that are developed and selected in consultation with international regulatory peers and that are at least as rigorous as the leasing terms and regulatory requirements in peer oil-producing nations.

A2: The Department of the Interior should develop a proactive, risk-based performance approach specific to individual facilities, operations and environments, similar to the “safety case” approach in the North Sea.

A3: Working with the International Regulators’ Forum and other organizations, Congress and the Department of the Interior should identify those drilling, production, and emergency-response standards that best protect offshore workers and the environment, and initiate new standards and revisions to fill gaps and correct deficiencies. These standards should be applied throughout the Gulf of Mexico, in the Arctic, and globally wherever the international industry operates. Standards should be updated at least every five years as under the formal review process of the International Organization for Standardization (ISO).

More specifically, the following actions are needed to truly transition to a proactive, risk-based performance approach:

- Engage a competent, independent engineering consultant to review existing regulations for adequacy and “fit for purpose” as a first step toward benchmarking U.S. regulations against the highest international standards. Following this review, develop and implement regulations for safety and environmental protection that are at least as rigorous as the regulations in peer oil-producing nations. A new regulatory entity for safety and environment (as described below) should ensure that while engaged in petroleum activities all drilling and production platforms are certified and operating at the highest level of international regulatory practice.
- Require operators to develop a comprehensive “safety case” as part of their exploration and production plans—initially for ultra-deepwater (more than 5,000

^{*} The term “safety case” is a shorthand expression for a comprehensive and structured set of safety documentation that provides a basis for determining whether a risk management system for a specific vessel or equipment is adequately safe for a given application in a given environment.

feet) areas, areas with complex geology, and any other frontier or high-risk areas—such as the Arctic. In addition, for lease sales in those and other areas, prospective lessees should be required to demonstrate competence, based on experience, financial capacity, and expertise, as a prequalification for bidding.

- Expand Safety Environmental Management System requirements to include regular third-party audits at three- to five-year intervals and certification. These plans should be expanded for frontier areas to encompass the full range of risk assessment and management.
- For both new and transferred leases, require the operator to participate in a new safety institute or agree to expert audits, and to contribute to safety and environmental research and development. Approval to transfer leases sold prior to this requirement should be conditioned on the new requirements based on risk factors related to the specific requirements of the lease. The lease stipulation should also include the requirement that the operator possess adequate capability to contain and respond to an oil spill, and sufficient financial capacity to compensate for damages caused by a spill.
- To cultivate and maintain government expertise on offshore drilling safety:

(1) Establish a process under the auspices of the National Academy of Engineering to identify criteria for high-risk wells and develop methodology to assess those risks. This process should include, to the extent that the National Academy deems appropriate, input from experts in the U.S. Geological Survey, the Department of Energy, NOAA, and academia. Furthermore, the Department of the Interior should develop in-house competence to perform such sophisticated risk assessments. Such evaluations could guide the transition to a system where all operators and contractors are required to demonstrate an integrated, proactive, risk management approach prior to leases being granted or receiving permits for exploration wells and major development projects. As noted above, these efforts should initially focus on areas with complex geology, ultra-deep water, and any other frontier or high-risk areas—such as the Arctic.

(2) Establish a coordinated, interagency research effort to develop safer systems, equipment, and practices to prevent failures of both design and equipment in the future. The federal government has relevant expertise in areas such as the application of remote sensing and diagnostics, sensors and instrumentation, and command electronics that could and should be transferred to the offshore industry.* The Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Resources Program, an existing research and development program created by statute and managed by the Secretary of Energy, should be refocused toward mitigating the risks of offshore operations.

* Secretary of Energy Steven Chu advised the Commission on the capacity within the Department of Energy, the Nuclear Regulatory Commission, the Federal Aviation Administration and elsewhere in the federal government to undertake sophisticated risk and technology assessments. The Department of Energy and the national laboratories have the depth and breadth of research and technical experience in such areas as high-performance computing, image processing, mechanical/structural stress analysis, complex fluid flow simulations, and other areas that proved instrumental in diagnosing the state of the Macondo well blowout preventer and in assessing plans to stop the leak.

- Develop more detailed requirements for incident reporting and data concerning offshore incidents and “near misses.” Such data collection would allow for better tracking of incidents and stronger risk assessments and analysis. In particular, such reporting should be publicly available and should apply to all offshore activities, including incidents relating to helicopters and supply vessels, regardless of whether these incidents occur on or at actual drilling rigs or production facilities. In addition, Interior, in cooperation with the International Regulators Forum, should take the lead in developing international standards for incident reporting in order to develop a consistent, global set of data regarding fatalities, injuries, hydrocarbon releases, and other accidents. Sharing information as to what went wrong in offshore operations, regardless of location, is key to avoiding such mistakes.
- Lead in the development and adoption of shared international standards, particularly in the Gulf of Mexico and the Arctic. Transparent information and data sharing within the offshore industry and among international regulators is critical to continuous improvement in standards and risk management practices. The United States shares the waters of the Gulf of Mexico and its sub-surface resources with Cuba and the Republic of Mexico. After many decades of declining investment and production in the Mexican part of the Gulf by PEMEX, the national oil company, a recent Mexican Supreme Court ruling has created the opportunity for U.S. and other foreign oil and gas companies to enter Mexican waters. PEMEX has indicated its intention to auction deepwater contracts beginning in 2012. Separately, Cuba has already leased blocks 50 miles off the coast of Florida with reported plans for seven exploration wells by 2014. Agreement on standards for operations should be part of any negotiation to define the maritime boundary between the United States, Mexico, and Cuba in the eastern Gulf of Mexico. The need for international standards for activities in the Arctic is also unquestioned: the United States has already awarded leases in the region and now it is incumbent on the United States to push for such standards.
- Provide protection for “whistleblowers” who notify authorities about lapses in safety. All offshore workers have a duty to ensure safe operating practices to prevent accidents. To ensure all workers, regardless of employer, will take appropriate action whenever necessary, Congress should amend the Outer Continental Shelf Lands Act or specific safety statutes to provide the same whistleblower protection that workers are guaranteed in other comparable settings.

2. The Need for a New, Independent Agency

As described in detail in Chapter 3, primary responsibility for regulating the offshore oil and gas industry prior to the *Deepwater Horizon* accident was consolidated in a single agency, MMS. MMS was not only responsible for offshore leasing and resource management; it also collected and disbursed revenues from offshore leasing, conducted environmental reviews, reviewed plans and issued permits, conducted audits and inspections, and enforced safety and environmental regulations. And though the revenue management and resource management functions of MMS were separated into two distinct divisions, the mingling of distinct statutory responsibilities—each of which

required different skill sets and fostered different institutional cultures—led inevitably to internal tensions and a confusion of goals that weakened the agency’s effectiveness and made it more susceptible to outside pressures.

At the core of this tension was a trade-off between, on the one hand, promoting the “expeditious and orderly development” of offshore resources, as mandated by the Outer Continental Lands Act of 1978, while also ensuring, on the other hand, that offshore development proceeded in a manner that protected human health, safety, and the environment. Over the course of many years, political pressure generated by a demand for lease revenues and industry pressure to expand access and expedite permit approvals and other regulatory processes often combined to push MMS toward elevating the former goal over the latter. At the same time, the fact that MMS lacked either a clearly articulated mission or adequate guidance for balancing its different missions led to inefficient management and a tendency to defer to industry, which successfully sought congressional and political intervention to shorten time frames for plan and permit reviews, blocked royalty valuation rulemakings, and advocated to delay and weaken rules aimed at improving the safety management of operations.

All of these problems were compounded by an outdated organizational structure, a chronic shortage of resources, a lack of sufficient technological expertise, and the inherent difficulty of coordinating effectively with all the other government agencies that had statutory responsibility for some aspect of offshore oil and gas activities. Besides MMS, other offices of the Department of the Interior as well as the Departments of Transportation, Commerce, Defense, and Homeland Security, and the Environmental Protection Agency (EPA) were involved in some aspect of the industry and its many-faceted facilities and operations, from workers on production platforms to pipelines, helicopters, drilling rigs, and supply vessels.

Not surprisingly, the Macondo well failure in April 2010 turned a harsh spotlight on all these bureaucratic inadequacies and shortcomings. And shortly after the accident, Interior Secretary Ken Salazar renamed MMS the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) and announced a plan to split its responsibilities into three separate offices.*

Although the proposed reorganization of Interior’s offshore leasing, safety, and revenue management program represents a significant improvement, it does not adequately address the deeper problem of fully insulating the Department’s safety and environmental protection functions from the pressures to increase production and maximize lease revenues.

* The use of “BOEMRE” will be limited here to actions since MMS was renamed.

Recommendations

A4: Congress and the Department of the Interior should create an independent agency within the Department of the Interior with enforcement authority to oversee all aspects of offshore drilling safety (operational and occupational), as well as the structural and operational integrity of all offshore energy production facilities, including both oil and gas production and renewable energy production.

A5: Congress and the Department of the Interior should provide a mechanism, including the use of lease provisions for the payment of regulatory fees, for adequate, stable, and secure funding to the key regulatory agencies—Interior, Coast Guard, and NOAA—to ensure that they can perform their duties, expedite permits and reviews as needed, and hire experienced engineers, inspectors, scientists, and first responders. (See Recommendation G2.)

The roles and responsibilities of the former MMS should be separated into three entities with clearly defined statutory authorities. One entity would be responsible for offshore safety and environmental enforcement; another would perform functions related to leasing and environmental science; and the third would manage natural resource revenues. The safety and environment enforcement authority or entity, in particular, should have primary statutory responsibility for overseeing the structural and operational integrity of all offshore energy-related facilities and activities, including both oil and gas offshore drilling and renewable energy facilities.

- A new office of safety should consolidate responsibility for safety—including infrastructure and operational integrity, as well as spill prevention and response—for all offshore fossil fuel and renewable resource development activities, structures, and workers. It should be an independent agency housed at the Department of the Interior to facilitate coordination with a new office for leasing and environmental science. Congress should enact an organic act to establish its authorities and responsibilities, consolidating the various responsibilities now under the Outer Continental Shelf Lands Act, the Pipeline Safety Act, and Coast Guard authorizations. The new office should have primary authority over facilities, structures, and units for offshore oil and gas drilling, production, and renewable energy that are engaged in energy-related activities, including authority to establish and enforce specific safety and environmental protection requirements for these units as well as requirements for operators who may be leasing the facilities.
- Congress should review and consider amending where necessary the governing statutes for all agencies involved in offshore activities to be consistent with the responsibilities functionally assigned to those agencies. The safety-related responsibilities of the new offshore safety agency should be included in a separate statute. (Further specifics regarding the Commission's recommended organizational structure for new offices to regulate safety and leasing are discussed below).

- To ensure that Interior has the ability to provide adequate leasing capabilities and regulatory oversight for the increasingly complex energy-related activities being undertaken on the OCS, budgets for these new offices as well as existing agencies should come directly from fees paid by the offshore industry, akin to how fees charged to the telecommunications industry pay for the expenses of the Federal Communications Commission, which is essentially fully funded by such regulated industry payments. Through this mechanism, Congress, through legislation, and Interior, through lease provisions,² could expressly oblige lessees to fund the regulation necessary to allow for private industry access to the energy resources on the OCS, including renewables. Under existing law, the oil and gas industry already pays inspection fees that currently amount to about \$10 million per year or about 3 percent of BOEMRE's annual budget, but this amount can and should be increased significantly. (See Recommendation G2.)

Implementing the Commission's recommendation to reorganize the former MMS into three offices and to enhance these offices' technical capacities will require a sustained effort over a period of years. The President or Interior Secretary should effect this reorganization to the extent possible administratively and request congressional enactment to confirm its permanence and provide for the statutory recognition of a term of office for the director of safety and environmental regulation.

PROPOSED REORGANIZATION OF THE FORMER MINERALS MANAGEMENT SERVICE

Offshore Safety Authority: This office would exercise independent statutory authority over technical and operational safety in all phases of OCS energy resource development projects, including the planning, designing, constructing, operating, and decommissioning of facilities and projects, and will have overall responsibility for fostering safe and environmentally sound offshore energy operations. The new agency would oversee all non-economic aspects of the operations and structures involved in drilling and production of oil and gas, pipelines, and wind towers, wave, tidal, and other renewable technologies located on the federal offshore zone. The new safety and environment authority would also have the lead coordination role in relation to other regulators with independent authority over offshore oil and gas activities, including EPA, NOAA and the Coast Guard.

Key responsibilities include:

- Reviewing and approving (or denying) all permits under exploration, development, and production plans.
- Inspecting all offshore operations by expert teams through scheduled and unannounced inspections.
- Auditing or otherwise requiring certification of operator health, safety, and environmental management systems.

- Evaluating eligibility for lessees based on safety and environmental qualifications.
- Reviewing and approving the safety and feasibility of any environmental mitigation activities prescribed by National Environmental Policy Act (NEPA) documents and other environmental consultations, authorization, or permits in addition to enforcing such requirements over the duration of an operation.
- Collecting and analyzing leading and lagging indicators from all active parties for full risk evaluation.
- Promulgating all structural integrity, process, and workplace safety rules and regulations in order to create a foundation of prescriptive regulations to supplement performance-based (“safety case”) regulations.
- Providing technical review and comment on the five-year leasing program and individual lease sales.
- Providing technical review of spill response and containment plans.
- Reviewing and approving all spill response and containment plans and advising the new safety authority on environmental considerations.
- Investigating all accidents and other significant events that could have potentially turned catastrophic.

The organization and staffing composition should be decided during a transition period, when the areas and activities are analyzed and categorized by risk. The director of the new organization should be a qualified executive with a relevant engineering or technical background, and should be appointed by the President for a five- to six-year term and confirmed by the Senate. In addition, the new agency should have classifications and salary scales for engineering and technical staff and inspectors similar to those of the Nuclear Regulatory Commission.

Leasing and Environmental Science Office: This office would act as the leasing and resource manager for conventional and renewable energy and other mineral resources on the OCS. Charged with fostering environmentally responsible and efficient development of the OCS, the office would ensure that the American people both receive fair market value for the rights conveyed and that the nation’s rich marine environment remains protected. The United States cannot afford a repetition of the kind of contractual drafting mistake that, as described in Chapter 3, is literally costing the nation tens of billions of dollars in lost revenues.

Key responsibilities include:

- Conducting OCS resource planning processes, including the five-year leasing program and individual lease sales.
- Conducting individual lease sales for oil, gas, and renewable energy facilities offshore.
- Promulgating rules and regulations with respect to lease terms, resource access, and use.
- Approving non-engineering or operations aspects of exploration, development, and production plans, subject to review by the new safety authority to ensure no conflicts with permitting requirements for infrastructure and operations.
- Reviewing and approving all spill response and containment plans and advising the new safety authority on environmental considerations.
- Making resource management decisions, such as those related to timing of reservoir abandonment and shared reservoir issues, unitization, commingling, and optimizing oil and gas recovery.
- Reviewing and approving permits for seismic activities.
- Conducting NEPA reviews at all relevant phases and coordinating other environmental reviews when appropriate
- Administering the Environmental Studies Program.

The leasing and environmental science office would include two distinct divisions: a leasing and resource evaluation division and an environmental science division. To provide an important and equitable voice for environmental concerns during the five-year planning process and lease awards, the environmental science division would be structured with a separate line of reporting to the Assistant Secretary overseeing offshore drilling and the environmental science division would be led by a Chief Scientist. The Chief Scientist's responsibilities would include, but not be limited to, conducting all NEPA reviews and coordinating other environmental reviews when appropriate and administering the Environmental Studies Program. The Chief Scientist's expert judgment on environmental protection concerns would be accorded significant weight in the leasing decision-making process, including on questions concerning whether and where leasing should occur and what environmental protection and mitigation conditions should be placed on leases that are issued. The new organization and process would also include enhanced review of environmental decisions and enforcement by the safety authority. It should track all mitigation efforts from NEPA documents and other environmental reviews to assist the new safety authority in its environmental enforcement duties.

Office of Natural Resources Revenue (ONRR): Revenue collection and auditing functions would remain with the Assistant Secretary for Policy, Management, and Budget as per the recent re-organization implemented by Secretary Salazar.

B. Safeguarding the Environment

The adequacy of the existing regulatory regime to assure the environmental safety of offshore drilling (as distinct from worker or occupational safety) has come under a great deal of scrutiny since the *Deepwater Horizon* incident. In its work on this question, the Commission focused on two issues: (1) the application of NEPA requirements to the offshore leasing process and (2) the need for better science and greater interagency consultation to improve decision-making concerning the management of offshore resources.

1. The Need to Revise and Strengthen NEPA Policies and Practices in the Offshore Drilling Context

The Commission has reviewed the leasing and permitting processes that MMS followed in the Gulf of Mexico before the *Deepwater Horizon* incident. The results lead the Commission to conclude that the breakdown of the environmental review process for OCS activities was systemic and that Interior's approach to the application of NEPA requirements in the offshore oil and gas context needs significant revision. In particular, the application of tiering, the use of categorical exclusions, the practice of area-wide leasing, and the failure to develop formal NEPA guidance for the agency all contributed to this breakdown.

Tiering. Under MMS, the NEPA process for offshore oil and gas leasing relied heavily on "tiering"—a practice under which a broad environmental impact statement was used to cover "general matters" across a large area, while issues specific to a particular site or smaller area were addressed through "subsequent narrower statements of environmental analyses."³ Tiering was meant to encourage more thorough reviews at each subsequent stage of the offshore leasing process, and to avoid the duplication of general information that would have been covered in previous environmental reviews. As applied by MMS, however, tiering was not always consistent with its original purpose: instead, it created a system where deeper environmental analysis at more geographically targeted and advanced planning stages did not always take place.

Categorical Exclusions. The Council on Environmental Quality's implementing regulations for NEPA define "categorical exclusions" as "a category of actions which do not individually or cumulatively have a significant effect on the human environment . . . and for which, therefore, neither an environmental assessment nor an environmental impact statement is required."⁴ MMS has historically applied categorical exclusions to both Exploration Plans and Development Operations Coordination Documents⁵ in the Gulf of Mexico. Although there are legitimate differences between the Gulf and other regions of the OCS, the basis for such a wide

disparity in the use of categorical exclusions is questionable. And in the aftermath of the BP *Deepwater Horizon* spill, it is difficult to argue that deepwater drilling is an activity that does not present at least some potentially significant risk of harm to the environment of the Gulf. That is no doubt why, prompted by a comprehensive review of MMS's use of categorical exclusions by the Council on Environmental Quality, Interior announced in August 2010 that it would restrict its use of categorical exclusions for offshore oil and gas development "to activities involving limited environmental risk," while it undertakes a comprehensive review of its NEPA process.⁶

Area-Wide Leasing. OCS lease sales cover such large geographic areas that meaningful NEPA review is difficult. A decision to dramatically increase the size of lease sales—known as area-wide leasing—was made over 20 years ago at the request of industry; it has necessitated environmental analyses of very large areas at the lease sale stage. For example, the Final Environmental Impact Statement for the 2007–2012 multi-lease sales in the Gulf of Mexico covered more than 87 million acres,⁷ while the Final Environmental Impact Statement for Chukchi Sea Lease Sale 193 covered about 34 million acres.⁸ Given that 2008 lease sales in the Central Gulf of Mexico and the Chukchi Sea attracted almost \$3.7 billion and almost \$2.7 billion in high bids, respectively, it is appropriate to conduct environmental reviews on a finer geographic scale before private-sector commitments of this magnitude are made to purchase leases.

NEPA Guidance. Though expected to prepare a handbook on NEPA requirements,⁹ MMS never developed formal NEPA guidance. As the Government Accountability Office noted in a review of the MMS Alaska Region Office: "The lack of a comprehensive NEPA guidance handbook, combined with high staff turnover, leaves the process for meeting NEPA requirements ill-defined for the analysts charged with developing NEPA documents."¹⁰ BOEMRE is currently in the process of developing an internal NEPA guidance document—a step that should ensure a higher level of NEPA consistency and transparency across regions.

Recommendation

B1: The Council on Environmental Quality and the Department of the Interior should revise and strengthen the NEPA policies, practices, and procedures to improve the level of environmental analysis, transparency, and consistency at all stages of the OCS planning, leasing, exploration, and development process.

Interior should take the following steps to strengthen NEPA review of the offshore leasing process:

- The new office of leasing and environmental science should, in consultation with the Council on Environmental Quality, develop and make public a formal NEPA handbook within one year. The handbook should address the issue of tiering and provide guidelines for applying NEPA in a consistent, transparent, and appropriate manner to decisions affecting OCS oil and gas activities.

- Interior should require, through this formal NEPA handbook, environmental impact statements for both the Five-Year Plan and for specific lease sales before plans for exploration, development, and production are approved in areas with complex geology, in ultra-deepwater, and in the Arctic and other frontier areas. Exploration plans and development and production plans in all other areas should be subject to NEPA review consistent with the Council on Environmental Quality's implementing regulations.
- In less well-explored areas, Interior should reduce the size of lease sales so their geographic scope allows for a meaningful analysis of potential environmental impacts and identification of areas of ecological significance. A bidder on tracts in these areas and all other areas should be able to demonstrate, in addition to financial prequalification and ability to contain a maximum-size spill, experience operating in similar environments and a record of safe, environmentally responsible operation—either in the United States or as verified by a peer regulator for another country. The distinction between the OCS and less well-explored areas in the Gulf should be defined by the new entity in charge of leasing and environmental science.
- Congress should amend the Outer Continental Shelf Lands Act to extend the 30-day deadline for approving exploration plans to 60 days. In addition, MMS should not consider such plans officially “submitted” until all of the required content, necessary environmental reviews, and other analyses are complete and adequate to provide a sound basis for decision-making. Exploration and development plans would be considered higher-level plans for purposes of agency review and approval under a reorganized regulatory structure. The office of safety and environment, separate from the office (or division) of leasing, would be responsible for permitting and approving well designs, drilling plans, and any structures.

2. The Need for Greater Interagency Consultation

Under OCSLA, it is up to the Secretary of the Interior to choose the proper balance between environmental protection and resource development. In making leasing decisions, the Secretary is required to solicit and consider suggestions from any interested agency, but he or she is not required to respond to the comments or accord them any particular weight. Similar issues arise at the individual lease sale stage and at the development and production plan stage. As a result, NOAA—the nation's ocean agency with the most expertise in marine science and the management of living marine resources—effectively has the same limited role as the general public in the decisions on selecting where and when to lease portions of the OCS. A more robust and formal interagency consultation process is needed—with the goal of identifying precise areas that should be excluded from lease sales because of their high ecological importance or sensitivity. In addition to NOAA, other federal agencies that should be involved include the U.S. Fish and Wildlife Service and EPA.

Strengthened interagency coordination on offshore oil and gas activities will also be important in implementing the final recommendations of the Interagency Ocean Policy Task Force. These recommendations, adopted by President Obama by Executive Order on July 19, 2010, mandate a new national ocean policy that includes a framework for coastal

and marine spatial planning, as well as a comprehensive, adaptive, integrated, transparent, ecosystem- and science-based process for analyzing current and anticipated uses of ocean, coastal, and Great Lakes areas.¹¹ Coastal and marine spatial planning applies a multi-sector approach in an effort to simultaneously reduce user conflicts and environmental impacts associated with ocean and coastal activities. Integrating five-year leasing plans and associated leasing decisions with the coastal and marine spatial planning process will be an important step toward assuring the sustainable use of ocean and coastal ecosystems. It could also reduce uncertainty for industry and provide greater predictability for potential users of different areas.

To ensure that offshore oil and gas development and production proceed in ways that minimize adverse impacts to the natural and human environment, decisions about these activities must be grounded in strong science. With respect to funding the necessary science, the Outer Continental Shelf Lands Act requires Interior to study the “assessment and management of environmental impacts on the outer Continental Shelf and coastal areas that might be affected by oil and gas or other mineral developments. . . .”¹² Initiated in 1973, funding for the Environmental Studies Program at Interior peaked in 1976 at roughly \$55 million, but had fallen to less than \$20 million during most of the 1990s and 2000s. It was only recently increased to approximately \$30 million.¹³

Future research must be conducted in a systematic way that strategically enhances understanding of the impacts of oil and gas activities and provides regulators with the timely and scale-appropriate information required for sound decisions. Long-term studies that provide critical scientific information on OCS frontier or lesser known areas,^{*} or systematic efforts to fill data gaps in areas with existing oil and gas activity, can help ensure that the selection of new leasing areas is informed by a full understanding of potential impacts on important ecological resources. In frontier areas, it will be important to collect data on prevailing environmental conditions on a broad geographic scale, not just at individual lease sites. Additionally, post-development ecological monitoring is critical to understanding the impacts of oil and gas activities and to facilitate an adaptive approach to environmental management. Expanded coordination and cooperation on scientific research efforts with NOAA, the U.S. Geological Survey, and other agencies with relevant expertise can improve the quality of science available for OCS decision-making. Much of this research will also be relevant to other offshore activities, including the development of offshore wind resources.

Recommendations

B2: The Department of the Interior should reduce risk to the environment from OCS oil and gas activities by strengthening science and interagency consultations in the OCS oil and gas decision-making process.

* The term “frontier areas” include areas of the OCS that either have never been leased, or have not been leased in many years. It includes the Arctic (Beaufort and Chukchi Seas) and the Atlantic and portions of the Pacific.

B3: Congress, by enacting legislation, and the Department of the Interior, through its lease provision, should require the oil and gas industry to pay fees that support environmental science and regulatory review related to OCS oil and gas activities to enable cooperating agencies to carry out these responsibilities. (See Recommendation G2.)

Several actions are needed to implement these recommendations:

- Congress should amend the Outer Continental Shelf Lands Act to provide NOAA with a formal consultative role during the development of five-year lease plan and lease sale stages. Consultation should occur no later than 60 days in advance of final Department of the Interior decisions on lease plans and sales. Specifically, NOAA should provide comments and recommendations concerning specific geographic areas that should be excluded from the leasing program or treated in a specific manner due to their ecological sensitivity or for other reasons relevant to NOAA's ocean and coastal science expertise. Interior must adopt NOAA's recommendations unless the Department determines that doing so would be inconsistent with important national policy interests. Moreover, Interior must publish in writing its rationale for rejecting NOAA's recommendation.
- The Department of Energy, NOAA, the U.S. Geological Survey, and other interested agencies should establish a joint research program to systematically collect critical scientific data, fill research gaps, and provide comprehensive, ecosystem-based scientific reviews of OCS areas that are currently or will likely be open for oil and gas leasing, and for offshore areas being considered for the siting of sources of renewable energy such as wind power. This program should build on existing data; should aim to supplement data collected from individual lease sites by industry to develop information for broader geographic areas; and should engage the non-federal scientific community through such mechanisms as the National Oceanographic Partnership Program. The research should outline and develop the necessary data for: (1) decision-making related to future leasing, exploration, and development; (2) measuring and monitoring impacts on ecological resources; and (3) providing necessary data for natural resource damage assessment should an oil spill occur.
- The National Academy of Sciences should regularly evaluate the government's studies program in this area, preferably at five-year intervals.
- Together with NOAA, the new division of environmental science under the direction of the Chief Scientist in the Office of Leasing and Environmental Science should develop an environmental monitoring program or set of protocols to be implemented by oil and gas companies at lease sites once exploration and development and production activities begin. Areas of ecological interest and areas where data gaps exist should be targeted for monitoring programs. In addition, monitoring should be conducted in a way that is independently verifiable and allows for comparisons across individual sites. Companies should provide all monitoring data to the federal government.

- NOAA and other federal agencies with appropriate expertise should be encouraged to act as cooperating agencies in NEPA reviews of offshore energy production activities, including exploration and development plans and drilling permit applications. Federal agencies that submit comments to Interior as part of a NEPA process should receive a written response indicating how the information was applied and if it was not included, why it was not included.

C. Strengthening Oil Spill Response, Planning, and Capacity

Just as the events of April 20, 2010 exposed a regulatory regime that had not kept up with the industry it was responsible for overseeing, the events that unfolded in subsequent weeks and months made it dismayingly clear that neither BP nor the federal government was prepared to deal with a spill of the magnitude and complexity of the *Deepwater Horizon* disaster. This section discusses the Commission's recommendations in the area of oil spill response and planning. Broadly speaking they address three critical issues or gaps in the government's existing response capacity: (1) the failure to plan effectively for a large-scale, difficult-to-contain spill in the deepwater environment or potentially in the Arctic; (2) the difficulty of coordinating with state and local government officials to deliver an effective response; and (3) a lack of information and understanding concerning the efficacy of specific response measures, such as dispersants and berms.

1. The Need for Improved Oil Spill Response Planning

Oil spill response planning and analysis across the government needs to be overhauled in light of the lessons of the *Deepwater Horizon* blowout. A common interagency approach to analyzing oil spill risks and a common understanding of the issues and impacts involved are needed and must be consistently incorporated in environmental reviews, consultations, and authorizations. Environmental review and spill planning currently occurs at different levels within the government and industry, and these reviews and plans have not been sufficiently coordinated to ensure either searching review of industry plans or adequate preparation.

One of the common threads that runs through many of the environmental review documents prepared for Gulf of Mexico oil and gas activities in the years leading up to the *Deepwater Horizon* spill was their reliance on MMS oil spill risk and impact analyses. To the extent that any of these documents contained errors or incomplete information, those gaps and errors carried through to subsequent environmental reviews by other agencies.

The government's spill-response planning occurs largely outside of MMS. The National Contingency Plan, mandated by the Clean Water Act, prescribes the nationwide response structure for spills of oil or releases of hazardous substances and creates a tiered planning process. Regional Response Teams include representation from federal agencies and state governments, and develop Regional Contingency Plans as well as preauthorization protocols for certain response strategies. The Area Committees, which develop Area

Contingency Plans, similarly include federal and state representatives but are led by the Coast Guard. (The Coast Guard and EPA co-chair the regional teams.) The Area Contingency Plans are the most specific and the most relied-upon during the response to a spill.

While industry spill response plans must “be consistent with the requirements of the National Contingency Plan and Area Contingency Plans,”¹⁴ those industry plans presently require only the approval of BOEMRE.¹⁵ Its regulations outline what needs to be included in these plans and direct the company to include information about a worst case scenario, including how to calculate the volume of oil, determine its trajectory, and a response strategy.¹⁶ As noted above, MMS oil spill risk and impacts modeling formed the basis of the required analysis. These response plans were not distributed to any federal agencies for review and comment outside of MMS. Additionally, only a small number of the plans developed for the Gulf were sent to the existing Office of Leasing and Environment for detailed environmental review within MMS or shared with other federal agencies with relevant expertise, such as NOAA or the Coast Guard. Finally, no provision was made for any form of public review or comment, and plans were not available to the public after they received MMS approval.

Recommendation

C1: The Department of the Interior should create a rigorous, transparent, and meaningful oil spill risk analysis and planning process for the development and implementation of better oil spill response.

Several steps are needed to implement a rigorous, transparent, and meaningful oil spill risk analysis and planning process:

- Interior should review and revise its regulations and guidance for industry oil spill response plans in light of the lessons learned from the *Deepwater Horizon* experience.
- A new process for reviewing spill response plans is needed. This process should ensure that all critical information and spill scenarios are included in the plans, including oil spill containment and control methods to ensure that operators can deliver the capabilities indicated in their response plans. In addition, the new entity within Interior that is charged with overseeing offshore safety and environmental protection will have to verify operator capability to perform according to the plans.
- Interior must ensure that adequate technical expertise exists within the staff responsible for reviewing and approving spill response plans.
- In addition to the Department of the Interior, other agencies with relevant scientific and operational expertise should play a role in evaluating spill response plans to verify that operators can conduct the response and containment operations detailed in their plans. Specifically, oil spill response plans, including source-control measures, should be subject to interagency review and approval by the Coast Guard, EPA,

and NOAA. Other parts of the federal government, such as Department of Energy national laboratories that possess relevant scientific expertise, could be consulted. This would help remedy the past failure to integrate multiple area, regional, and industry response plans, by involving the agencies with primary responsibility for government spill response planning in oversight of industry planning. Plans should also be made available for a public comment period prior to final approval and response plans should be made available to the public following their approval.

- Interior should incorporate the “worst-case scenario” calculations from industry oil spill response plans into NEPA documents and other environmental analyses or reviews. This does not mean that Interior would be required to conduct a “worst-case scenario analysis” under NEPA, but it does mean that Interior would use industry’s worst-case estimates for potential oil spill situations in its environmental analyses.

2. The Need for a New Approach to Handling Spills of National Significance

The Macondo well blowout caused the largest accidental oil spill in history—one that presented an unprecedented challenge to the response capability of both government and industry. Clearly, neither was adequately equipped: In fact it was quickly evident that even the response capacity indicated in industry’s spill response plans did not exist. Though the National Contingency Plan permitted the government to designate the spill as one of “national significance,” this designation did not trigger any procedures other than allowing the federal government to name a National Incident Commander.

The spill’s magnitude calls into question whether the National Contingency Plan establishes an appropriate relationship between the federal government and the responsible party, as the public demanded in the weeks and months following the *Deepwater Horizon* spill that the government demonstrate control of the response. The responsible party that caused the spill is clearly legally responsible for containing the spill and mitigating its harmful consequences. The federal government, not the responsible party, must be in charge of those efforts. As this spill demonstrated, the government unfortunately lacked both the expertise and the capacity to oversee aspects of the response at the outset of the spill—particularly the effort to control the well. Only as the full scope of the disaster unfolded and the government gathered and focused its resources from a variety of agencies was the government ultimately able to take charge.

Recommendation

C2: EPA and the Coast Guard should establish distinct plans and procedures for responding to a “Spill of National Significance.”

Under existing law, EPA is the federal agency responsible for developing a National Contingency Plan, which is the federal government’s blueprint for responding to both oil spills and hazardous substances releases. In light of the *Deepwater Horizon* oil spill, EPA should amend or issue new guidance on the National Contingency Plan to add distinct plans and procedures for Spills of National Significance. In those amendments, EPA should:

- Increase government oversight of the responsible party, based on the National Contingency Plan's requirement that the government "direct" the response where a spill poses a substantial threat to public health or welfare.¹⁷
- Augment the National Response Team and Regional Response Team structures to establish additional frameworks for providing interagency scientific and policymaking expertise during a spill. Further, EPA, NOAA, and the Coast Guard should develop procedures to facilitate review and input from the scientific community—for example, by encouraging disclosure of underlying methodologies and data.
- Create a communications protocol that accounts for participation by high-level officials who may be less familiar with the National Contingency Plan structure and create a communications center within the National Incident Command—separate from the joint information center established in partnership with the responsible party—to help transmit consistent and complete information to the public.

3. The Need to Strengthen State and Local Involvement

The response to the *Deepwater Horizon* disaster showed that state and local elected officials had not been adequately involved in oil spill contingency planning, though career responders in state government had participated extensively in such planning. Before the *Deepwater Horizon* spill, state and local elected officials were not regular participants in Area Committee meetings or familiar with local Area Contingency Plans. The Coast Guard and Area Committee member agencies had done little to reach out to state and local elected officials. These state and local officials were more familiar with hurricane response under the Stafford Act, in which the federal government provides funding and supports state and local governments, but does not control emergency response operations. As a result, state and local political officials had incorrect expectations about their roles. They understandably wanted to be responsive to citizens who were concerned about the spill and, regardless of the official response plans, sought state and local governmental assistance.

Unfamiliarity with, and lack of trust in, the federal response manifested itself in competing state structures and attempts to control response operations that undercut the efficiency of the response overall. Federal responders improved their relationship with state and local officials as the response progressed—but had better coordination and communication existed sooner, that relationship could have been more productive in the early days of the spill response. Moreover, increased citizen involvement before a spill occurs could create better mechanisms to utilize local citizens in response efforts, provide an additional layer of review to prevent industry and government complacency, and increase public trust in response operations.

Recommendation

C3: EPA and the Coast Guard should bolster state and local involvement in oil spill contingency planning and training and create a mechanism for local involvement in spill planning and response similar to the Regional Citizens' Advisory Councils mandated by the Oil Pollution Act of 1990.

EPA and the Coast Guard, as the chair and vice-chair of the National Response Team, should issue policies and guidance for increased state and local involvement in oil spill contingency planning and training. This guidance should provide protocols to:

- Include local officials from areas at high risk for oil spills in training exercises.
- Establish liaisons between the Unified Command and affected local communities at the outset of a spill response.
- Add a local on-scene coordinator position to the Unified Command structure.
- Provide additional clarification and guidance to federal, state, and local officials on the differences between emergency response under the Stafford Act and under the National Contingency Plan.

In addition, a mechanism should be created for ongoing local involvement in spill planning and response in the Gulf. In the Oil Pollution Act of 1990, Congress mandated citizens' councils for Prince William Sound and Cook Inlet. In the Gulf, such a council should broadly represent the citizens' interests in the area, such as fishing and tourism, and possibly include representation from oil and gas workers as ex-officio, non-voting members. The citizens' group could be funded by Gulf lease holders. The Commission further recommends that federal regulators be required to consult with the council on relevant issues, that operators provide the council with access to records and other information, and that entities (either in industry or in government) declining the council's advice submit their reasons to the council in writing.

4. The Need for Increased Research and Development to Improve Spill Response

The technology available for cleaning up oil spills has improved only incrementally since 1990. Federal research and development programs in this area are underfunded: In fact, Congress has never appropriated even half the full amount authorized by the Oil Pollution Act of 1990 for oil spill research and development. In addition, the major oil companies have committed minimal resources to in-house research and development related to spill response technology. Oil spill removal organizations are underfunded in general and dedicate few if any resources to research and development. Though some commentators and industry representatives have argued that more research and development would not have allowed for a more effective spill response because no technology will ever collect more than a fraction of spilled oil, the fact is that neither industry nor government has made significant investments in improving the menu of response options or significantly improved their effectiveness. Thus any argument about the limited potential of response technology is speculative. After the *Deepwater Horizon* spill, agencies, industry, and entrepreneurs focused attention on developing new response technologies for the first time in 20 years, and a number of promising options emerged within a relatively short period of time—including beach-cleaning machines, subsea dispersant delivery systems, and new in situ burning techniques.

Recommendation

C4: Congress should provide mandatory funding for oil spill response research and development and provide incentives for private-sector research and development.

Specifically, Congress should provide mandatory funding (i.e. funding not subject to the annual appropriations process) at a level equal to or greater than the amount authorized by the Oil Pollution Act of 1990 to increase federal funding for oil spill response research by agencies such as Interior, the Coast Guard, EPA, and NOAA—including NOAA’s Office of Response and Restoration. To be sure, such mandatory appropriations are rarely done, but they are not unprecedented. Congress has included such a provision when, as here, Congress seeks to target appropriations to support a discrete category of activities where Congress perceives that the need is high and the concern is great that the desired activity will otherwise go unfunded over a sustained period of time. For instance, Congress has provided for an annual mandatory appropriation of \$100 million for emergency highway repairs for those damaged by natural disasters or catastrophic failures.¹⁸ Congress also provided for mandatory funding for five years for several farm conservation programs in the Farm Security and Rural Investment Act of 2002.¹⁹ By similarly removing oil spill research and development funding from the ordinary appropriations process, Congress can avoid the experience that followed the *Exxon Valdez* spill, when support for response research and development decreased over time. Moreover, Congress can comply with its pay-as-you-go rules by supporting increased research and development funding with a fee on offshore lessees. (See Recommendation G2.)

An advisory board, made up of experts from relevant offices of the Department of the Interior, U.S. Geological Survey, Department of Energy, EPA, and NOAA, as well as from professional societies, academia, industry, and non-governmental organizations, should be established to develop a research agenda and roadmap. In addition, to promote increased research investments by industry, the Coast Guard should revise its Effective Daily Recovery Capacity regulations to encourage the development and use of more efficient oil recovery equipment. At the same time, EPA should revise its oiled-water discharge regulations and streamline its permitting process for open-water testing. Finally, Congress and the Administration should encourage private investment in response technology more broadly, including through public-private partnerships and a tax credit for research and development in this area.

5. The Need for New Regulations to Govern the Use of Dispersants

The decision to use dispersants involves difficult tradeoffs: If dispersants are effective, less oil will reach shorelines and fragile marsh environments, but more dispersed oil will be spread throughout the water column. Prior to the *Deepwater Horizon* incident, the federal government had not adequately planned for the use of dispersants to address such a large and sustained oil spill, and did not have sufficient research on the long-term effects of dispersants and dispersed oil to guide its decision-making. Officials had to make decisions about dispersant use without important relevant information or the time to gather such information. Under the circumstances, however, the Commission believes that the National Incident Commander, Federal On-Scene Coordinators, and EPA Administrator

made reasonable decisions regarding the use of dispersants at the surface and in the subsea environment.

Recommendation

C5: EPA should update and periodically review its dispersant testing protocols for product listing or pre-approval, and modify the pre-approval process to include temporal duration, spatial reach, and volume of the spill.

EPA should update its dispersant testing protocols and require more comprehensive testing prior to listing or pre-approving dispersant products. The Coast Guard and EPA, as co-chairs of the Regional Response Teams and leaders of the Area Contingency Plan drafting process, should modify pre-approvals of dispersant use under the National Contingency Plan to establish procedures for further consultation based on the temporal duration, spatial reach, or volume of the spill and volume of dispersants that responders are seeking to apply. EPA and NOAA should conduct and encourage further research on dispersants, including research on the impacts of high-volume and subsea use of dispersants, the long-term fate and effects of dispersants and dispersed oil, and the development of less toxic dispersants.

6. The Need to Re-evaluate the Use of Offshore Barrier Berms in Spill Response

Offshore barrier berms generally do not constitute a viable spill response measure for several reasons. These reasons include the time and cost of construction, and the highly variable and dynamic marine environment that limit effectiveness and pose the potential for negative environmental impacts resulting from dredging and filling. Thus, for instance, barrier berms constructed off the shores of Louisiana in response to the *Deepwater Horizon* spill could not be considered a success. Only a fraction of the project (approximately 6 percent) was completed by the time the well was capped, and no estimate of the amount of oil trapped by the berms is much more than 1,000 total barrels. In fact, the Louisiana berms project stands out as the most expensive and perhaps most controversial response measure deployed to fight the *Deepwater Horizon* spill. The decision to approve the project as one of the oil spill response techniques to be funded by the responsible party was based primarily on the demands of local and regional interests rather than on a scientific assessment of its likely efficacy.

Recommendation

C6: The Coast Guard should issue guidance to establish that offshore barrier berms and similar dredged barriers generally will not be authorized as an oil spill response measure in the National Contingency Plan or any Area Contingency Plan.

D. Advancing Well-Containment Capabilities

As described in Chapter 5, the most obvious, immediately consequential, and plainly frustrating shortcoming of the oil spill response set in motion by the events of April 20, 2010 was the simple inability—of BP, of the federal government, or of any other potential intervener—to contain the flow of oil from the damaged Macondo well. Clearly, improving the technologies and methods available to cap or control a failed well in the extreme conditions thousands of feet below the sea is critical to restoring the public’s confidence that deepwater oil and gas production can continue, and even expand into new areas, in a manner that does not pose unacceptable risks of another disaster. Better technology and methods are also needed to gather accurate information in the event of an accident or failure. This section discusses the Commission’s recommendations for advancing well-containment capabilities in the wake of the Macondo well blowout.

1. The Need for Government to Develop Greater Source-Control Expertise

As described in Chapter 5, at the time of the Macondo well blowout on April 20, the U.S. government was unprepared to oversee a deepwater source-control effort. Though the public expected federal authorities to take charge once the accident occurred, neither MMS nor the Coast Guard had the expertise or resources to supervise BP’s well-containment efforts. Once the Secretary of Energy’s science team, the U.S. Geological Survey, the national laboratories, and other sources of scientific expertise became involved, the government was able to substantively supervise BP’s decision-making, forcing the company to fully consider contingencies and justify its chosen path. The government’s oversight effort was assisted by outside industry experts, although their involvement also raised some concerns (about conflicts of interest, sharing of proprietary information, and potential liability for participants) that were never resolved.

Recommendation

D1: The National Response Team should develop and maintain expertise within the Federal government to oversee source-control efforts.

The National Response Team should create an interagency group—including representation from the Department of the Interior, Coast Guard, and the Department of Energy and its national laboratories—to develop and maintain expertise in source control, potentially through public-private partnerships. The proposed Ocean Energy Safety Institute at the Department of the Interior could play a role in developing such expertise.

In addition, EPA should amend the National Contingency Plan to:

- Define and institutionalize the role of federal agencies and the national laboratories that possess relevant scientific expertise in source-control.

Create a mechanism for involving outside industry experts in source-control design and oversight.

2. The Need to Strengthen Industry's Spill Preparedness

Beyond attempting to close the blowout preventer stack, no proven options for rapid source control in deepwater existed when the blowout occurred. BP's Initial Exploration Plan for the area that included the Macondo prospect identified only one response option by name: a relief well, which would take months to drill. Although BP was able to develop new source-control technologies in a compressed timeframe, the containment effort would have benefited from prior preparation and contingency planning.

Recommendation

D2: The Department of the Interior should require offshore operators to provide detailed plans for source control as part of their oil spill response plans and applications for permits to drill.

Consistent with the enhanced planning process described above in Recommendation C1, oil spill response plans should be required to include detailed plans for source control. These plans should demonstrate that an operator's containment technology is immediately deployable and effective. (BOEMRE has recently issued a Notice to Lessees requiring operators to demonstrate, as part of the spill response planning process, that they have "access to and can deploy surface and subsea containment resources that would be adequate to promptly respond to a blowout or other loss of well control."²⁰ In enforcing this Notice, BOEMRE must ensure that operators provide detailed descriptions of their technology and demonstrate that it is deployable and effective.)

In applications for permits to drill, the Department of the Interior should require operators to provide a specific source-control analysis for each well. The analysis must demonstrate that an operator's containment technology is compatible with the well. (The Department of the Interior could implement this requirement through amendments to existing regulations²¹ or through a Notice to Lessees.²² The latter option could be implemented more quickly, though the former might be more permanent.)

As with oil spill response plans, source-control plans should be reviewed and approved by agencies with relevant expertise, including the Department of the Interior and the Coast Guard.

3. The Need for Improved Capability to Develop Accurate Flow Rate Estimates

As described in Chapter 5, early flow rate estimates were highly variable and difficult to determine accurately. However, the understated estimates of the amount of oil spilling from the Macondo well appear to have impeded planning for and analysis of source-control efforts like the cofferdam and especially the top kill. U.S. Geological Survey Director Marcia McNutt stated that if a similar blowout occurs in the future, the government will be able to quickly and reliably estimate oil flow using the oceanographic techniques that eventually provided an accurate estimate of the flow rate from the Macondo well.²³

Recommendation

D3: The National Response Team should develop and maintain expertise within the federal government to obtain accurate estimates of flow rate or spill volume early in a source-control effort.

The National Response Team should create an interagency group—including representation from the Department of the Interior, the Coast Guard, the national laboratories, and NOAA—to develop and maintain expertise in estimating flow rates and spill volumes, potentially through consultation with outside scientists.

In addition, EPA should amend the National Contingency Plan to create a protocol for the government to obtain accurate estimates of flow rate or spill volume from the outset of a spill. This protocol should require the responsible party to provide the government with all data necessary to estimate flow rate or spill volume.

4. The Need for a More Robust Well Design and Approval Process

Among the problems that complicated the Macondo well-containment effort was a lack of reliable diagnostic tools. The *Deepwater Horizon* blowout preventer had one pressure gauge accurate to plus or minus 400 pounds per square inch. This meant BP and the government could not get accurate pressure readings, which in turn hampered their ability to estimate the oil flow rate, undertake reservoir modeling, and plan for source control operations. In addition, the blowout preventer lacked a means of indicating whether and to what extent its rams and annular preventers had closed. Without such instruments, the government and BP expended significant resources on basic data-collection such as obtaining gamma-ray images of the blowout preventer and adding pressure sensors to the top hat after it was deployed. Meanwhile, the presence of rupture disks in the Macondo well's 16-inch casing led to concerns about well integrity that further complicated the source-control effort. BP had not considered the impact of these disks on post-blowout containment when it designed the well.²⁴

Recommendation

D4: The Department of the Interior should require offshore operators seeking its approval of proposed well design to demonstrate that:

- Well components, including blowout preventer stacks, are equipped with sensors or other tools to obtain accurate diagnostic information—for example, regarding pressures and the position of blowout preventer rams.
- Wells are designed to mitigate risks to well integrity during post-blowout containment efforts.

E. Overcoming the Impacts of the *Deepwater Horizon* Spill and Restoring the Gulf

As described in Chapters 6 and 7, even before the Macondo well was finally capped and oil stopped flowing, major efforts were underway to mitigate and begin to repair the environmental and economic harm caused by the spill. Those efforts are continuing—and likely will for years. Nevertheless, any effort to draw lessons learned from the *Deepwater Horizon* spill for the purpose of developing options (as the Commission’s charter states) to “guard against, and mitigate the impact of, any oil spills associated with offshore drilling in the future” would necessarily be incomplete without an early appraisal of progress toward longer-term restoration in the Gulf. This section describes the actions and initiatives that have been launched to assess and overcome the impacts of the spill, and presents the Commission’s recommendations for steps that should be taken to ensure the following three goals are met:

- The environment and the economy of the Gulf region recovers as completely and as quickly as possible, not only from the direct impacts of the spill, but from the decades of degradation that preceded it;
- The people of the Gulf are fairly compensated for the direct and indirect impacts of the spill; and
- Lessons learned from restoration efforts in the Gulf—including advances in scientific understanding, data collection, mitigation technologies and techniques, planning, and institutional coordination—result in enhanced capacity to remedy the impacts of future offshore oil spills and better manage the myriad economic, environmental, and social interests that must be balanced in the Gulf and other critical offshore areas.

1. The Need for Improved Understanding of Oil Spill Impacts, Particularly in the Deepwater Environment

A sophisticated understanding of the full range of impacts from a large-scale oil spill is critical to effective recovery and restoration efforts. Because, however, the concentration and toxicity of oil dissipate rapidly within the first few days to weeks of exposure to the elements, the window of opportunity to collect data in the aftermath of an accident is

narrow. For this reason, advance planning and rapid response mechanisms, are essential to capitalize on research opportunities.

Independent scientists, many of who are long-time scholars of the Gulf ecosystem or have unique capabilities, were eager to study the spill and contribute to the injury assessment. However, the independent science community's ability to participate early on was hampered by a lack of timely access to the response zone. This had the effect of diminishing what was learned from the spill.

Recommendation

E1: The Coast Guard, through the Federal On-Scene Coordinator, should provide scientists with timely access to the response zone so that they can conduct independent scientific research during an oil spill response and long-term monitoring in the future.

The National Science Foundation, in consultation with the new National Ocean Council, should expand on its RAPID grant program to create a framework under which independent science during a spill can be coordinated, with an emphasis on data-sharing, communication, and timely access within the response zone. By ensuring that independent scientists can receive expedited funding after an oil spill, government will gain a more complete understanding of spill-related environmental impacts. A demonstrated commitment to independent science will also serve to bolster public confidence and trust. The rush to study the impacts of the *Deepwater Horizon* spill put a strain on existing scientific resources in the Gulf. Independent, industry, and government scientists all wrangled for funding, equipment and vessels, often duplicating efforts in the process. A program that effectively coordinates research initiatives and resources will provide a significant added value to the scientific community under exigent conditions.

2. The Need for Fair, Transparent Compensatory Restoration Based on Natural Resource Damage Assessments

As described in Chapter 6, the *Deepwater Horizon* spill caused substantial damage to natural resources and habitats across the Gulf coast and in the deepwater offshore environment. Damages to natural resources are formally assessed subject to regulations established under the Natural Resource Damage Assessment provisions of the Oil Pollution Act. The Act requires that the public be compensated for injury to and lost use of public resources. The regulation provides that compensation should be "in-place" and "in-kind" wherever possible, thereby favoring restoration measures with a connection to oil spill impacts. The *Deepwater Horizon* spill is unprecedented in that five Gulf States were affected, each with its own restoration agenda, even though most of the damage occurred in Louisiana. The damage offshore is unprecedented and unknown. The Trustees* responsible for the damage assessment are under pressure to approve projects with an "equitable" (i.e., each state

* The Natural Resource Damage Assessment regulation provides for the designation of affected state, federal, and tribal Trustees to conduct the damage assessment of natural resources, achieve agreement on restoration goals, and design and implement restoration projects to meet those goals. In this case, the Trustees comprise designated federal and state officials who are encouraged to work together and achieve consensus on restoration goals and projects through a Trustee Council. While the regulation supports cooperation, it does not explicitly require consensus by the Trustees. If certain Trustees disagree with the direction of the Natural Resource Damage Assessment process, they are free to break away from the Council and seek reimbursement for natural resource damages on their own.

receives an equal portion) allocation of resources that may not be entirely consonant with the “in-place, in-kind” requirement.

Another challenge for the Trustees is assessing and providing compensatory restoration for the potentially significant marine and deepwater impacts associated with this spill. Historically, most applications of the Natural Resource Damage Assessment process have focused on coastal restoration, but the Macondo well, which spilled oil 5,000 feet below the surface, may have damaged organisms in the water column or on the sea floor for which there should be compensation as well.

Recommendation

E2: The Trustees for Natural Resources should ensure that compensatory restoration under the Natural Resource Damage Assessment process is transparent and appropriate.

Restoration decisions must be transparent, appropriate, and apolitical. The Trustees should appoint an independent scientific auditor to ensure that projects are authorized on the basis of their ability to mitigate actual damages caused by the spill, with special care taken to assess and compensate poorly understood marine impacts. Further, any potential settlement agreement between the responsible party and the Trustees should provide for long-term monitoring of affected resources for a period of at least three to five years, as well as “enhancement”^{*} beyond the baseline. By hewing closely to the “in-place” and “in-kind” principles that underpin Natural Resource Damage Assessment regulations, Trustees will help ensure that injured public resources, and the communities that rely on them, are made whole to the fullest extent possible, regardless of state and federal boundaries. A focus on ocean impacts will provide an invaluable opportunity—missed during the Ixtoc spill of 1979—to assess and remediate damage to marine ecosystems after an oil spill.

3. The Need to Address Human Health Impacts, Especially Among Response Workers and in Affected Communities

As described in Chapter 6, the National Contingency Plan overlooks the need to respond to widespread concerns about human health impacts. For smaller oil spills, the response effort is generally carried out by trained oil spill response technicians, but given the scale of the response to the *Deepwater Horizon* spill and the need to enlist thousands of previously untrained individuals to clean the waters and coastline, many response workers were not screened for pre-existing conditions. This lack of basic medical information, which could have been collected if a short medical questionnaire had been distributed, limits the ability to draw accurate conclusions regarding long-term physical health impacts. Additionally, residents of coastal communities may believe that they suffered adverse health consequences resulting from both chemical exposure from the spill itself and the mental stress occasioned by the spill’s assault on their livelihoods.

* “Enhancement” is a term coined during settlement negotiations after the *Exxon Valdez* oil spill of 1989. It requires the responsible party to fund restoration beyond that needed merely to return injured resources to baseline conditions. Rather, any funding should be sufficient to ensure that restoration leaves the affected system better off than before a spill.

Adequate funding and resources were not in place to deal with claims of physical and mental illness among Gulf coast residents resulting from, or exacerbated by, the spill, response actions, and the resulting impacts. Whether allegations that the spill created health problems for responders and Gulf Coast residents are warranted does not change the perception among some that government has not been responsive to health concerns.

The National Contingency Plan contains no specific guidance for responding to public health impacts of an oil spill or hazardous substances release. By contrast, the National Response Framework—which provides the structure for a national response to terrorist attacks, major disasters, and other kinds of emergencies—incorporates a protocol for responding to public health exigencies.

Recommendation

E3: EPA should develop distinct plans and procedures to address human health impacts during a Spill of National Significance.

EPA should amend the National Contingency Plan to add distinct procedures to address human health impacts during a Spill of National Significance. Spills of this magnitude necessarily require a significant clean-up effort, potentially exposing workers to toxic compounds in oil and dispersants. Additionally, residents of coastal communities may suffer adverse health consequences due to both chemical exposure from the spill itself, and the mental stress occasioned by the assault on their livelihoods or way of life. With respect to worker health and safety, existing authorities²⁵ should be strengthened to ensure consistent application of medical screening and surveillance procedures for both formal response contractors and ad hoc citizen responders. Regarding public health, a medical services protocol similar to the Public Health and Medical Services Annex of the National Response Framework should be incorporated to ensure emergency medical care, timely dissemination of public health information,²⁶ and medical monitoring and surveillance.²⁷

Furthermore, a public health protocol requiring the collection of adequate baseline data and long-term monitoring would allow researchers to assess the human dimensions of oil spills with greater accuracy. Without sound data on the causal or correlative relationships between chemical (i.e., oil and dispersants) exposure and human health, a number of response methods may be used inappropriately—including the provision of appropriate protective gear for cleanup workers.²⁸

4. The Need to Restore Consumer Confidence

As described in Chapter 6, images of spewing oil and oiled beaches in newspapers and on television set the stage for public concern regarding the safety of Gulf seafood. Additional factors contributed to the lingering impression that the public could not trust government assurances that the seafood was safe: the unprecedented volumes of dispersants used, confusion over the flow rate and fate of the oil, frustration about the government's relationship with BP in spill cleanup, and lawsuits filed by fishermen contesting the government's assurance of seafood safety. The economic blow to the Gulf region associated with this loss of consumer confidence is sizable. BP gave Louisiana and Florida \$68 million

for seafood testing and marketing, as well as money to assess impacts on tourism and fund promotional activities. As of early December, BP was considering a similar request from Alabama.

In future spills, however, there is no guarantee that a responsible party will have the means or the inclination to compensate such losses. Such indirect financial harms are currently not compensable under the Oil Pollution Act. Nevertheless, losses in consumer confidence are real and Congress, federal agencies, and responsible parties should consider ways to restore consumer confidence in the aftermath of a Spill of National Significance.

Recommendation

E4: Congress, federal agencies, and responsible parties should take steps to restore consumer confidence in the aftermath of a Spill of National Significance.

5. The Need for a Long-Term Restoration Effort that Is Well Funded, Scientifically Grounded, and Responsive to Regional Needs and Public Input

As described in Chapter 7, a lack of sustained and predictable funding, together with failed project coordination and long-term planning, have resulted in incomplete and often ineffective efforts to restore the Gulf's natural environment. Currently, no funding source exists to support regional restoration efforts. Estimates of the cost of Gulf restoration vary widely, but according to testimony before the Commission, fully restoring the Gulf will require \$15 billion–\$20 billion, or a minimum of \$500 million per year, over 30 years. While a number of different sources currently provide funding to individual states for restoration, none of these sources provides funds for Gulf-wide coastal and marine restoration and none is sufficient to support the sustained effort required. Most policymakers agree that without a reliable source of long-term funding, it will be impossible to achieve restoration in the Gulf.

Several Gulf States and the federal government have filed or are expected to file suit against BP and other companies involved in the spill, which will likely create opportunities to direct new restoration funds to the region. In some cases, congressional action will be required to ensure that funds are directed to this purpose. Meanwhile, Congress has already begun considering other potential funding sources, including a higher per-barrel tax on oil production, increased royalties or fees, and direct appropriations for Gulf-wide restoration through the normal federal budget process. Although many of these proposals face political hurdles, the fact remains that resources are needed if progress on coastal restoration is to continue. Inaction is a prescription for further degradation: since many Gulf ecosystems were already fragile and deteriorating before the spill, maintaining the status quo amounts to accepting their continued decline, with the longer-term risks and vulnerabilities this entails.

In order for funding to be most efficiently directed at long-term restoration, a decision-making body is needed that has authority to set binding priorities and criteria for project funding. The Gulf Coast Ecosystem Restoration Task Force is now in place; it was recommended by a September 2010 report on restoration from Secretary of the Navy Ray

Mabus to the President and subsequently established by Presidential Executive Order.²⁹ According to the language of the Executive Order, the job of the Task Force is to begin coordinating the different restoration projects being undertaken by various jurisdictions in the Gulf, coordinating related science activities, and engaging stakeholders. However, as many in Congress and the Administration have suggested, the Task Force lacks some features necessary to effectively direct long-term restoration efforts in the Gulf—most importantly the ability to set binding goals and priorities. A number of critical issues remain to be addressed, including how to allocate funding in a way that addresses the relative restoration needs of individual states; how to balance the roles and interests of the state and federal governments; how to ensure that decisions are made efficiently and quickly; how to incorporate good science without unduly slowing valuable projects; and how to incorporate meaningful public input.

Recommendations

E5: Congress should dedicate 80 percent of the Clean Water Act penalties to long-term restoration of the Gulf of Mexico.

E6: Congress and federal and state agencies should build the organizational, financial, scientific, and public outreach capacities needed to put the restoration effort on a strong footing.

The Commission's recommendations share much common ground with those outlined in Secretary Mabus's report this past September. For instance, the Commission recommends that Congress—recognizing that dedicated, sustained funding is necessary to accomplish long-term Gulf of Mexico ecosystem restoration—should direct 80 percent of Clean Water Act penalties to support implementation of a region-wide restoration strategy. Directing such payments to the Gulf could, for the next 10 years, provide significant funding. If litigation arising from the spill results in civil or criminal penalties, a global settlement of litigation should include supplemental environmental projects* and community service projects that direct payments to the Gulf. Should Clean Water Act penalties not be redirected toward Gulf ecosystem restoration, Congress should consider other mechanisms for a dedicated funding stream not subject to annual appropriations.

The Commission recommends that Congress establish a joint state-federal Gulf Coast Ecosystem Restoration Council. The structure of the *Exxon Valdez* Oil Spill Trustee Council should inform the structure of the Gulf Coast Council on the question of the relative representation of the federal and state governments on the council. The Gulf Coast Council should implement a restoration strategy for the region that is compatible with existing state restoration goals. This strategy should set short- and long-term goals with criteria for selecting projects for funding. Key criteria should include (1) national significance; (2) contribution to achieving ecosystem resilience; and (3) the extent to which national policies such as related to flood control, oil and gas development, agriculture, and navigation directly contributed to the environmental problem.

* "Supplemental environmental projects" are projects that a defendant agrees to undertake as part of a settlement with government of an enforcement action and that are above and beyond those necessary to comply with applicable legal requirements.

Experience in major restoration endeavors, including those in the Gulf, has shown that, absent binding goals to drive the process, restoration projects are insufficiently funded, focused, or coordinated. Establishing a region-wide council to coordinate agency activities represents a necessary first step, but without authority to set priorities and resolve conflicts, such a council will be hampered in its ability to achieve environmental goals. The Commission recommends that a region-wide council for the Gulf be given authority to set priorities that will govern the expenditure of funds and resolve any conflicts regarding eligibility of projects. The council should further define specific categories of projects that could meet each of the three criteria listed above. Projects could be categorized in a number of ways—for example, by habitat (key estuaries, sea grass, wetlands, coral reefs); by goal (biological productivity and ecosystem function, improving resilience, restoring fisheries); or by specific project type (river diversion, beach nourishment).

The Commission believes that having a comprehensive, binding strategy to guide the restoration effort is critical to success. By elaborating on the goals set by the governing entity and by providing specific milestones and restoration objectives, such a strategy would focus the overall effort and help ensure that projects are not duplicative. The strategy could also include a map that ties projects to specific places and provide a useful mechanism for public involvement. Congress should also ensure that the priorities and decisions of the Gulf Coast Council are informed by input from a Citizens Advisory Council that represents diverse stakeholders.

Finally, but essentially, restoration decisions must be rooted in science. An approach that draws heavily on information and advice from scientists will result in project selection and funding allocations that are more likely to lead to an effective region-wide restoration strategy. It will also advance transparency in decision-making and enhance credibility with the public. The Commission accordingly recommends the establishment of a Gulf Coast Ecosystem Restoration Science and Technology Program that would address these issues in three ways: 1) by creating a scientific research and analysis program, supported by the restoration fund, that is designed to support the design of scientifically sound restoration projects; 2) by creating a science panel to evaluate individual projects for technical effectiveness and consistency with the comprehensive strategy; and 3) by supporting adaptive management plans based on monitoring of outcomes scaled both to the strategy itself and to the individual projects or categories of projects included in it.

6. The Need for Better Tools to Balance Economic and Environmental Interests in the Gulf

Federal agencies charged with managing activities within the U.S. Exclusive Economic Zone have tended to work largely in isolation from one another. Responsive to the recommendations of the 2004 U.S. Commission on Ocean Policy, President Obama in June 2009 directed two dozen federal departments and agencies to provide in-depth recommendations about how federal policy can address inefficiencies in the nation's traditionally ad hoc management of its seas. The Interagency Ocean Policy Task Force reported in the summer of 2010; its recommendations were subsequently included in a Presidential Executive Order, issued on July 15, 2010, that created a new National Ocean Council to coordinate federal marine policy.

Prominent recommendations included a requirement that key regional and federal authorities develop and implement coastal and marine spatial planning, for ocean users and the public. This system is designed to optimize marine productivity. More broadly, scientific advice grounded in peer-reviewed empirical research inform strategy and decision-making in ocean management, including for energy, shipping, national defense, sustainable fisheries, and conservation.

Recommendation

E7: The appropriate federal agencies, including EPA, Interior, and NOAA, and the Trustees for Natural Resources should better balance the myriad economic and environmental interests concentrated in the Gulf region going forward. This would include improved monitoring and increased use of sophisticated tools like coastal and marine spatial planning. Many of these tools and capacities will also be important to manage areas of the OCS outside the Gulf.

The Commission recommends that as a part of management and restoration efforts in the marine environment greater attention should be given to new tools for managing ocean resources, including monitoring systems and spatial planning. Marine scientists have emerged from the *Deepwater Horizon* incident with more precise questions to investigate and a better sense of monitoring needs in the Gulf of Mexico, which because of its multiple uses and economic value should be a national priority. To that end, the National Ocean Council should work with the responsible federal agencies, industry and the scientific community to expand the Gulf of Mexico Integrated Ocean Observing System, including the installation and maintenance of an in situ network of instruments deployed on selected production platforms. Participation in this system by industry should be regarded as a reasonable part of doing business in nation's waters.

Coastal and marine spatial planning has the potential to improve overall efficiency and reduce conflicts among ocean users. Congress should fund grants for the development of regional planning bodies at the amount requested by the President in the fiscal year 2011 budget submitted to Congress. Ocean management should also include more strategically sited Marine Protected Areas, including but not limited to National Marine Sanctuaries, which can be used as "mitigation banks" to help offset harm to the marine environment. Given the economic and cultural importance of fishing in the Gulf region—and the importance of Gulf seafood to the rest of the country—scientifically valid measures, such as catch share programs, should be adopted to prevent overfishing and ensure the continuity of robust fisheries.

Marine spatial planning was designed to ensure that myriad ocean management decisions are compatible and consistent, that they make sense. In the decades since marine protection began, scientists have developed a much more robust understanding of the Gulf's physical and ecological processes. Now, for example, Marine Protected Areas can be used—and should be used—to ensure the continuity and robustness of fisheries into the future. Rationalizing ocean use around this much improved scientific understanding—for example, by identifying which parts of the ocean are appropriate (or inappropriate) for certain

uses—should serve to maximize the productivity of natural systems and end inefficient or harmful practices that have accumulated over time.

F. Ensuring Financial Responsibility

As described in Chapter 6, oil spills cause a range of harms, both economic and environmental, to individuals and ecosystems. The Oil Pollution Act makes the party responsible for a spill liable for compensating those who suffered as a result of the spill—through property damage, lost profits, and other economic injuries—and for restoring injured natural resources. The Act also provides an opportunity to make claims for compensation from a dedicated Oil Spill Liability Trust Fund. The Oil Pollution Act, however, imposes limits on both the amount for which the responsible party is liable, and the amount of compensation available through the trust fund. In the case of the *Deepwater Horizon* spill, BP (a responsible party) has placed \$20 billion in escrow to compensate private individuals and businesses through the independent Gulf Coast Claims Facility. But if a less well capitalized company had caused the spill, neither a multi-billion dollar compensation fund nor the funds necessary to restore injured resources, would likely have been available.

It is critical that compensation to victims be paid in full, and that the process for receiving compensation is swift and efficient. The Commission offers recommendations that would increase assurances that responsible parties are able to compensate victims (and at the same time strengthens incentives to prevent accidents in the first place), and that the Oil Spill Liability Trust Fund provide any compensation not provided by responsible parties. It also recommends a close review of the Gulf Coast Claims Facility process to determine its effectiveness in adjudicating compensation claims and its value as a model for future Spills of National Significance.

1. The Need to Increase Existing Limitations on Responsible Party Liability

Liability for damages from spills from offshore facilities is capped under the Oil Pollution Act at \$75 million, unless it can be shown that the responsible party was guilty of gross negligence or willful misconduct, violated a federal safety regulation, or failed to report the incident or cooperate with removal activities, in which case there is no limit on damages (see Chapter 8). Claims up to \$1 billion above the \$75 million cap for certain damages can be made to, and paid out of, the Oil Spill Liability Trust Fund, which is currently supported by an 8-cent per-barrel tax on domestic and imported oil.

The Oil Pollution Act also requires responsible parties to “establish and maintain evidence of financial responsibility,” generally based on a “worst-case discharge” estimate. In the case of offshore facilities, necessary financial responsibility ranges from \$35 million to \$150 million. The financial responsibility requirement provides a direct link between the Oil Pollution Act and insurance, as the Act provides that financial responsibility may be “established by any one, or by any combination, of the following methods” if determined by the Secretary of the Interior to be acceptable: “evidence of insurance, surety bond,

guarantee, letter of credit, qualification as a self-insurer, or other evidence of financial responsibility.”

There are two main problems with the current liability cap and financial responsibility dollar amounts:

- **Lack of Adequate Safety Incentives:** A threshold problem with any damages cap that limits liability well below levels that may actually be incurred is that such a cap distorts the incentives of industry participants to adopt cost-effective safety precautions. Decisions regarding safety precautions are made for a variety of reasons, some of which cannot be influenced by policy measures. The relatively modest liability cap and financial responsibility requirements provide little incentive for oil companies to improve safety practices.
- **Inadequate Damages Compensation:** BP’s damages from the *Deepwater Horizon* spill will total in the tens of billions of dollars. The company has already paid claims that measure in the billions, and has waived the statutory \$75 million cap. But there is no guarantee that other companies in the future will agree to waive the cap. And if an oil company with more limited financial means than BP had caused the *Deepwater Horizon* spill, that company might well have declared bankruptcy long before paying fully for all damages. In the case of a large spill, the Oil Spill Liability Trust Fund would likely not provide sufficient backup. Thus, a significant portion of the injuries caused to individuals and natural resources, as well as government response costs, could go uncompensated.

Any discussion of increasing liability caps and financial responsibility requirements must balance two competing public policy concerns: first, the goal of ensuring that the risk of major spills is minimized, and in the event of a spill, victims are fully compensated; and second, that increased caps and financial responsibility requirements do not drive competent independent oil companies out of the market. A realistic policy solution also requires an understanding of the host of complex economic impacts that could result from increases to liability caps and financial responsibility requirements.

Recommendation

F1: Congress should significantly increase the liability cap and financial responsibility requirements for offshore facilities.

To address both the incentive and compensation concerns noted above, Congress should significantly raise the liability cap. Financial responsibility limits should also be increased, because if an oil company does not have adequate resources to pay for a spill, the application of increased liability has little effect: Should a company go bankrupt before fully compensating for a spill, its liability is effectively capped. If, however, the level of liability imposed and the level of financial responsibility required are set to levels that bear some relationship to potential damages, firms will have greater incentives to maximize prevention and minimize potential risk of oil spills³⁰ and also have the financial means to ensure that victims of spills do not go uncompensated.

Legislative attempts to raise the cap and financial responsibility requirements to significantly higher levels have been met with the argument that these changes will cause insurance carriers to drop oil pollution coverage, leading to an exodus of small and independent companies from the offshore drilling market. The counter-argument is that oil companies should bear the social costs of their activities, and if those costs are too large or unpredictable to be insurable, then it is appropriate that these companies exit the market.

There is legitimacy to aspects of both arguments. A company should not be able to cause billions of dollars of damage and walk away, simply because its operations contribute to the economy of the Gulf. Nor should smaller companies that can demonstrate the ability to drill safely and to pay for damages resulting from a large spill be forced out of the market. However, smaller companies that cannot demonstrate financial responsibility and meet risk requirements set and monitored by the Department of the Interior or a third party should not be allowed to make others pay for the costs of their accidents.

One option for keeping competent independents in the market is a mutual insurance pool. Under such an arrangement, individual companies engaged in offshore drilling would pay premiums into a pool, which would pay out damages caused by a company as a result of a spill. A possible downside is that the mutual pool could have the effect of undercutting incentives individual firms might otherwise have to improve safety practices—but this problem could be addressed, for example, by tying premium levels to the financial and safety risk posed by an individual company's activities. This option would allow companies to demonstrate financial responsibility for the cost of spills, at least to the limit paid out by the pool.

Another option would be to phase in increases in the liability cap and financial responsibility requirements, which would allow the insurance industry a period of adjustment. Although any increase in liability limits and financial responsibility requirements would test the capacity of the offshore drilling insurance market, over time such a change would almost certainly stimulate an increase in insurance capacity. A phased-in approach would allow Congress to re-assess any concerns about limited capacity in the insurance industry in light of actual experience.

Finally, regardless of how insurance is provided, smaller firms could be encouraged to partner with firms with greater financial resources. It should be noted that "joint ventures" between larger and smaller companies already exist; thus a policy change may not be necessary to encourage such arrangements.

2. The Need to Increase Limitations on Payments from the Oil Spill Liability Trust Fund

If liability and financial responsibility limits are not set at a level that will ensure payment of all damages for spills, then another source of funding will be required to ensure full compensation. The federal government could cover additional compensation costs, but

this approach requires the taxpayer to foot the bill. Therefore, Congress should raise the Oil Spill Liability Trust Fund per-incident limit because the current limits are clearly inadequate.

Recommendation

F2: Congress should increase the limit on per-incident payouts from the Oil Spill Liability Trust Fund.

Raising the Oil Spill Liability Trust Fund's per-incident limit will require the Fund to grow through an increase of the per-barrel tax on domestic and imported oil production. An alternative would be to increase the Trust Fund through a surcharge by mandatory provisions in drilling leases triggered in the event that there are inadequate sums available in the Fund. An increase in the Oil Spill Liability Trust Fund's per-incident limit would not provide an incentive to offshore facilities to mitigate risks, because risks are pooled and the Oil Spill Liability Trust Fund is funded by parties other than those who engage in offshore drilling activities. But raising the limit would help ensure that victims have access to compensation without the need to seek further specific funding from Congress, or otherwise burdening the taxpayer.

3. The Need for Better Auditing and Monitoring of Risk

The Interior Department currently determines financial responsibility levels based on potential worst-case discharges, as required by the Oil Pollution Act. Although the agency's analysis to some degree accounts for the risk associated with individual drilling activities, it does not fully account for the range of factors that could affect the cost of a spill, and thus the level of financial responsibility that should be required. Interior should analyze a host of specific, risk-related criteria when determining financial responsibility limits applicable to a particular company, including, but not limited to: geological and environmental considerations, the applicant's experience and expertise, and applicable risk management plans. This increased scrutiny would provide an additional guard against unqualified companies entering the offshore drilling market.

Recommendation

F3: The Department of the Interior should enhance auditing and evaluation of the risk of offshore drilling activities by individual participants (operator, driller, other service companies). The Department of the Interior, insurance underwriters, or other independent entities should evaluate and monitor the risk of offshore drilling activities to promote enhanced risk management in offshore operations and to discourage unqualified companies from remaining in the market.

If liability and financial responsibility limits are raised, increased liabilities will be borne by insurance carriers, which will have a strong incentive to promote new safety techniques and methods, as well as to monitor risk. Insurance carriers might insist on certification of operators by an independent entity devoted to identifying best safety practices and monitoring risk, such as a self-policing safety organization for the oil and gas industry, as

recommended in Chapter 8. Insurers or a self-policing safety organization for the industry also could provide a guard against unqualified companies entering the offshore drilling market.

4. The Need for Assessment of the Existing Claims Process

The Oil Pollution Act holds the responsible party liable for private claims brought by individuals or businesses for removal costs and certain damages. All claims must first be presented to the responsible party, but if the responsible party denies a claim, the claimant may pursue an in-court action or present an uncompensated claim for payment to the Oil Spill Liability Trust Fund. The Gulf Coast Claims Facility (Claims Facility), which is independently administered on behalf of BP (the responsible party), has established a claims processing mechanism that attempts to resolve claims against the responsible party outside of the courts.³¹ Kenneth Feinberg, formerly Special Master for the September 11th Victim Compensation Fund, administers the \$20 billion escrow account through the Claims Facility. Eligible claims include: (1) removal and clean-up costs; (2) physical damages to real or personal property; (3) lost profits or impairment of earning capacity; (4) loss of subsistence use of natural resources; and (5) physical injury or death. The Facility does not pay claims brought by the government, or related to real estate, the moratorium, or the Vessel of Opportunity program.³²

To date, some claimants have been dissatisfied with decisions to deny certain claims and with the amount and timeliness of compensation received from approved claims, which has required Feinberg to reconsider the rules and processes in place for reimbursement. The United States Department of Justice sent a letter to Feinberg on September 17, 2010, urging expediency.³³ In response, the Claims Facility noted that the large number of fraudulent and undocumented claims have slowed the process.³⁴ Nonetheless, after the September 17 letter, Feinberg made several adjustments to the program including streamlining processing time and removing geographic proximity to the oil spill as bar against payment, Feinberg also extended the timeframe within which claimants could receive interim payments without waiving their right to pursue litigation.³⁵ As of December 11, 2010, the Claims Facility has paid more than \$2.4 billion in claims to more than 164,000 claimants.³⁶ The Commission believes it would be useful to evaluate the effectiveness of the Claims Facility as a means of informing the compensation process in future large spills.

Recommendation

F4: The Department of Justice's Office of Dispute Resolution should conduct an evaluation of the Gulf Coast Claims Facility once all claims have been paid out, in order to inform claims processes in future Spills of National Significance. The evaluation should include a review of the process, the guidelines used for compensation, and the success rate for avoiding law suits.

G. Promoting Congressional Engagement to Ensure Responsible Offshore Drilling

The Commission's recommendations in this report include some directed to Congress for specific legislation, and others directed to various specific federal agencies, responsible parties, and the oil and gas industry in general. The several recommendations directed to Congress, however, also highlight a further lesson: the need for Congress to engage more systematically in ensuring the safety of drilling in the OCS and environmental protection. This includes more active congressional oversight, and also includes congressional action to ensure that those in government responsible for safety oversight and environmental protection review have the resources necessary to do their jobs. To that end, this final set of recommendations addresses the need for Congress itself to take affirmative steps to ensure responsible offshore drilling.

1. The Need for Congressional Awareness and Engagement

In the years between the *Exxon Valdez* spill and the spring of 2010, Congress, like much of the nation, appears to have developed a false sense of security about the risks of offshore oil and gas development. Congress showed its support for offshore drilling in a number of ways, but did not take any steps to mitigate the increased perils that accompany drilling in ever-deeper water. Until the *Deepwater Horizon* exploded, 11 rig workers lost their lives, and millions of barrels of oil spilled into the Gulf of Mexico, Congress had not introduced legislation to address the risks of deepwater drilling.

The congressional committee structure makes it much harder to focus on safety and environmental issues associated with offshore oil and gas development. In the 111th Congress, multiple committees in both chambers claimed jurisdiction over offshore energy development. The House Natural Resources Committee, for example, had jurisdiction over "mineral land laws and claims and entries there under" and "mineral resources of public lands." Its Subcommittee on Energy and Mineral Resources was specifically charged with oversight of "conservation and development of oil and gas resources of the Outer Continental Shelf." But the House Committee on Energy and Commerce oversaw "exploration, production, storage, supply, marketing, pricing, and regulation of energy resources, including all fossil fuels," as well "national energy policy generally." Similarly, the jurisdiction of the Senate Committee on Energy and Natural Resources included "extraction of minerals from oceans and Outer Continental Shelf lands," and its Subcommittee on Energy was responsible for oversight of "oil and natural gas regulation" generally. By contrast, the Senate Committee on Environment and Public Works claimed oversight over "environmental aspects of Outer Continental Shelf lands." Yet, during the 110th and 111th Congresses, none of the subcommittees of environment and public works claimed oversight specifically over OCS lands issues.

In neither the House nor the Senate are any of these committees charged with directly overseeing the safety and environmental impacts of offshore development, separate from the conflicting goal of resource development and royalties. The House Committee on

Education and Labor and the Senate Committee on Health, Education, Labor, and Pensions both emphasize occupational safety and health. But neither committee appears to focus on process safety—the vital approach identified by this Commission’s investigation that encompasses procedures for minimizing adverse events such as effective hazard analysis, management of risk, communication, and auditing. Finally, no oversight of any of these matters has been conducted by any of the several House or Senate committees or subcommittees responsible for the nation’s tax policies or overall appropriations process, notwithstanding the significant impact those policies and appropriations have on both the extent of energy industry activities on the OCS and the government’s ability to oversee that activity effectively.

After the *Deepwater Horizon* explosion and resulting oil spill, numerous committees took an interest in offshore safety and environmental issues and held hearings. In short, it took a catastrophe to attract congressional attention.

Recommendation

G1: Increase and maintain congressional awareness of the risks of offshore drilling in two ways. First, create additional congressional oversight of offshore safety and environmental risks. Second, require the appropriate congressional committees to hold an annual oversight hearing on the state of technology, application of process safety, and environmental protection to ensure these issues receive continuing congressional attention.

- The House and Senate Rules Committee should each assign a specific committee or subcommittee to oversee process safety and environmental issues related to offshore energy development. These committees should also be given the task of overseeing the Offshore Safety Authority, the creation of which this Commission has separately recommended.
- Congress should require the Secretary of the Interior to submit an annual public report on energy offshore development activities to the applicable congressional committees. This report should focus on the Department’s progress in improving its prescriptive safety regulations; steps taken by industry and the Department to improve facility management; the Department’s progress in implementing a stronger environmental assessment program, including developing improved NEPA guidelines; and on any other steps taken by industry or the Department to address safety and environmental concerns offshore. The report should also detail the industry’s safety and environmental record during the previous 12 months. Finally, the report should highlight any areas in which the Department believes industry is not doing all that it can to promote safety and the environment and any areas where additional legislation could be helpful to the Department’s efforts.
- Congress should require the Department of the Interior’s Office of Inspector General to submit an independent annual public report to the applicable congressional committees. The report should provide an independent description of the Offshore

Safety Authority's activities over the previous 12 months, including its efforts to improve offshore safety and to investigate accidents and other significant offshore incidents. The report should also include the Inspector General's evaluation of the Authority's efforts and the Inspector General's recommendations for improvement.

2. The Need for Adequate Funding for Safety Oversight and Environmental Review

Many of the earlier recommendations require adequate congressional funding in order to be implemented effectively. For instance, the new Offshore Safety Authority at Interior cannot be expected to succeed in meaningfully overseeing the oil and gas industry if Congress does not ensure it has the resources to do so. Agencies cannot conduct the scientific and environmental research necessary to evaluate impacts of offshore development if they do not receive adequate support from Congress. In short, Congress needs to make funding the agencies regulating offshore oil and gas development a priority in order to ensure a safer and more environmentally responsible industry in the future.

BOEMRE currently receives a portion of its funding from offsetting collections from industry. In its Fiscal Year 2011 Budget Justification, it requested that just less than half of its budget—\$174.9 million—come from these collections.³⁷ The oil and gas industry, however, should do significantly more and provide the funds necessary for regulation of offshore oil and gas operations and oil spill preparedness planning. The amount of funding needs to keep pace as industry moves into ever-more challenging depths and geologic formations because the related challenges of regulatory oversight likewise increase. This could be accomplished many different ways. Congress could, for instance, raise the inspection fees already imposed on facilities operating on the OCS—currently offsetting about three percent of BOEMRE's annual budget—or impose a differently based annual regulatory fee on new and existing leases. Or Congress could instruct the Department of the Interior to include lease provisions that require the imposition of regulatory fees. Interior already possesses broad authority to include in leases "such rental and other provisions as the Secretary may prescribe at the time of offering the area for lease."³⁸ No matter the precise mechanism, the oil and gas industry would be required to pay for its regulators, just as fees on the telecommunications industry support the Federal Communications Commission. Regulation of the oil and gas industry would no longer be funded by taxpayers but instead by the industry that is being permitted to have access to a publicly-owned resource. Future Congresses would therefore have less incentive to reduce agency funding.

Recommendation

G2: Congress should enact legislation creating a mechanism for offshore oil and gas operators to provide ongoing and regular funding of the agencies regulating offshore oil and gas development.

The President asked this Commission to recommend not only “improvements to Federal laws, regulations, and industry practices applicable to offshore drilling,” but also “organizational or other reforms of Federal agencies or processes necessary to ensure such improvements are implemented and maintained.” In carrying out this charge, the Commission has been mindful of the dangers of “fighting the last war”: that is, addressing the specific failures revealed by the *Deepwater Horizon* disaster, but neglecting to anticipate future problems whose contours are yet unknown. Our recommendations—for a new approach to risk assessment and management; a new, independent agency responsible for safety and environmental review of offshore drilling; stronger environmental review and enforcement; a reorientation of spill response and containment planning; and a revision of liability rules to better protect victims and provide proper incentives to industry—aim to establish an oversight regime that is sufficiently strong, expert, well-resourced, and flexible to prevent the next disaster, not the last. The oil and gas industry—remarkable for its technological innovation and productivity—needs government oversight and regulation that can keep pace.