BIPARTISAN POLICY CENTER

August 25, 2010

The Honorable Bob Graham and William H. Reilly
Chairmen
Mr. Richard Lazarus
Executive Director
National Commission on the BP Deepwater Horizon
Oil Spill and Offshore Drilling
1 Thomas Circle, Fourth Floor
Washington, DC 20005

Dear Chairmen Graham and Reilly and Mr. Lazarus,

On July 27, 2010, the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling requested that the Bipartisan Policy Center "assist the Commission in its consideration of the use of moratoria as a method for mitigating future harm in the immediate aftermath of a spill." In particular, the Commission requested that the Bipartisan Policy Center identify the appropriate questions for the federal government to consider in determining which of the suspended activities could safely resume if the moratorium were lifted.

To provide timely input to this request, the Bipartisan Policy Center formed a small, diverse working group of energy and environmental experts. Working Group members are as follows: [1]

- Jason Grumet, President of the Bipartisan Policy Center and Executive Director of the National Commission on Energy Policy
- Richard Haut, Ph.D., Senior Research Scientist at the Houston Advanced Research Center and Principal Investigator for the Environmentally Friendly Drilling Program, former Deepwater Integrated Technologies Manager at Halliburton Energy Services Group
- Elgie Holstein, Senior Director for Strategic Planning at Environmental Defense Fund, former Chief of Staff at U.S. Department of Energy
- Joe Perkins, former Global Management Development Director at Schlumberger
- Norm Szydlowski, President and Chief Executive Officer of SemGroup Corporation, former President and Chief Executive Officer at Colonial Pipeline Company, former Vice President of Refining at ChevronTexaco

[1] Working Group members are serving in their capacity as individuals and not on behalf of current or former employers or organizations.

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Jason S. Grumet, President

To gain a better understanding of the complex issues involved, the Working Group solicited additional information from a wide range of experts. The Working Group distributed an initial questionnaire addressing drilling risk management, operational and safety practices, response capacity, and drilling control systems (See Attachment A). The questionnaire was circulated to a wide array of individuals including industry representatives, academic experts, professional organizations, environmental groups, and Non-Governmental Organizations. We received detailed responses from 16 organizations representing a diversity of viewpoints. To encourage submission of detailed, forthright, and timely input, no particular responses are attributed to individual respondents. The Working Group also conducted a series of conference calls and in-person meetings to consult with leading experts on specific issues. Respondents and technical advisors are listed in Attachment B. However, the Working Group is solely responsible for the content of the report.

Building on the broad experiences of the Working Group members and the information gathered through the above process, we have identified a narrow set of questions relevant to the moratorium. While we did not attempt to provide comprehensive answers to all of the queries, the enclosed memo reflects our consensus view of the relevant information and insights gained over the last four weeks. Thank you for this opportunity to serve the Commission and the country in considering this important issue.

Sincerely,

Jason Grumet

Richard Haut

Elgie Holstein

Joe Perkins

Norm Szydlowski

Overview

The Deepwater Horizon Incident

The BP Oil Spill is the largest marine oil spill in history and has caused severe environmental and economic harm. It is widely understood that a full recovery will take time and effort. Even though the well has been capped, the spill continues to pose a threat to marine and wildlife habitats, fishing, tourism, and other commercial industries.

This catastrophic oil spill is a reminder of the risks associated with fossil fuel exploration and production. As efforts to encourage a transition to cleaner domestic energy sources continue, oil will play a significant role in the U.S. energy mix for years to come. Therefore, we must balance the risks and opportunities of domestic oil production, including the benefits of reducing our reliance on imported oil, against the economic and environmental risks of producing it.

One of the central requirements of this task is to ensure that effective regulatory and operational regimes are in place – and that they evolve over time – to safeguard workers, the environment, and the economy from catastrophic accidents such as the Macondo well blowout of April 20, 2010. In the case of that accident and its aftermath, both industry and government failed to meet that requirement. Now, both industry and government bear a responsibility to ensure that all reasonable precautions are taken to prevent a repetition of the Deepwater Horizon disaster.

One of the tasks of The President's Oil Spill Commission is to outline a path forward for offshore drilling. That path must restore the public's trust and confidence in the oil industry's ability to safely carry out its work, and in the government's ability to establish and ensure compliance with rigorous safety protocols that significantly reduce the risk of future serious accidents and spills. If all parties cooperate in a common spirit of determination and mutual responsibility, we believe that this important work can be accomplished.

The Moratorium on Deep Water Production

To ensure a comprehensive review of drilling practices, safety protocols, and government regulations, Secretary Salazar imposed a six month suspension of all offshore drilling activities in waters deeper than 500 feet on May 30. The Secretary concluded that a moratorium "is

required to mitigate a clear threat that additional deepwater drilling poses of serious, irreparable, or immediate harm to life, to property, or to the marine, coastal, or human environment." In response to legal challenges, the Obama Administration reissued the moratorium using technology-specific characteristics rather than water depth. The new criteria effectively maintained the prohibition on deep water drilling while seeking to permit continued shallow water operations.

The moratorium, which required all active deepwater wells to cease operations at the next safe opportunity, has been highly controversial. Critics point out that it exacerbates spill-related job losses in the Gulf and that there are risks inherent in unplanned cessations of active drilling operations and eventually re-entry into wells. They also argue that delays in producing oil from the 33 affected wells cause an offsetting increase in imports.

While we have not sought to review the government's rationale for imposing the moratorium, we understand that it is something of a blunt response and that it is viewed by some as an overreaction. However it is regarded, we believe that the moratorium reflects how unprepared both government and industry were for an incident of this magnitude. Our inquiry focuses on the efforts undertaken by government and industry during this critical period to address the regulatory and operational shortcomings that contributed to the Macondo well disaster.

Working Group Focus

In order to resume deepwater oil and gas production the regulators and the public must have confidence in the industry's ability to prevent, contain, and respond to another spill. We recognize and support the Department of Interior's (DOI) efforts to substantially overhaul the structure and functions of the newly realigned Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEM), to reconsider its overarching regulatory approach, and to encourage all operators to create and sustain corporate cultures that prioritize safety. We also commend the collaborative efforts of industry leaders to develop significantly enhanced prevention, containment, and response capacity in the Gulf of Mexico. We will share several thoughts on these long-term directions, but the focus of our inquiry is whether the combination of recent and near-term actions to improve existing prevention, containment, and response capabilities are adequate to support resumed production while these larger reforms are instituted in the coming months and years. Based on our interviews and analysis, we believe the following questions in the areas of prevention, containment, and response can and must be addressed prior to lifting the moratorium.

Prevention

Key Questions

- Do the increased safety measures required by Notice to Lessees No. 2010-NO5 (NTL 5), Notice to Lessees No. 2010-NO6 (NTL 6), and the anticipated Department of Interior Safety and Environmental Management Systems (SEMS) rule and Interim Final Rule, represent reasonable and appropriate standards?
- It appears that DOI may recommend a hybrid approach to operator oversight, combining key elements of a performance-based safety case and more prescriptive regulatory approach. Does this hybrid represent an effective and expeditious approach to making decisions regarding the status of an operation under the moratorium?
- Are there additional risk management and regulatory strategies that should be evaluated or implemented over either the near- or long-term?
- Will requiring additional real-time monitoring, reporting, or data logging lead to a safety improvement? Is it viable in the next 3-6 months?
- Are BOEM's SEMS and Interim Final Rule, along with compliance with NTL 5 and 6 likely to produce in the next 3 months steps that will encourage a sufficiently protective safety culture?
- Are the BOEM and the United States Coast Guard (USCG) appropriately prepared and resourced to aggressively enforce these new requirements in a timely manner?

Discussion

Extraction technology has made tremendous advances over last 30 years as oil and gas companies pursue significant resources in deep-water, high-pressure zones, particularly in the Gulf of Mexico. The industry has drilled over 14,000 deepwater wells globally. Despite these advances, the Deepwater Horizon incident clearly illustrates that industry and government's oversight, containment, and response capacities have not kept pace.

In this dynamic environment, risk management and oversight must be improved with the development of performance-based safety requirements and implementation of practices and policies that encourage continual improvement. DOI has been working to establish new requirements to improve and ensure the safety of existing and future wells. New requirements include the Department of Interior's 30-Day Safety Report, NTLs 5 and 6, the soon-to-be-released SEMS Rule, and the broader Interim Final Rule that is anticipated by the end of September. Over the longer term, we support the implementation of a "safety case" regulatory

approach as a complement to these new, more rigorous requirements. The safety-case approach is discussed below.

Improved Safety Requirements

While numerous questions remain about the adequacy of DOI's past oversight, the Department should be commended for its far-reaching effort over the past three months to improve the safety of deepwater exploration and production. The 30-Day Safety Report recommends measures specific to blowout preventers (BOP), well integrity, well control, and safety culture. NTL 5 establishes a series of immediate requirements for BOP configuration, inspection, 3rd party certification, and other equipment verification. NTL 6 requires that lessees address the possibility of a blowout, calculate the worst-case discharge scenario, and design adequate prevention measures. The accompanying DOI FAQ documents attempt to clarify the new requirements and expectations to ensure efficient implementation. The SEMS rule requires operators to develop four key elements of safety and environmental protection strategies: hazard analysis, management of change, operating procedures, and mechanical integrity. The Interim Final Rule is expected to address a range of critical aspects related to drilling practices and blowout prevention, including requirements for BOP systems and for well casing and cementing.

Based on a wide array of commentary and our own review, we believe that the increased DOI safety measures represent a reasonable and appropriate near-term framework to mitigate the risks associated with deepwater drilling.

It will take time for industry to comply with these requirements, secure 3rd party certification, and obtain authorization to redeploy rigs and equipment. The amount of time required to comply with this new regime will not be uniform for all rigs, for all operators, or for all wells. Newer rigs are expected to largely comply with new configuration requirements while older rigs may require considerable modifications.[2] However, concerns have been raised over the availability of qualified 3rd party certifiers. It is unclear how quickly BOEM will be able to evaluate and approve any required new permits. While it is technically possible that some rigs would be able to resume production in a matter of weeks, it will likely take several months or longer for all 33 wells impacted by the moratorium to fully comply with the stringent new standards.

DOI should strive to ensure the clarity of new regulations so that industry can safely and effectively implement the requirements. As is the case with any new regulatory regime, it will

[2] 12 out of the 33 deepwater rigs have been constructed in the last five years.

take DOI and industry some time to develop an efficient and effective compliance regime. While there are substantial differences between drilling operations in shallow and deep water, shallow water operators' experience complying with NTLs 5 and 6 suggests there are issues that require the joint attention of the industry and DOI. We understand from comments received and public reports that despite considerable efforts by DOI and numerous interactions with industry regarding NTL expectations, almost all shallow water permits for new wells are still pending. Only three permits for new wells, as opposed to side or workover wells, have been issued since the Deepwater Horizon incident and no wells have successfully demonstrated compliance with both NTLs 5 and 6. DOI should identify the causes of this delay and consider their relevance to deepwater compliance with NTLs 5 and 6. The Interim Final Rule should provide added clarity to these new requirements. While we do not support the dilution of any of these requirements for purposes of mere expedience, DOI should adopt a strategic approach to reviewing industry compliance with new safety requirements to ensure that, wherever possible, the safe resumption of drilling does not take an undue amount of time.

Safety Case

A Safety Case is a documented, facility-specific demonstration of how major safety and environmental risks are prevented or mitigated at a production site or rig. The 30-Day Safety Report indicated that DOI is likely to adopt safety case requirements for floating drilling operations in the Outer Continental Shelf in its Interim Final Rule. The safety case merges both common and facility-specific requirements to ensure that all necessary analyses are completed and that all barriers and safeguards are in place and functioning. The goal of the safety case is to manage risks to as low as reasonably possible (ALARP). Through the course of our investigation, there was a consistency of view that a safety case approach represents an important potential improvement to the existing regulatory regime in the United States.

The United Kingdom implemented a safety case approach as a response to the Piper Alpha explosion that destroyed a North Sea platform and killed 167 on July 6, 1988. Several other countries, including Australia, Canada, and Norway use a safety case approach. Many multi-national oil and gas companies prepare safety cases for other jurisdictions and have indicated that, while a safety case is not currently required in the U.S., they have adopted a similar approach for their operations in the Gulf.

However, experience in implementing the safety case in other countries suggests that this will require a significant transition for both the regulator and industry. In the UK's experience, it took approximately four years to fully implement a new regulatory approach based on a safety case. DOI will need the resources and experience to oversee a safety case regime. As the UK

implemented the safety case, the regulatory entity had to secund technical staff from the industry in order to ensure sufficient, qualified staff in the early years. While it is not yet clear how DOI intends to begin incorporating safety case requirements, we believe, based upon input received, that the highest-value component of a safety case that can be implemented in the near-term is improving owner-operator interactions.

The American Petroleum Institute (API) and the International Association of Drilling Contractors (IADC) are collaborating to produce a Well Construction Interface Document (WCID) intended to align the owner and operator safety management programs. The goal of the WCID is to link the safety case to existing well design and construction documents and improve owner-operator alignment regarding management of change (MOC) and well execution risk assessments.

The WCID appears to represent an effective and expeditious approach to gaining the near-term benefits of a performance-based safety approach while pursuing full implementation of the safety case. To ensure longer-term implementation of the safety case, DOI should establish a clear multi-year roadmap for safety case implementation to augment current regulatory requirements.

Adequacy of Regulatory Resources

Our working group did not examine the adequacy of Department of Interior, U.S. Coast Guard, or Department of Homeland Security (DHS) resources and expertise. However, this issue was a key concern for several stakeholders. We recognize that ensuring a modern and robust regulatory capacity requires significant human and technological resources. In particular, DOI will require additional resource to effectively implement a safety case approach. It is essential that all federal agencies involved in regulating and permitting offshore oil and gas operations receive adequate funding and sufficient staff with appropriate scientific and technical expertise to carry out their expanded responsibilities.

Corporate Culture

We heard repeatedly that a robust corporate safety culture was essential to effective execution of a risk management system. Key aspects of safety culture identified by several experts include self-audits of safety operations through internal and 3rd party auditors, stop work authority, systematic risk assessment tools, behavior-based safety procedures, and a contractor competency verification process. Despite repeated attempts to improve safety behaviors, investigations into recent catastrophic events suggest that the common failure is lack of an effective safety culture. A recent analysis by the statutorily created Research Partnership to

Secure Energy for America (RPSEA) identifies the key systems required to support a safe and productive workplace, which include: qualified staff, a supportive organizational and team culture, integrity of work processes, clear performance expectations and the resources necessary to sustain these processes, and an emphasis on continuous improvement.[3] Development and review of the safety case should identify areas where new solutions to correct behavioral shortfalls and sustain safety-driven corporate cultures may be required.

Institutional Infrastructure

We commend Chairmen Waxman and Stupak for requesting a Chemical Safety Board (CSB) investigation of the causes of the Deepwater Horizon incident. The CSB is an independent federal agency charged with conducting root cause investigations of chemical accidents at industrial facilities. This is the first instance in which the CSB has investigated a deep-water drilling accident, but the CSB believes it has legal authority to conduct such an investigation. We support their involvement because we believe that the CSB is well-suited to provide insights into shortcomings of corporate safety culture and oversight that were clearly contributors to this disaster.

It also appears to us that offshore oil and gas development has less architecture for independent oversight as compared with other industries involved with unique hazards, including the chemical and nuclear industries. Experience in these industries demonstrates the importance of non-regulatory oversight boards in sustaining safety culture and preventing accidents. It remains unknown what long-term oversight role the CSB may have in the upstream oil and gas industry. Nonetheless, we believe that the engagement of an expert, third-party oversight panel, such as the CSB, on an ongoing basis adds a valuable and objective perspective to monitor industry practices and the efficacy of the government's regulatory efforts. Accordingly, we recommend that CSB, or a comparable institution, should receive sufficient resources and adequate authority to allow it to provide the institutional oversight necessary to ensure continuous improvement in regulations, operations, and safety.

Real-Time Monitoring

Real-time monitoring has been discussed as a tool to increase oversight of drilling operations in the Gulf of Mexico. Operators perform real-time monitoring of critical data during drilling operations. Many operators and service companies currently operate real-time data centers onshore to monitor indicators for their offshore drilling activities. Key data collected typically

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[3] The Research Partnership to Secure Energy for America. *Research and Technology for Deepwater Development: Addressing Accident Prevention, Response & Environmental Impact Assessment.* August 2010. Pages 37-39.

include flowrates, pressures, temperatures, loads on the well, subsea equipment, risers, and pipelines, and formation properties while drilling.

The best data centers have real-time access to well information and are staffed by individuals with the expertise to analyze data for the integrity of well design and drilling processes. Included in this structure is effective alarm management. With these real-time monitoring systems in place, companies are better able to anticipate, address, and respond to any anomalies or emergencies that may arise.

To provide meaningful safety advantages, it is essential to ensure that the data being collected is processed and used to inform sound decision-making. Toward this end, DOI should pursue three steps to improve the usefulness of this technology. First, DOI should enumerate the minimum data to be collected and should consider requiring all operators to keep active logs of real-time data that are available for inspection. Second, on-site engineers should be required to identify any anomalies and indicate what response was taken. Lastly, DOI should require real-time access by technically qualified regulators to logged data, while being cognizant of concerns regarding confidential business information and security. We believe that the ability of DOI officials to access and monitor data from drilling operations in real-time could greatly benefit the overall drilling safety and corporate culture.

Containment

Questions

- Building on the experience of Deepwater Horizon containment efforts, is the industry currently prepared to contain a future blowout or worst-case discharge scenario?
- Can the current containment capacity in the Gulf of Mexico be sustained? What regulatory, legal, or contractual arrangements would support a sustained containment presence in the Gulf of Mexico
- Does the current containment capacity in the Gulf of Mexico reflect the state of the art technology and organizational response?
- What can the Marine Well Containment System or some other industry arrangement realistically deploy in a timeframe parallel to compliance with NTL 5, NTL 6, and the Interim Final Rule?
    - What can DOI or USCG do to ensure the preservation of existing response equipment?
- Is there a role for the federal government in supporting R&D for new containment and response technologies?

Discussion

The Deepwater Horizon blowout required a response that exceeded industry and government containment capacity. Despite extraordinary efforts by government and industry, it took 107 days to contain the Macondo well. To address this inadequacy in well containment systems, a joint industry initiative led by Chevron, ConocoPhillips, ExxonMobil, and Shell has established the Marine Well Containment (MWC) Company to rapidly develop advanced containment capacity. The MWC effort is commendable for its breadth – enhanced near-term response capacity and ongoing R&D – and aggressive 18-month timeframe for comprehensive response capacity. The principal companies involved in the MWC have encouraged participation from all industry parties. DOI should support these cooperative efforts to ensure that all operators have a vested interest in the MWC and have access to the critical new equipment under development.

Over the next six months, the MWC plans to identify and secure available equipment, including containment caps, manifolds, risers, modules, vessels and other components. The MWC should be encouraged to acquire as much of the BP containment equipment as is able to be refurbished and reused and should consider contracting with containment vessels that BP releases. The forward staging of this equipment and collaborative deployment strategies will represent significant improvement in containment capability. The new equipment that will arrive over a period of 6 to 18 months will continually improve the MWC's containment capability.

Over the course of the last four months, BP, government, and industry experts have developed considerable knowledge and physical infrastructure to respond to deepwater incidents. To maintain and build upon the current containment capacity, all critical containment equipment must be preserved and pre-staged. DOI should work expeditiously with BP to ensure that the containment equipment and infrastructure developed to address this tragedy is available for containment efforts in the Gulf in the same timeframe as compliance with NTLs 5 and 6 and the anticipated Interim Final Rule. Based on the expectation that this knowledge and equipment will be available to all deepwater operations, the industry should be able to respond to a similar incident with far greater speed and effectiveness.

New DOI requirements also improve containment planning and capability. NTL 6 requires companies to submit blowout scenario and worst-case discharge scenario descriptions, including planned measures to prevent a blowout. DOI should work collaboratively with the MWC to ensure deployment of sufficient containment capacity to address all plausible worst-case scenarios.

Even as industry and government strive to reduce risks to as low as reasonably possible, the best efforts with regard to prevention and containment cannot eliminate the possibility of an unpredictable or unfortunate combination of events. A July 6, 2010 Report by the Joint Industry Task Force identifies two such conditions. "If a damaged rig sinks on the wellhead, or if a broach results in multiple, widely spaced flows to the seafloor, or there is a debris field, a system to collect the oil becomes difficult to design and build in advance." The MWC has also identified these scenarios and is developing "capture caissons," and other equipment for sea floor connections.

Continuous improvement of risk management and prevention, as well as containment and response, must remain a high-priority regulatory and operational principle for both government and industry. We commend the MWC for their commitment to ongoing R&D. We also believe DOE, in partnership with industry, should expand its focus concerning oil and gas operations to include development of advanced containment and response capabilities. Alternatively, a joint working group led by BOEM with participation by USCG, DOE, and EPA should establish and implement a process improvement and R&D agenda for advanced containment and response.

Key areas for R&D include flow measurement methods to better quantify the volume of oil released, riser technologies, well control intervention, innovative kill methodologies, and understanding the creation and maintenance of a culture of safety. Oil sensing and monitoring technology is critical to improving source intervention and containment, as well as managing environmental impacts. Advanced riser and well control technologies will improve an operator's ability to respond to a blowout scenario and to rapidly and dynamically deploy containment systems.

In the near-term, however, the critical question is whether the industry and government can effectively contain a deepwater blowout in the unlikely event of another serious accident. Taken as a whole, the prevention and containment requirements discussed above, in addition to an industry and federal commitment to continuous improvement, represent a significant increase in capacity to respond to an incident in the Gulf of Mexico.

Response

Questions

- Reflecting on the experience of Deepwater Horizon response efforts, is the industry currently prepared to respond to a spill of equal magnitude?

- How can refined scenarios for worst-case incidents and worst-case discharge required by NTL 6 be rapidly incorporated into response plans?
- Are all companies drilling in the Gulf of Mexico, including small producers, equally capable of executing adequate worst-case scenario response plans?
- What can DOI or USCG do to encourage existing human capital and physical infrastructure (including containment ships) to remain in the region in order to ensure sufficient capacity to respond quickly and effectively in the event of a future spill?
- What regulations or incentives can be instituted to ensure sufficient response management and mobilization capability for both industry and the federal government?
- How can lessons learned in the Deepwater Horizon incident be most efficiently applied and preserved to improve response technology options in the long-term?
- Are current efforts to test and approve dispersants adequate?

Discussion

As with any energy source, the risks associated with oil production can never be entirely eliminated. However, the failure of response systems to improve alongside advances in exploration technology is glaring. The lack of focus on response capabilities was reflected in our engagement with experts and interested parties over the past four weeks. In the written responses to our questions, response technologies and management received substantially less attention than prevention and containment.

There are several lessons learned from the recent incident and the resulting DOI requirements that can be immediately incorporated into improved response capacity. The refined scenarios for worst-case incidents and worst-case discharge required by NTL 6 should be rapidly incorporated into response plans. In addition, the lessons learned from the Macondo accident should be reflected in the Oil Spill Removal Organization (OSRO) contracts required by the National Contingency Plan (NCP). All three OSROs active in the Gulf of Mexico are participating in the cleanup of and gaining important knowledge from this incident. It is evident that, at minimum, OSRO response capacity should include fire-rated boom and equipment to conduct large-scale in-situ burning operations, effective large volume skimming operations, processes for managing vessels of opportunity, and enhanced dispersant techniques to lower volatile organic compounds (VOCs) for responder safety and to improve effectiveness of subsea application.

As the cleanup effort continues, the USCG should inventory key resources and companies involved in the response effort and consider incentives for companies to maintain any equipment and required OSHA training for cleanup crews. To maintain near-term response

capacity, DOI and USCG should also seek mechanisms to encourage existing human capital and physical infrastructure (including containment ships) to remain accessible in the region.

In addition, the BOEM, USCG, and industry should consider expanding the collaborative Marine Well Containment Company to encompass a public-private partnership addressing key response needs. Individual company response plans and resources are adequate for most incidents. In the event of a spill of national significance (SONS) however, it is critical to produce a surge in response capacity in the affected region. Maintaining such a surge capacity is beyond the resources of any one individual company. The MWC or a similar industry collaborative, in partnership with BOEM and USCG, could contract for assets, equipment, and multi-purpose vessels that will be immediately required in the event of a significant spill. Multi-purpose, retrofit-ready vessels with adequate infrastructure to ensure the most effective and flexible application of skimming operations, dispersants, and other response equipment should be thus available to be dispatched within the critical 72-hour period following a SONS. This public-private partnership should also strengthen management capacity and decision-making authority to ensure deployment of appropriate assets necessary to begin containment and collection of spilled oil within a few hours of the incident.

Longer-term evaluation of the BP Oil Spill response should assess how the USCG, DOI, and the Unified Command as a whole performed. Responsible federal agencies should maintain adequate resources to improve response capacity and to pursue additional long-term improvements. Important facets of the USCG's response obligations include maritime firefighting and rescue. In the event of a maritime fire, the USCG's role is to coordinate firefighting. Response to an explosion and fire of this magnitude should be better coordinated into overall response plans and the USCG should emphasize large-scale training exercises and implementation. The USCG must also improve planning and training for lifesaving missions as required by the Deepwater Horizon explosion. Resources must be dedicated to improving preparedness and ensuring that critical equipment can be immediately dispatched.

There are also several key areas that will require longer-term R&D, including subsurface surveillance and protocols to approve and monitor dispersants. The response to the BP oil spill applied an unprecedented volume of subsea dispersants. Because very little is known about the long-term environmental impacts of subsurface dispersant use, improved subsurface testing and surveillance can support more informed decision-making about dispersant development and application. It is critically important for the government to better understand the environmental impacts of dispersants and the degree to which they can be appropriately and effectively applied in large volumes and in deepwater environments.

Broadly speaking, response capacity at this scale of incident appears inadequate across the entire industry and around the world. However, if the majority of response equipment remains pre-positioned in the region, and if it is supplemented over time with improved technology, the industry and federal agencies will be better situated than ever before to respond to a major spill in the Gulf.

Conclusion

The Department of Interior's drilling moratorium has served the productive purpose of allowing time for both industry and government to prepare for a safer, more vigilant, and dependable future for U.S. offshore drilling. We believe DOI and the industry have used this time effectively to develop a new regulatory regime for drilling in the Gulf of Mexico. At the same time, we readily agree with the oft-made point that drilling risks cannot be reduced to zero. But we are satisfied that compliance with the Interior Department's NTLs 5 and 6 and other actions by the Department will achieve a significant and beneficial reduction of risk. If industry is diligent in incorporating these requirements and DOI is vigilant in oversight and enforcement, we believe this new regime will provide an adequate margin of safety to responsibly allow the resumption of deep water drilling in the Gulf of Mexico.

It is important to reiterate that compliance with these new requirements will pose greater challenges for some operators than for others. Moreover, it is possible that the costs and technical sophistication needed to comply with these new requirements may discourage some rigs and companies from future operation in the Gulf of Mexico. Although this outcome would be unfortunate, we believe it is imperative that all companies be held to a consistent and rigorous set of safety requirements. While we appreciate the costs of delay, we urge DOI to use all due caution to ensure effective compliance with this new regulatory regime. Moreover, a focus on resumption of deepwater drilling should not distract from the need to implement longer-term measures identified throughout this document.

Government and industry must commit to the use of best practices and a process of continual improvement in regulatory oversight, equipment, testing protocols, training, and containment and response planning and coordination. They must also enable the participation of outside experts to offer continuing advice and input. Research and technology development programs need to be expanded without diluting current efforts. If these goals are embraced across industry and throughout government, we believe a new culture of safety and prudence will take hold. Implementation of a safety-case requirement as a complement to specific regulatory requirements is strongly encouraged.

To ensure that the intended risk reduction, regulatory clarity, and aggressive oversight are achieved in practice, we encourage the Commission to consider the merits of proposing an independent panel of experts to monitor implementation of the new regulatory requirements, industry practices, and technology deployment.

Finally, we recommend that the industry and the federal government commit to a new, higher level of transparency, cooperation, operational excellence, and technology research and development. We ask that the enthusiasm for finding and developing new energy resources be matched by a heightened sense of responsibility – one that will become the international standard for worker safety and environmental protection.

Attachment A: Working Group Questionnaire

The Working Group distributed the following questions to a wide array of experts including industry representatives, academics experts, professional organizations, environmental groups, and Non-Governmental Organizations. We received detailed responses from 16 organizations representing a diversity of viewpoints and backgrounds. Respondents are identified in Attachment B.

1. Are drilling risk management processes adequate for deep water? Are there meaningful differences in the risk profiles of different offshore oil and gas wells subject to the moratorium? What specific criteria distinguish the risk profiles of different offshore wells? In classifying different risk profiles, especially those you consider 'high-risk', please comment on water depth, pressure, and geologic horizon and whether the well is in exploration, development or production phase.

2. What are the operational and design best practices both domestically and outside of the United States for offshore drilling? Are the current safety and environmental management systems adequate for deep water? Specifically, what is the current portfolio of technology available to minimize drilling risks, and how often and where is it being used? What is the best practice process for approving and making design and operational modifications? Anticipating failure scenarios? Implementing quality control and quality assurance of components? Regulatory processes and approvals? How should regulations evolve to handle changing deepwater technology and drilling horizons?

   For front line employees and operational managers directly involved in critical operations either on the well or in the office, how are their financial incentives, if any, structured today? Are there structural changes to compensations practices that would ensure that there are not unintended consequences to reward employees who take shortcuts on operational and safety procedures? Are there other safety best practices? How will best practices be routinely shared across companies?

3. Is the current response and restoration capacity sufficient to respond quickly and effectively in the event of a future spill? What rapid response capabilities and resources are needed to effectively respond to another oil spill? Is there a need to pre-position this equipment in order to respond to a spill in an accelerated timeframe? Does the

announced Marine Well Containment Company fulfill the need?[4] Are the spill prevention, control, and countermeasure plans adequate for deep water incidents?

4. What control systems and protocols are used to ensure the safety of offshore drilling operations? Do these systems utilize real time data? Do these systems permit off-site monitoring and remote operation, including the ability to shut down drilling activity? How easily could off-site, on shore monitoring facilities be established to enable third party experts and inspectors to monitor drilling activities and well conditions? Are there financial, or proprietary, or other barriers to third-party monitoring? To what degree should third party experts monitor the adequacy of oil spill prevention equipment, procedures, and practices? Similarly, to what extent should third party experts monitor the adequacy and effectiveness of oil spill response equipment, procedures and practices?

[4]Planned, $1 billion response capability announced by ExxonMobil, ConocoPhillips, Chevron and Shell.

Attachment B: Respondents, Technical Advisors, and Staff Support

The Working Group is solely responsible for the content of the report and none of the respondents or advisors should be held responsible for or presumed to support any assertions, findings, or conclusions contained therein.

Questionnaire Respondents

American Association of Petroleum Geologists
American Society of Mechanical Engineers
Behavior Science Technology, Inc.
Chevron North America Exploration and Production Corporation
Consortium for Ocean Leadership
Det Norske Veritas (USA) Inc.
Diamond Offshore Drilling
Donald L. Paul, Ph.D., Executive Director of the USC Energy Institute and William M. Keck Chair of Energy Resources
International Oil and Gas Producers
Jerome Schubert, Ph.D., PE, Associate Professor and Larry A. Cress ’76 Faculty Fellow, The Harold Vance Department of Petroleum Engineering, Texas A&M University
Larry R. Grillot, Ph.D., Dean and Lester A. Day Family Chair, College of Earth and Energy, University of Oklahoma
M&H Energy Services
Shell Global
Society of Petroleum Engineers
Stress Engineering Services, Inc.
Technology International

Technical Advisors

We appreciate the technical expertise of the following individuals.

Jack Belcher, Partner at EnergyNorthAmerica, LLC. Previously, Mr. Belcher served as the Regulatory Affairs and Policy Manager for Shell’s Exploration & Production operations in North America and as the Staff Director for the Subcommittee on Energy & Mineral Resources, US House of Representatives.

Stan Christman, former Engineering Advisor, worldwide drilling, ExxonMobil Development Co. Prior to that position, Mr. Christman spent 38 in various roles at Exxon, including as Drilling Technology Manager and Operations Technology Manager.

Mike Eagan, Research Scientist/Visiting Scholar at the George Washington University Institute of Crisis, Disaster, Emergency and Risk Management. Previously, Mr. Egan served as Chief Scientist at System Planning Corporation (SPC) and the Director of the SPC Center for Border and Transportation Security. Mr. Egan also served in the U.S. Coast Guard as a commissioned officer.

Phil Grossweiler, Principal Consultant, M&H Energy Services. Mr. Grossweiler spent 33 years in various positions at Exxon Corp., including positions as Research Team Leader and Environmental Team Leader, and is also a former U.S. Coast Guard Commander.

Rich Kessler, President of Dow Lohnes Government Strategies. Previously, Mr. Kessler was the chief of staff to House Energy and Commerce Committee Chairman John D. Dingell (D, MI) and also served as a professional staffer handling energy and environmental issues on the House Energy and Commerce Committee.

Staff Support

In addition, the Working Group would like to acknowledge the efforts of the staff at the Bipartisan Policy Center, the Houston Advanced Research Center, and the Research Partnership to Secure Energy for America.

The **Bipartisan Policy Center (BPC)** is a non-profit organization founded by former Senate majority Leaders Tom Daschle, Bob Dole, Howard Baker and George Mitchell to develop and promote bipartisan solutions that can attract the public support and political momentum to achieve real progress. Currently, the BPC focuses on issues including health care, energy, national and homeland security, transportation, science and economic policy. More information is available at www.bipartisanpolicy.org

The **Houston Advanced Research Center (HARC)** is a not-for-profit organization based in The Woodlands, Texas dedicated to improving human and ecosystem well-being through the application of sustainability science and principles of sustainable development. HARC's mission is to move knowledge to action to improve human well-being and the environment.

In a non-partisan and collaborative manner, HARC is a conduit from basic research to action that fosters the implementation of policies and technologies based on rigorous principles of social science, natural science, and engineering. HARC's research themes support sustainability solutions in ecosystems, water, air & climate, clean energy, the built environment, and environmental health.

The **Research Partnership to Secure Energy for America (RPSEA)** is a non-profit corporation established to help meet the nation's growing need for hydrocarbon resources produced from reservoirs in America.

RPSEA is a non-profit corporation formed by a consortium of premier U.S. energy research universities, industry and independent research organizations. RPSEA's mission is to provide a stewardship role in ensuring the focused research, development and deployment of safe, environmentally sensitive technology that can effectively deliver hydrocarbons from domestic resources to the citizens of the United States.