DEEPWATER HORIZON: OIL SPILL PREVENTION AND RESPONSE MEASURES, AND NATURAL RESOURCE IMPACTS

(111–112)

HEARING

BEFORE THE

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE HOUSE OF REPRESENTATIVES

ONE HUNDRED ELEVENTH CONGRESS

SECOND SESSION

May 19, 2010

Printed for the use of the
Committee on Transportation and Infrastructure

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May 17, 2010

SUMMARY OF SUBJECT MATTER

TO: Members of the Committee on Transportation and Infrastructure

FROM: Committee on Transportation and Infrastructure Staff

SUBJECT: Hearing on "*Deepwater Horizon*: Oil Spill Prevention and Response Measures and Natural Resource Impacts"

PURPOSE OF THE HEARING

The Committee on Transportation and Infrastructure will meet on May 19, 2010, at 10:00 a.m., in room 2167 of the Rayburn House Office Building to examine the circumstances surrounding the ongoing spill of crude oil from the well site in the Gulf of Mexico where the *Deepwater Horizon*, a mobile offshore drilling unit (MODU), had been drilling. Among other issues, the Committee will examine the Coast Guard's work with the Minerals Management Service (MMS) and other Federal agencies to implement regulations governing the management of offshore oil production facilities.

In particular, the Committee will examine the regulatory framework governing the safety functions of MODUs and governing the preparations made by the owners/operators of MODUs to respond to potential oil spills as well as the liability responsibilities incurred by the owners/operators of MODUs that spill oil.

Further, the Committee will examine the potential environmental effects resulting from the oil spill and the ongoing response actions, and the long-term cleanup challenges and potential natural resource damages.

The Committee will hear testimony from representatives of the Federal Government, industry executives, the scientific community, fishermen, and nongovernmental stakeholders.

Executive Summary

On April 20, 2010, a blowout from the well site at which the *Deepwater Horizon* had been drilling led to an explosion that left 11 crew members missing and presumed dead. The *Deepwater Horizon* is a fifth generation MODU; it is owned by Transocean Ltd. It was capable of operating in water depths up to 8,000 feet (and upgradeable to 10,000 feet). It was built in 2001 by Hyundai Heavy Industries in South Korea and is flagged in the Marshall Islands. At the time of the explosion, the MODU was leased by BP p.l.c. (BP) for drilling operations in the Gulf of Mexico (Gulf) in that segment of the Gulf known as Mississippi Canyon Block 252 (MC252) on a prospect site known as the Macondo site.

Both media accounts and Congressional hearings held during the past week revealed that a combination of mechanical and human error may have contributed to the explosion that ultimately led to the *Deepwater Horizon* sinking to the Gulf floor, and the resulting uncontained oil spill. Critical pieces of evidence are at the bottom of the Gulf and, at this time, the cause of the explosion is unknown.

Press reports indicate that there was a failure of a well control that allowed a bubble of gas to surge to the Gulf surface, where it ignited and caused the *Deepwater Horizon* to catch on fire.[1] According to the Washington Post, "[i]nterviews with rig workers conducted as part of BP's internal investigation into the explosion indicate that a methane gas bubble escaped from the well and expanded quickly as it shot up the drill column, a series of events that included the failure of the blowout preventer and explosion of the rig."[2] The oil continues to spew out of a pipe 5,000 feet below the Gulf surface because the *Deepwater Horizon* blowout preventer failed to totally seal the drill pipe.

The oil is leaking at rates estimated to be between 5,000 barrels (210,000 gallons) and 80,000 barrels (3.36 million gallons) per day. BP continues to try to contain the leak. Over the weekend of May 8-9, an attempt to use a large containment dome to capture the oil failed when "slush-like gas hydrates – combinations of seawater and natural gas from the well – that quickly clogged an opening"[3] formed icelike crystals in the four-story, 100-ton box.

As of May 14, 2010, BP's attempts to stop the spill include applying an "injection tool", described as a "pipe within a pipe". During a conference call on May 14, 2010, Federal agency officials advised Congressional staff that the injection tool fell to the Gulf floor during a first attempt to install it and that BP would attempt to install it a second time. In addition, BP has a second, smaller containment dome waiting on the Gulf floor and ready to be lowered onto the oil spill. If that fails, BP is prepared to attempt a so-called "junk shot" that would clog the blowout preventer with selected waste material, including shredded tires and golf balls.[4] The only long-term

[1] Achenbach, Joel, "In the Gulf of Mexico, what went wrong with the Deepwater Horizon oil drilling rig?" *The Washington Post* (May 9, 2010).
[2] Jeff Donn and Seth Borenstein, Associated Press, "AP Investigation: Blowout preventers known to fail," *The Washington Post* (May 8, 2010).
[3] Steven Mufson and David A. Fehrenthold, "Oil spill investigators find critical problems in blowout preventer," *The Washington Post* (May 13, 2010).
[4] Henry Fountain and Matthew L. Wald, "BP Says Leak May be Closer to a Solution," *The New York Times* (May 12, 2010).

fix for stopping the gushing oil requires drilling relief wells that could be used to plug the damaged well, but this option, which BP began on May 4, will take several months to complete.[5]

The MMS, a branch of the Department of the Interior (DOI), is responsible for overseeing natural resources leases on the outer Continental Shelf, including collecting revenues due from exploration and production activities and regulating production facilities. Under the Outer Continental Shelf Lands Act (OCSLA) (P.L. 83-212), MMS is responsible for regulating specifically those activities that pertain to exploration, the drilling of wells and the subsequent production of resources, and the pipelines used to transport products.

MMS has long been criticized for being too cozy with the industry it is charged with regulating. At the Coast Guard/MMS Marine Board of Investigation of the *Deepwater Horizon* incident, Michael Saucier, a regional supervisor for MMS stated that BP had not submitted the proof that the blowout preventer it was going to use had a functioning ram to seal the pipes in the event of an emergency. He also testified that MMS allows for self-certification by the industry regarding the safety and effectiveness of the blowout preventers and other safety devices. In addition, evidence is emerging that indicates MMS was aware of the potential failures of blowout preventers. Accident reports from MMS "show that the devices have failed or otherwise played a role in at least 14 accidents, mostly since 2005."[6] Moreover, according to an Associated Press investigation, since 2005, the MMS had conducted at least 16 fewer inspections aboard the *Deepwater Horizon* than it should have under its own inspection policy, which requires monthly inspections.[7]

On May 11, 2010, Interior Secretary Salazar announced plans to split MMS into two independent entities, one charged with licensing and collecting fees, and the second charged with enforcing Federal safety and environmental requirements.

Because the spill occurred in coastal waters, the Coast Guard is serving as the Federal On-Scene Coordinator and is responsible for overseeing clean up efforts. This is the first Spill of National Significance under the National Response Plan.

The magnitude of the economic and natural resource damages caused by the *Deepwater Horizon* spill is unknown. The Obama Administration has described the *Deepwater Horizon* spill as a "massive and potentially unprecedented environmental disaster which can seriously damage the economy and environment of our Gulf States and could jeopardize the livelihoods of thousands of Americans who live throughout the Gulf Region."[8]

The Oil Pollution Act of 1990 (OPA) (P.L. 101-380) holds responsible parties (e.g., BP) accountable for the restoration of the natural resources and services affected by oil spills, subject to any potential cap on liability contained in the statute. Under OPA, all offshore facilities except deepwater ports (which have separate liability responsibilities) are liable for all removal costs plus a

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[5] BP, *Work Begins to Drill Relief Well to Stop Oil Spill* (May 4, 2010), http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7061778.
[6] *See* Donn and Borenstein, *supra* note 2.
[7] Justin Pritchard, "AP Impact: Fed'l inspections on rig not as claimed," *Associated Press* (May 16, 2010).
[8] Obama Administration, *Fact Sheet: Deepwater Horizon Oil Spill Legislative Package* (May 12, 2010). By comparison, the Congressional Research Service (CRS) states that the "*Exxon Valdez* spill tallied approximately $2 billion in cleanup costs and $1 billion in natural resources damages (not including third party claims)." *See* CRS, *Oil Spills in U.S. Coastal Waters: Background, Governance, and Issues for Conference* (April 30, 2010).

total of $75 million for all third-party damages arising from an oil spill (e.g., personal property, subsistence use of natural resources, profits resulting from property or natural resource damages). Such liability caps do not apply if a spill was "proximately caused by" a responsible party's "gross negligence or willful misconduct" or by the "violation of an applicable Federal safety, construction, or operating regulation."

The National Oceanic and Atmospheric Administration (NOAA) is the lead Federal agency tasked with conducting a natural resources damages assessment. NOAA's regulations establish a framework for the assessment of potential damages to the natural resource and related services that result from an oil spill and for the development and implementation of a restoration plan.

On May 8, NOAA's Damage Assessment Remediation and Restoration Program (DARRP) announced that it was coordinating an assessment of damages to the natural resources with Federal partners, BP (as the responsible party), and State trustees from the States of Louisiana, Alabama, Mississippi, and Florida. This assessment will gauge adverse impacts of the oil spill on affected fish and wildlife, as well as their habitats, and other areas impacted by the spill. According to DARRP, the current agency focus is to assemble existing data on resources (including fisheries and beach closures) and their habitat and collect baseline (pre-spill impact) data.

In response to the *Deepwater Horizon* oil spill, BP has employed the use of historic amounts of chemical dispersants, which have been applied to oil on the water's surface and delivered at the point of the oil's release from the well head, approximately 5,000 feet below the water's surface.

Recent scientific reports have suggested that the increased use of dispersants may pose a greater long-term threat to the natural resources of the Gulf of Mexico region than other control measures because: (1) dispersant transfers the oil (and associated toxic chemicals) from the surface of the water to the water column; (2) the use of dispersant can fundamentally change the chemical makeup of the dispersed oil and its potential impact on the marine environment; and (3) the potential impact of the chemicals contained within the dispersant, itself, may not be fully understood.

I. The *Deepwater Horizon* Incident

The facts surrounding the *Deepwater Horizon* incident are covered in the Executive Summary. As of May 15, BP states that four vessels and nine Remote-Operated Vehicles (ROVs) continue subsea work on the following operations:[9]

- **Riser Insertion Tube** – The riser insertion tool was brought back to the surface for a refitting. Once back on the sea floor, crews will attempt to insert the tool into the ruptured leaking riser. The riser insertion tube is connected to a drill pipe and riser that run to the Transocean *Enterprise*, on the surface. All necessary equipment is on location and engineers will move the tool back to the sea floor as soon as refitting is complete, sometime over the weekend.

[9] BP Press Release, *Gulf of Mexico Oil Spill Response Update – 05/15/2010* (2010).

According to a BP Press Release dated May 16, the riser insertion tube tool was successfully tested and inserted into the leaking riser, capturing some oil and gas.[10]

➢ **"Top Kill" Activities**

- Equipment has been fabricated and moved to location near the blowout preventer in order to work on killing the well from the top. Manifold and bypass lines are in place to provide access to valves on the blowout preventer. A "junk shot" of shredded fibrous material will be injected into the blowout preventer through these lines. The objective is for the material to travel up the blowout preventer and clog the flow of the well at the pinch point. Once the pressure is controlled, heavy fluids and cement will be pumped down the well to kill it.
- Diagnostics are ongoing. Gamma ray surveys are being conducted to help determine the status of internal components in the blowout preventer. Valves are being prepared to connect "choke" and "kill" lines to the manifold.

➢ **Containment Recovery System**

- A containment dome, called a "top hat," has been deployed to the sea floor and is readied to be placed over the main leak, if needed. It is designed with injection ports that can accommodate "anti-freeze" in order to mitigate the formation of frozen hydrates.
- It is important to note that this technology has never been done at this water depth. Significant technical and operational challenges must be overcome for it to be successful.

➢ **Drilling relief wells** – Transocean *Development Driller III* "spudded" the first relief well on Sunday, May 2 in a water depth of roughly 5,000 feet. This relief well is one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. As of today, the well has been drilled to 9,000 feet below sea level. Casing was run and cemented to that depth. The blowout preventer is tested and riser is being run so drilling can continue, sometime this weekend. It is estimated the total drilling process will take at least 90 days. Once that is accomplished, heavy fluids and cement can be pumped downhole to kill the well. A second relief well has been permitted and the Transocean *Development Driller II* is on location with drilling expected to begin on May 16.

➢ **Dispersant injection at the sea floor** – After receiving approval from Federal agencies, on Saturday, recommenced application of dispersant directly at the leak site on the sea floor using ROVs. Dispersant acts by separating the oil into small droplets that can break down more easily through natural processes before it reaches the surface. Sonar testing and aerial photographs show encouraging results. The additional subsea application is subject to ongoing testing protocols developed with the Environmental Protection Agency (EPA) and other Federal and State agencies.

The drawing below details the leaks now thought to be occurring near the Macondo well head.

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[10] BP Press Release, *Gulf of Mexico Oil Spill Response Update – 05/16/2010* (2010).

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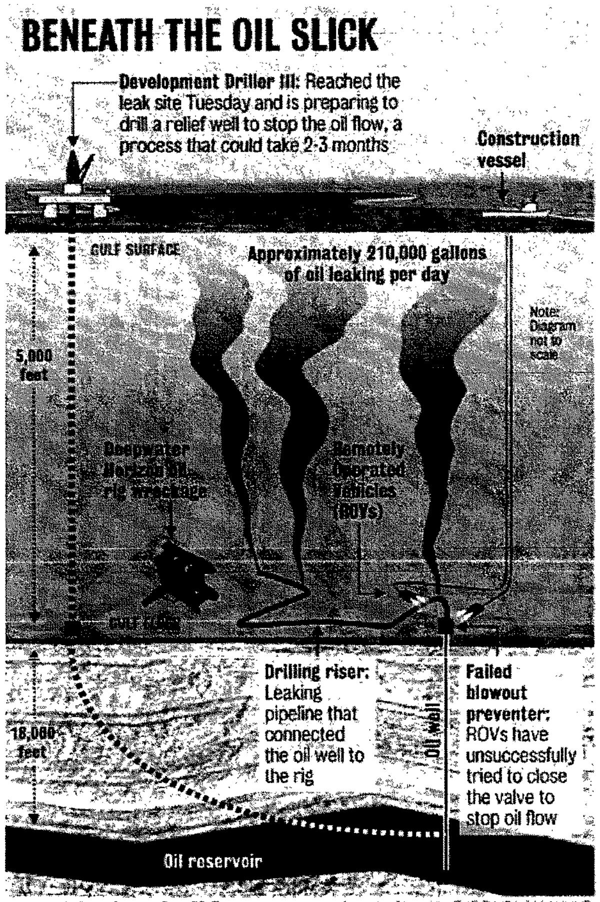

Source: U.S. Coast Guard, NOAA, BP, Transocean DAN SWENSON / THE TIMES-PICAYUNE

II. Federal Regulatory Scheme for Responding to Oil Spills

A. Federal Government

To implement the responsibilities assigned by OPA, and section 311 of the Clean Water Act (P.L. 92-500) as amended by OPA, President George H. W. Bush issued Executive Order (EO) No.

12777 on October 18, 1991.[11] The EO delegates responsibility to the DOI for establishing measures to prevent and contain oil discharges from offshore facilities,[12] requiring the issuance of regulations governing preparation and submission, and DOI approval, of offshore facility response plans,[13] and periodic inspection of containment booms and equipment used to remove oil discharges at offshore facilities.[14] The EO assigns to the Coast Guard responsibility for conducting periodic drills for removal capability under the relevant response plans for offshore facilities located in the coastal zone, and publishing annual reports on such drills.[15]

Federal responsibility for oversight of the clean-up of an oil spill depends on the source of the spill and the type of water into which the spill occurs. The Federal response to an oil spill is conducted in accordance with the NCP, which is intended to guide an effective, multi-tiered and well-coordinated national response strategy for minimizing the adverse impacts of releases of oil or other hazardous materials into the environment.[16] Generally, the Coast Guard is responsible for providing the Federal On Scene Coordinator (FOSC) for spills in coastal waters (meaning all waters of the U.S. subject to the tide, the Great Lakes, specified ports and harbors, the waters of the EEZ, and other waters as specified in 33 C.F.R. § 153.103) and the EPA is responsible for providing the FOSC for spills onto inland waters and onto land. Other agencies also have involvement in responding to spills in either location.

To carry out this responsibility, the Federal Government is authorized to:

- remove or arrange for the removal of a discharge, and mitigate or prevent a substantial threat of a discharge, at any time;
- direct or monitor all Federal, State, and private actions to remove a discharge; and
- remove and, if necessary, destroy a vessel discharging, or threatening to discharge, by whatever means are available.[17]

The Federal Government is responsible for making determinations regarding the extent of clean up required to be conducted after an oil spill occurs.

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[11] EO 12777 has been amended by a subsequent EO, but only to only for the purpose of re-designating certain agency responsibilities in light of the creation of Department of Homeland Security (DHS). The ultimate distribution of oil discharge planning and response responsibilities within the Executive Branch have not substantively changed.
[12] *See* 33 U.S.C. § 1321(j)(1)(C), requiring the President to issue regulations, consistent with the National Contingency Plan (NCP), "establishing procedures, methods, and equipment and other requirements for equipment to prevent discharges of oil and hazardous substances from vessels and from onshore facilities and off shore facilities, and to contain such discharges …[.]"
[13] *See* 33 U.S.C. § 1321(j)(5), requiring the President to promulgate requirements for vessels and facilities to submit response plans (which shall be consistent with the NCP and Area Contingency Plans) for worst case scenario discharges for review and approval; *See also* OPA section 4202(b)(4).
[14] *See* 33 U.S.C. § 1321(j)(6)(A), authorizing the President to require, "periodic inspection of containment booms, skimmers, vessels, and other major equipment used to remove discharges[.]"
[15] *See* 33 U.S.C. § 1321(j)(7), requiring the President to, "periodically conduct drills of removal capability, without prior notice, in areas for which Area Contingency Plans are required under this subsection and under relevant tank vessel, non-tank vessel, and facility response plans…."
[16] As required by the OPA, and EO 12777, the EPA published an updated NCP in 1994. The NCP has not been revised since 1994. *See* 59 Fed. Reg. 47384 (September 15, 1994). For more information on the NCP, see Appendix B.
[17] *See* 33 U.S.C. § 1321(c).

B. Coast Guard and MMS Oil Discharge Planning, Preparedness, and Response

In a Memorandum of Agreement (MOA) effective May 23, 2007 covering "Oil Discharge Planning, Preparedness, and Response," MMS and the Coast Guard address their joint responsibilities for oil discharge planning, preparedness, and response for offshore oil and gas facilities (including MODUs, production facilities, wind farms, deepwater ports, and other offshore facilities).

The MOA covering "Oil Discharge Planning, Preparedness, and Response" notes that MMS "conducts approximately 40 unannounced oil spill response drills annually for owners and operators of regulated facilities seaward of the coastline in the GOMR [Gulf of Mexico Reserve]" and advises "the appropriate FOSC of scheduled unannounced drills in order to facilitate and coordinate local USCG participation, avoid conflicts in Agency activities, and prevent duplication of response exercise efforts."[18] The MOA further states that "[p]articipation in MMS unannounced drills by USCG staff will be at the discretion and by the direction of the FOSC." Similarly, the MOA states that the Coast Guard will advise MMS of spill-response exercises it conducts.

MMS is also responsible for "the inspection of all oil discharge response equipment that is cited in MMS-approved OSRPs [Oil Spill Response Plans], which will be used in the event of an oil discharge from an MMS-regulated facility." Further, "MMS is responsible for ensuring that staffs of oil spill removal organizations (OSROs), spill response operating teams (SROTs), and oil spill response cooperatives are trained in the use of oil discharge response equipment and techniques to respond to an oil spill" but "[w]henever practicable, MMS and USCG will attend and audit the training that OSRO and response personnel receive."

As discussed, Coast Guard personnel serve as the FOSCs leading the response to oil spills, including from facilities in the EEZ. The "Oil Discharge Planning, Preparedness, and Response" MOA states that "[i]n the case of spills from MMS-regulated facilities, the USCG FOSCs are encouraged to work closely with the RP (Responsible Party) and MMS RS in developing appropriate response strategies" and notes that "MMS, upon request from the FOSC, will provide engineering, technical, and scientific expertise to support responses to significant oil discharges from MMS-regulated facilities."[19]

If an oil spill – particularly a larger oil spill – occurs from an MMS-regulated facility, MMS "will direct measures to abate (stop and/or minimize) sources of pollution from regulated offshore facilities to ensure minimal release of oil and to prevent unwarranted shutdown of unaffected production and pipeline systems."[20]

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[18] *Memorandum of Agreement Between the Minerals Management Service – U.S. Department of the Interior and the U.S. Coast Guard – U.S. Department of Homeland Security: Oil Discharge Planning, Preparedness, and Response* (May 23, 2007), at 4-5.
[19] *Id.* at 7.
[20] *Id.* at 8.

C. Industry Responsibility

The owners and operators of offshore facilities handling, storing, or transporting oil must have an Oil Spill Response Plan (OSRP).[21] OSRPs must demonstrate that the owners/operators of offshore facilities "can respond quickly and effectively whenever oil is discharged."[22]

OSRPs must be submitted to MMS for approval. Facilities may be operated for up to two years while MMS reviews and approves an OSRP. [23] If MMS finds an OSRP contains inadequate plans, it can require revisions to the plans.

Under Federal regulation, OSRPs "may be for a single lease site or facility or for a group of leases or facilities" but all the facilities or sites "must have the same owner or operator (including affiliates) and must be located in the same MMS Region."[24] Owners/operators of offshore facilities required to develop OSRPs must review the plans at least every two years and submit all modifications resulting from such reviews to the MMS or inform the MMS in writing that no changes are being made. Revisions to OSRPs must also be submitted to MMS within 15 days whenever a number of conditions occur, including changes that reduce response capabilities, a change in the worst case scenario, a change in type of oil being handled, or a change in an Area Contingency Plan. Facility owners/operators are required to exercise their OSRPs at least once every three years.

Regulations require an OSRP to contain key information, including: an Emergency Response Action Plan; equipment inventory, listing response materials, supplies, services, and equipment available locally and regionally to respond to a spill; contractual agreements that provides proof of the responsible party's contracts with OSROs and includes provisions demonstrating that they are available on a 24-hour-per-day basis; worst case discharge scenario, including an analysis of the likely volume of the worst case scenario spill and its potential trajectories, a list of the economic and environmental resources that would be affected, and a discussion of the response that would be undertaken to the worst case scenario in adverse weather conditions; a dispersant use plan that includes an inventory and the location of the dispersants and related products that would be used in the event of a spill, a discussion of application procedures, and an summary of toxicity data for the dispersants; an in site burning plan describing the equipment available to conduct in situ oil burns as well as ignition provisions for and environmental effects of an in situ burn; and a training and drills appendix describing the dates and types of training provided to members of the responsible party's oil spill response management and operational team members.

BP developed its Regional Oil Spill Response Plan for the Gulf of Mexico on December 1, 2000.[25] The plan, which includes hundreds of pages of guidance on responding to spills as well as extensive contact information for relevant Federal, state, and local authorities, notes that "BP will make every effort to respond to the Worst Case Discharge as effectively as possible."[26] In the Plan, BP states that it "has determined that its worst case scenario for discharge in waters greater than 10

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[21] *See* 30 C.F.R. § 254.
[22] 30 C.F.R. § 254.1.
[23] 30 C.F.R. § 254.2.
[24] *See* 30 C.F.R. §§ 254.3, 254.30, 254.42.
[25] BP, *Regional Oil Spill Response Plan* (2000). The plan is dated as having been revised on June 30, 2009, and its next review date is listed as June 30, 2011.
[26] *Id.*, Appendix H, at 4.

miles of shoreline would occur from the MC 778 Thunder Horse operations," where a "worst case scenario . . . could result in a discharge of 177,400 barrels of crude."[27]

Section 701 of the Coast Guard and Maritime Transportation Act of 2004 (P.L. 108-293), required nontank vessels over 400 gross tons to develop "a plan for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat of such a discharge, of oil." Such plans are known as Vessel Response Plans (VRP). For the purposes of developing VRPs, MODUs are classified as nontank vessels. The *Deepwater Horizon* was required to maintain its own VRP, which is separate from the OSRP maintained by BP for its Gulf Coast drilling operations; *Deepwater Horizon's* VRP was most recently approved by the Coast Guard in 2009.

III. Federal Regulation of Offshore Facilities

The OCSLA governs the inspection of facilities located on the OCS as well as the investigation of major fires, oil spills, deaths, and injuries that occur on the OCS. Under OCSLA, the Secretary of the Interior and the Coast Guard are required to promulgate individually or jointly regulations providing for an annual onsite inspection of every facility on the OCS subject to any environmental or safety regulation; such regulations shall provide for inspection of "all safety equipment designed to prevent or ameliorate blowouts, fires, spillages, or other major accidents."[28] The regulations required by OCSLA must also provide for periodic onsite inspections without advance notice to assure compliance with environmental and safety regulations.

The MMS is responsible for overseeing natural resources leases on the OCS, including collecting revenues due from exploration and production activities and regulating production facilities. Under OCSLA, MMS is responsible for regulating specifically those activities that pertain to exploration, the drilling of wells and the subsequent production of resources, and the pipelines used to transport products. MMS' regulatory authority extends to the blowout preventers that are attached to well heads and intended to prevent blowout explosions; the blowout preventer attached to the Macondo well head failed in the case of the *Deepwater Horizon* accident.

In its Initial Exploration Plan for MC252, BP noted that "[a] scenario for a potential blowout of the well from which BP would expect to have the highest volume of liquid hydrocarbons is not required for the operations proposed in this EP."[29] The Initial Exploration Plan does, however, present a "comparison of the appropriate worst-case scenario from BP's approved regional OSRP with the worst-case scenario from the proposed activities in this Exploration Plan." The comparison shows that the worst-case scenario leak from wells covered in the Exploration Plan is a release of 162,000 barrels of oil per day from an uncontrolled blowout while the worst-case scenario covered in the BP Regional OSRP for Exploration is a release of 300,000 barrels per day from an uncontrolled blowout.[30] BP further notes that "[s]ince BP Exploration and Production Inc. has the capability to respond to the appropriate worst-case scenario spill in its regional OSRP approved on November 14, 2008, and since the worst-case scenario determined for our Exploration

[27] *Id.* at 15.
[28] 43 U.S.C. § 1348(c).
[29] BP Exploration & Production Inc., *Initial Exploration Plan, Mississippi Canyon Block 252, OCS-G 32306 Public Information*, (February 2009), at 2-1.
[30] *Id.* at 7-1.

Plan does not replace the appropriate worst-case scenario in our regional OSRP, I hereby certify that BP Exploration and Production Inc. has the capability to respond, to the maximum extent practicable, to a worst-case discharge, or a substantial threat of such a discharge, resulting from the activities proposed in our Exploration Plan."[31]

BP also notes that "[a] model of a potential oil or hazardous substance spill is not required for the activities proposed in this plan."[32] Finally, BP notes that "[i]n the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of BP's Regional Oil Spill Response Plan which address available equipment and personnel, techniques for containment and recovery and removal of oil spill [sic.]."[33]

In a letter dated April 9, 2009, the MMS wrote to BP regarding its Initial Exploration Plan for the MC252 site stating "[y]ou are hereby notified that the approval of the subject plan has been granted as of April 6, 2009, in accordance with 30 CFR 250.233(b)(1)." MMS further wrote that the approval is for both wells and added "[e]xercise caution while drilling due to indications of shallow gas and possible water flow."

As noted above, MMS has long been criticized for being too cozy with the industry it is charged with regulating. Evidence is emerging that indicates MMS was aware of the potential failures of blowout preventers. In addition, accident reports from MMS "show that the devices have failed or otherwise played a role in at least 14 accidents, mostly since 2005."[34] Further, a recent AP investigation found that MMS has not adhered to its own policy of conducting monthly inspections, having conducted 16 fewer inspections of the *Deepwater Horizon* since 2005.

Despite the fact that MMS's own studies in the late 1990s indicated that blowout preventer failures were more common than industry indicated, MMS issued a rule that required blowout preventer tests half as often as previously required, resulting in an annual savings of up to $340,000 per rig.[35] In 1999, soon after this rule change, "an MMS-commissioned report by a research group identified 117 blowout preventer failures at deepwater rigs within the previous year," leading to 3,638 hours of lost time (a 4 percent chunk of drilling time).[36] During a hearing in New Orleans, the Coast Guard asked Michael Saucier, an MMS employee, how MMS ensures the proper functioning of blowout preventers.[37] Saucier's reply was that the government relies heavily on industry designs and oil company tests.[38] This may indicate that MMS uses insufficient oversight authority to regulate the industry's manufacturing and installation processes for blowout preventers.

In addition, documents recently obtained by the Washington Post, show that MMS has "routinely issued drilling permits in the Gulf of Mexico since 2009 without obtaining other Federal

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[31] *Id.*
[32] *Id.* at 7-2.
[33] *Id.* at 14-4, 14-5.
[34] Jeff Donn and Seth Borenstein, Associated Press, "AP Investigation: Blowout preventers known to fail," *The Washington Post* (May 8, 2010).
[35] *Id.*
[36] *Id.*
[37] Steven Mufson and David A. Fehrenthold, "Oil spill investigators find critical problems in blowout preventer," *The Washington Post* (May 13, 2010).
[38] *Id.*

permits needed to account for the toll that energy exploration would take on endangered species and marine mammals."[39] In 2009, in a separate case, an MMS whistle-blower sent a letter to Interior officials that MMS's operations on the BP rig Atlantis put the Gulf marine environment in danger.[40]

Although the *Deepwater Horizon* was registered in the Republic of Marshall Islands (RMI), Captain Thomas Heinan, the deputy commissioner of maritime affairs with the RMI is reported to have testified before the joint MMS/Coast Guard panel examining this accident that the RMI as the flag state did not inspect the drilling equipment and systems on the *Deepwater Horizon*. He reportedly indicated that such inspections are "left up to the MMS."[41] Further, Mr. Michael Saucier reportedly testified to the investigating panel that the American Petroleum Institute sets standards for blowout preventers but that he was "not aware that anyone checks to see if those standards are met."[42] He further testified that the blowout preventer is tested once it is installed on the ocean floor rather than on land.[43] Summarizing Mr. Saucier's testimony, Captain Hung Nguyen, a Coast Guard officer co-chairing the investigating panel, reportedly stated his testimony indicated that the blowout preventer is "designed to industry standard, manufactured by the industry, and installed by the industry with no government witnessing or oversight of construction or installation," which Mr. Saucier indicated was a correct summary.

IV. Liability Issues Surrounding Oil Spills: The Oil Pollution Act of 1990

OPA was enacted in response to the *Exxon Valdez* oil spill in 1989.[44] OPA consolidated existing laws and enacted new provisions to create a comprehensive Federal legal framework to govern liability and bolster the national response to oil spills. In addition, OPA implemented a strict liability scheme whereby those suffering economic losses as a result of an oil spill could recover those losses, without having to pursue a negligence claim against the responsible party.

A. General Liability Limits

OPA defines responsible parties, for purposes of liability for cleanup costs and damages. For vessels, the owner or operator is the responsible party and, for offshore facilities, such as the *Deepwater Horizon*, a responsible party is defined as "the lessee or permittee of the area in which the facility is located or the holder of a right of use and easement granted under applicable State law or the Outer Continental Shelf Lands Act ... for the area in which the facility is located (if the holder is a different person than the lessee or permittee)[.]" Section 1002 of the OPA specifies that each "responsible party for a vessel or a facility from which oil is discharged, or which poses the substantial threat of a discharge of oil, into or upon the navigable waters or adjoining shorelines or the exclusive economic zone is liable for removal costs and damages . . . that result from such incident." Removal costs include all costs incurred by the United States, a State, or an Indian tribe

[39] Anne E. Kornblut and Juliet Eilperin, "Obama assails oil company chiefs for Hill Testimony," *The Washington Post* (May 14, 2010).
[40] *Id.*
[41] Brett Clanton, "Regulators Point to Limits in Rig Inspection Process," *Houston Chronicle* (May 12, 2010).
[42] Jennifer Levitz, "BP Didn't Provide Failsafe Requirements," *Wall Street Journal* (May 12, 2010).
[43] *Id.*
[44] The *Exxon Valdez*, a large tank vessel, grounded on Bligh Reef, in Alaska's Prince William Sound, near Valdez, Alaska, on March 24, 1989, resulting in the discharge of approximately 258,000 barrels of crude oil and catastrophic environmental damage. *See* NTSB Final Report No. MAR-90-04 (adopted July 31, 1990).

under Federal law or State law as well as all acts taken by any person consistent with the NCP. Damages include injury to, destruction of, loss of, or loss of use of natural resources; injury to or economic losses resulting from destruction of real or personal property (including the loss of taxes, royalties, rents, or fees recoverable by the United States, a State, or a political subdivision and the loss of earning capacity recoverable by any claimant); loss of the subsistence use of natural resources, which are recoverable by any claimant who uses the natural resources without regard to ownership or management; and damages for the net costs of providing increased or additional public services.

For those responsible parties that are not grossly negligent or have not violated Federal laws, OPA provides limits on total liability; such limits vary by type of vessels or offshore facility. Section 1004(d) of OPA requires the President to adjust the limits of liability based on the change in the Consumer Price Index (CPI) at least every three years. Federal liability limits do not affect liabilities that may be owed under State statutes.

Under OPA, all offshore facilities except deepwater ports (which have separate liability responsibilities) are liable for all removal costs plus a total of $75 million for all damages arising from an oil spill. Responsibility for raising liability limits for offshore facilities rests with MMS, which has not adjusted such limits since OPA was enacted in 1990.

However, there are no limits on liability if a spill was "proximately caused by" a responsible party's "gross negligence or willful misconduct" or by the "violation of an applicable Federal safety, construction, or operating regulation" on the part of the responsible party or the party's agent or employee or by any person acting pursuant to a contractual relationship with the responsible party.[45] Assuming that the responsible party is not grossly negligent or has not violated a Federal requirement, OPA does not authorize the collection of any punitive damages from a responsible party.

BP has stated that it will pay all "legitimate claims" for damages resulting from this spill. On May 14, 2010, Secretary Napolitano, DHS, and Secretary Salazar, DOI, sent a letter to BP Chief Executive Officer Anthony Hayward requesting clarification on BP's intentions, stating that "we understand that BP will not in any way see to rely on the potential $75 million statutory cap to refuse to provide compensation to any individuals or others harmed by the oil spill, even if more than $75 million is required to provide full compensation to all claimants, and BP will not seek reimbursement from the American taxpayers, the United States Government, or the Oil Spill Liability Trust Fund."[46] The letter went on to state that the "public has a right to a clear understanding of BP's commitment to redress all of the damage that has occurred or will occur in the future as a result of the oil spill."[47]

In a recent Washington Post article, Attorney Brian O'Neill, who filed suit against *Exxon Valdez* on behalf of Alaska fishermen and natives, noted that:

[45] 33 U.S.C. § 2704(c)(1).
[46] *See* Letter from Secretary Napolitano and Secretary Salazar to Dr. Anthony Hayward, Group Chief Executive, BP (May 14, 2010).
[47] *Id.*

> In the Valdez case, Exxon set up a claims office right after the spill to pay fishermen part of their lost revenue. They were required to sign documents limiting their rights to future damages. Those who did were shortsighted. In Alaska, fishermen didn't fish for as many as three years after the Valdez spill. Their boats lost value. The price of fish from oiled areas plummeted. Prince William Sound's herring have never recovered. South-central Alaska was devastated. In the gulf, where hundreds of thousands of gallons of crude are pouring into once-productive fishing waters every day, fishing communities should be wary of taking the quick cash. The full harm to their industry will not be understood for years.[48]

OPA specified liability limits for tank vessels depending on whether they were single-hulled or double-hulled. Responsibility for raising such limits for vessels rests with the Coast Guard. The Coast Guard and Maritime Transportation Act of 2006 (P.L. 109-241) raised the liability limits for both single-hulled and double-hulled vessels; the Coast Guard subsequently adjusted the limits in 2009. A tank vessel's liability is currently calculated at $2,100 per gross ton for double-hulled vessels and $3,200 per gross ton for single-hulled vessels.[49] The limits yielded by these calculations cover the combined total of damage and removal costs. For purposes of determining liability limits, OPA specifies that a MODU that is "being used as an offshore facility" is deemed to be a tank vessel with respect to the discharge of oil; if the removal and damage costs associated with the spill of oil from the MODU exceed the amount of liability it would bear as a tank vessel, it is then deemed to be an offshore facility.

The Coast Guard and Maritime Transportation Act of 2006 also required the Coast Guard to submit annual reports to Congress assessing both the extent to which oil spills are likely to result in removal or damage costs for which no defense to liability limits exists and the impact of claims against the Oil Spill Liability Trust Fund that exceed liability limits. In its report submitted in August 2009, the Coast Guard reported that "[s]ince the enactment of OPA, 51 oil discharges or substantial threats of discharge . . . all originating from vessels, have reportedly resulted or are likely to result in removal costs and damages that exceed the liability limits amended in 2006."[50] The Coast Guard further reported that "[t]he estimated removal costs and damages from incidents taking place since the enactment of OPA total approximately $1.5 billion in 2009 dollars" and of those costs, "approximately $1.0 billion, or an annual average of $56.3 million, would be in excess of liability limits as amended by the CG&MT Act [the 2006 Act]."[51] The report concludes that the "the overall trend continues to be toward an increasing average annual potential Fund liability despite the amended limits"[52] and that "available data continues to suggest that existing liability limits for certain vessel types, notably tank barges and cargo vessels with substantial fuel oil, may not sufficiently account for the historic costs incurred as a result of oil discharges from these vessel types [sic]."[53]

Under 33 U.S.C. § 132(b)(6), the Coast Guard may assess a Class I or Class II civil penalty against the owner, operator, or person in charge of any vessel, onshore facility, or offshore facility

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[48] Brian O'Neill, "How to sue an oil company, tips for the Gulf from a veteran of Valdez," *The Washington Post* (May 16, 2010).
[49] A MODU is not required to have a double-hull unless it is "constructed or adapted to carry, or carries, oil in bulk as cargo or cargo residue" 46 U.S.C. § 3703a.
[50] U.S. Coast Guard, Oil Pollution Act (OPA) Liability Limits – Annual Report to Congress Fiscal Year 2009, at ii.
[51] *Id.*
[52] *Id.*
[53] *Id.* at iii.

that discharges oil or a hazardous substance or against any owner/operator/person in charge who does not comply with applicable Federal regulations after an oil spill occurs, including those who fail to report a spill as required. Class I civil penalties may not exceed $10,000 per violation and the maximum amount of any Class I civil penalty may not exceed $25,000. Class II civil penalties may not exceed $10,000 per day that the violation continues and the maximum amount of any Class II civil penalty may not exceed $125,000.

B. Oil Spill Liability Trust Fund

The Oil Spill Liability Trust Fund (OSLTF) was created with an amendment to the Internal Revenue Code of 1986; however, the OSLTF was not funded or authorized for use until the enactment of OPA. OPA authorized the use of the OSLTF for the payment of:

- costs of cleaning-up up a spill, including costs incurred by the Federal government or by a State;
- costs incurred by a Federal, State, or Indian tribe entity to assess damages and to develop and implement restoration and related plans;
- removal and damage costs associated with a spill from a foreign offshore unit;
- uncompensated removal costs; and
- Federal administrative, operational, and personnel costs and expenses necessary for and incidental to the implementation and enforcement of OPA and the Federal Water Pollution control Act, albeit limits are set on the amounts that are to be available to cover the Coast Guard's operating expenses.

OPA funded the OSLTF through the imposition of a five cent tax on barrels of oil; however, that tax expired at the end of 1994. The Energy Policy Act of 2005 (P.L. 109-58) reinstated the five cent tax on oil barrels and the tax was increased to 8 cents per barrel by the Emergency Economic Stabilization Act of 2008 (P.L. 110-343); this Act also specifies that the tax will rise to nine cents in 2017 and then expire at the end of that year. The OSLTF also receives revenues from amounts recovered from responsible parties for damages resulting from oil spills, from penalties paid for violations of section 311 of the Federal Water Pollution Control Act and for violations of the Deepwater Port Act (P.L. 93-627) and the Trans-Alaska Pipeline Authorization Act (P.L. 93-153), and from certain other sources.

Pursuant to 26 U.S.C. § 9509, the OSLTF may not pay more than $1 billion for any single incident, and natural resource damage assessments and claims arising from any single incident may not exceed $500 million. Further, OSLTF pays claims arising only from the spill of oil and related products (petroleum, sludge, oily wastes etc.); it does not cover any claims arising from the spill of other substances, including hazardous materials listed under the Comprehensive Environmental Response, Compensation, and Liability Act (costs associated with such spills are paid for out of the Superfund).

If a spill is Federalized, the costs incurred by the Federal Government to respond to the spill are paid out of the OSLTF, which will then bill the responsible party for the amounts paid from the fund.

The OSLTF is administered by the National Pollution Funds Center maintained by the U.S. Coast Guard. OPA provides direct spending authority for Federal agencies of up to $100 million; funds above that amount are subject to appropriation.

V. Natural Resource Damages Assessment and Remediation

A. Natural Resources and Services in the Gulf of Mexico

In addition to provisions addressing oil spill prevention, response, and liability, the OPA holds responsible parties (e.g., BP) accountable for the restoration of the natural resources and services affected by oil spills, subject to any potential cap on liability contained in the statute.[54]

The goal of the natural resources damage provision of the OPA is to make the environment and public whole for injuries to natural resources and services resulting from an incident involving a discharge or threat of discharge of oil. This goal is achieved through "returning injured natural resources and services to baseline[55] and compensating for interim losses of such natural resources and services through the restoration, rehabilitation, replacement or acquisition of equivalent natural resources and/or services."[56]

The OPA and its implementing regulations define the terms "natural resources" and "services" broadly. The term "natural resources" includes "land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the exclusive economic zone), and State or local government or Indian tribe, or any foreign government."[57] The term "services" is defined to include "the functions performed by a natural resource for the benefit of another natural resource or the public."[58]

The Gulf of Mexico coastal areas contain more than half of the coastal wetlands within the lower 48 states, as well as numerous beach-front and recreational opportunities in the States of Texas, Louisiana, Mississippi, Alabama, and Florida.

According to NOAA, 97 percent of the commercial fish and shellfish landings from the Gulf of Mexico are species that depend on estuaries and their wetlands at some point in their life cycle. Landings from the coastal zone in Louisiana alone make up nearly one-third (by weight) of the fish harvested in the entire continental United States. In 2008, commercial fishermen in the Gulf of Mexico harvested 1.27 billion pounds of finfish and shellfish that earned $659 million in

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54 Section 1004(a)(3) of OPA limits the liability of responsible parties for offshore facilities, such as the *Deepwater Horizon* facility, to all removal costs (i.e., direct cleanup cost) plus $75 million. This cap on liability is waived if the incident "was proximately caused by—(A) gross negligence or willful misconduct of; or (B) the violation of an applicable Federal safety, construction, or operating regulation by, the responsible party". *See* 33 U.S.C. § 2704(c). Section 9509 of the Internal Revenue Code of 1986 limits the per incident expenditures for natural resources damage assessments and claims from the OSLTF to $500 million. *See* 26 U.S.C. § 9509.

55 The term "baseline" refers to the condition of the natural resources and services that would have existed had the incident (e.g., oil spill) not occurred. *See* 15 C.F.R. § 990.30.

56 *See* 61 Fed. Reg. 440 (January 5, 1996).

57 *See* 33 U.S.C. § 2701.

58 *See* 15 C.F.R. § 990.30.

total landings revenue. This amount reflects only the value of commercial fishing in the Gulf to individual ship owners and does not include the value to the greater commercial market, which includes ship suppliers, restaurants, retailers, and individual consumers.

In addition, there is a significant recreational fishing industry in the Gulf of Mexico. According to the American Sportfishing Association, recreational fishing contributes $41 billion dollars in economic output in the Gulf Coast region annually and supports more than 300,000 jobs, including jobs associated with fishing charter and other types of boats and in nearly 2,300 tackle shops in Texas, Louisiana, Alabama, Mississippi, and the West Coast of Florida.[59]

The Gulf of Mexico serves as vital habitat to many species of breeding, wintering, and migrating waterfowl, songbirds, and other marine mammals and reptiles. According to the U.S. Fish and Wildlife Service (FWS), the U.S. Gulf Coast supports a "disproportionately high number of beach-nesting bird species" that rely on the beaches, barrier islands, and similar habitats as part of their annual breeding cycle, including the brown pelican and Sandwich tern. The northern Gulf Coast is also home to a large population of many other birds found in the Southeastern United States, from south Texas to southeastern Virginia, including the black skimmer, Forester's tern, and laughing gull. According to FWS, the Gulf region is also home to 19 endangered species, including several species of sea turtles, and the Key deer, as well as seven threatened species, including the American crocodile and the Gulf sturgeon.

The Gulf of Mexico States also sustain a billion-dollar hunting and wildlife-associated recreation industry. In 2006 alone, the total value of hunting and wildlife activities in the Gulf States totaled $11.2 billion, including over $1.3 billion from non-State residents who traveled to a Gulf State to participate in hunting and wildlife activities.

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[59] *See* American Sportfishing Association, *Sportfishing Industry Expresses Deep Concern Over Gulf Oil Spill* (May 17, 2010), http://www.asafishing.org/newsroom/news_pr043010.html.

State-by-State Summary on the Economic Value of Hunting and Wildlife Watching Activities in 2006

	Alabama	Florida	Louisiana	Mississippi	Texas	**Total**
Total Number of Hunters	391,000	236,000	270,000	304,000	1,101,000	**2,302,000**
Value of Hunting Activities (Total)	$678,024,000	$377,394,000	$525,505,000	$519,808,000	$2,222,298,000	**$4,323,029,000**
Value of Hunting Activities by Nonresidents	$163,638,000	$27,810,000	$37,125,000	$87,729,000	$264,267,000	**$580,569,000**
Total Number of Wildlife Watching Participants	1,161,000	4,240,000	738,000	731,000	4,225,000	**11,095,000**
Value of Wildlife Watching (Total)	$450,004,000	$3,081,496,000	$312,430,000	$175,846,000	$2,939,018,000	**$6,958,794,000**
Value of Wildlife Watching by Nonresidents	$64,908,000	$653,278,000	n/a	$38,342,000	$128,496,000	**$885,024,000**

Source: U.S. Fish and Wildlife Service: 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation[60]

Additionally, the Gulf of Mexico supports a multi-billion travel and tourism industry. According to the U.S. Travel Association, in 2008 alone, the travel and tourism industry in the Gulf States generated $94.1 billion in travel-related spending, supported close to one million jobs (with an annual payroll of $23.9 billion) and approximately $13.6 billion in tax receipts.

Finally, the *Deepwater Horizon* oil spill may complicate ongoing efforts to slow the loss of coastal lands and wetlands in the Gulf region, especially those efforts undertaken by the State of Louisiana and the U.S. Army Corps of Engineers in the State. According to NOAA, the impact of the oil spill on coastal erosion will be determined by how much oil reaches the shoreline habitats of the Gulf and how long it remains there. Significant landings of oil on vegetated coastal shorelines

[60] *See* U.S. Census Bureau, *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*, http://www.census.gov/prod/www/abs/fishing.html.

can cause the vegetation to become stressed and die, weakening marsh soils, and placing such soils at risk of accelerated erosion from waves and storms.

As noted in the Executive Summary, NOAA is coordinating an assessment of damages to the natural resources affected by the spill.

B. Statutory Requirements for Natural Resources Damages

Section 1006 of OPA authorizes Federal, State, and Tribal governments to act as trustees for natural resources and services injured, lost (either permanently or temporarily), or destroyed by the discharge of oil or hazardous substances. Section 1006(c) of OPA authorizes the President, acting through Federal department or agency heads, to: (1) assess the natural resource damages for the resources under Federal trusteeship, (2) upon request of State or Tribal government, assess damages to the resources under State or Tribal trusteeship; and (3) develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent, of the natural resources under Federal trusteeship.

OPA defines the "measure of natural resources damages" as: (1) the cost of restoring, rehabilitating, replacing, or acquiring the equivalent of, the damaged natural resources; (2) the diminution in value of those natural resources pending restoration; *plus* (3) the reasonable cost of assessing the damages to the natural resources. OPA 90 authorizes Federal, State, and Tribal trustees to quantify the value of damages to natural resources or services.

Section 1006(e)(1) of OPA required NOAA to develop regulations for the assessment of natural resource damages which may result from a discharge of oil (except for any part of oil defined as a "hazardous substance" by CERCLA). NOAA's regulations[61] provide a framework for conducting natural resource damage assessments that achieve restoration of the resource consistent with the goals of OPA 90. A natural resource damages assessment is conducted in three phases: (1) the pre-assessment phase; (2) the restoration planning phase; and (3) the restoration implementation phase. *More detailed information on each of these phases is included in the appendix to this memorandum.*

Federal regulations establish the U.S. Coast Guard National Pollution Funds Center, Natural Resource Damage Claims Division as the Federal agency responsible for adjudicating claims for natural resource damages arising out of oil spills.[62]

Generally, Federal regulations require potential natural resource claimants to file a damages claim within three years of either the date of the oil spill or the date of completion of the natural resources damage assessment, whichever is later. Claimants bear the burden of providing all evidence, information, and documentation necessary to support a claim, and must include a "sum certain for compensation for each category of uncompensated damages or removal costs…resulting from an incident."[63] This process highlights the importance of accurate and timely public information about the nature and extent of any impact to a natural resource or service, because in the absence of such information, individual claimants may be unable to assemble the necessary information to meet the burden of proof required for a natural resources claim. If the claimant

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[61] *See* 15 C.F.R. § 990.
[62] *See* 33 C.F.R. Part 136.
[63] *See* 33 C.F.R. § 136.105.

accepts full or partial settlement from the OSLTF, the claimant is precluded from filing a separate claim for compensation from the Fund, and is precluded from taking additional legal action against the responsible party in relation to the claim for damages.

C. Use of Chemical Dispersants in Response to the *Deepwater Horizon* Oil Release

There are four general ways to address oil that is released into the aquatic environment: containment (through oil booms), removal through oil skimmers or absorbent materials, in-situ burning, and the use of chemical dispersants. Many of these technologies and techniques have been in use for decades, and numerous organizations (including the Committee on Transportation and Infrastructure[64]) have been critical of a seeming lack of technological innovation to minimize the impact of released oil in the aquatic environment.

EPA defines a "dispersant" as a chemical agent that can emulsify, disperse, or solubilize oil into the water column or promote the surface spreading of oil slicks to facilitate dispersal of the oil into the water column. With respect to the oil spill from the *Deepwater Horizon* and the Macondo well site, several organizations have questioned both the short- and long-term impacts that the increased use of chemical dispersants may have on the Gulf of Mexico,and on the natural resources that utilize this area. According to BP, as of May 12th, approximately 428,000 gallons of an EPA-listed chemical dispersant had been deployed in response to the oil spill from the Macondo site. It is likely that the amount of dispersant used in relation to this oil spill will far exceed any prior use of chemical dispersants in the history of oil spills.

Section 311(d)(2)(G) of the Clean Water Act, as amended by OPA, requires that EPA prepare a schedule of dispersants, other chemicals, and other spill mitigating devices and substances, if any, that may be used in carrying out the NCP. EPA maintains a list of products authorized for use in addressing oil spills, along with certain parameters for their use.[65] According to EPA, simply listing on the NCP does not constitute "approval of the product" by the agency, but only that data on the effectiveness and toxicity have been submitted to the agency as required by subpart J of the NCP.[66]

EPA's 2010 NCP product schedule lists 14 different chemical dispersants authorized for use in relation to an oil spill.[67] Each of the chemical dispersants listed on the NCP are unique in that each is comprised of a different chemical formula. Of note is the fact that chemicals dispersants can be either petroleum-based or water-based, and can have different efficacies with different types of released oil and in different environments (i.e., warm or cold water), as well as can have different impacts on human health and different short- and long-term impacts on the environment. For example, one dispersant may be better suited for use in warm water with light crude oil, than in colder water with heavy crude. The trade name of the dispersant being used in addressing the Deepwater BP spill is COREXIT® EC9500A, manufactured by Nalco Energy Services, L.P., of

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[64] *See* "Joint Hearing of the Subcommittees on Coast Guard and Maritime Transportation and Water Resources and Environment on the Oil Pollution Act" (H. Rept. 106-14) (March 24, 1990), at 64. *See also*, "Oil cleanup technology hasn't kept pace," *Washington Post* (May 4, 2010), at A01.

[65] According to EPA, Corexit 9500 is listed on the NCP for use on waters no closer than three miles from shore.

[66] *See* 40 C.F.R. § 300.915.

[67] *See* EPA, *National Contingency Plan: Product Schedule* (May 11, 2010), http://www.epa.gov/oem/docs/oil/ncp/schedule.pdf.

Sugar Land, Texas. It is a petroleum-based dispersant. It is unclear how or why BP selected the use of COREXIT® EC9500A in relation to the Deepwater BP oil spill.[68]

Recently, scientific reports have suggested that the increased use of dispersants may pose a greater long-term threat to the natural resources of the Gulf of Mexico region than other control measures because: (1) dispersant transfers the oil (and associated toxic chemicals)[69] from the surface of the water to the water column where it is either consumed by the plants and animals living in the region or settles to the seabed for an indefinite period of time; (2) the use of dispersant can fundamentally change the chemical makeup of the dispersed oil and its potential impact on the marine environment; and (3) the potential impact of the chemicals contained within the dispersant, itself, may not be fully understood,[70] especially when used in the historic volumes associated with this oil spill.

In 2005, the National Research Council of the National Academies issued a report, entitled "Oil Spill Dispersants: Efficacy and Effects" that reviewed the use of chemical dispersants in connection with an oil spill. According to the report:

> Oil spill dispersants do not actually reduce the total amount of oil entering the environment. Rather, they change the inherent chemical and physical properties of oil. The objective of dispersant use is to enhance the amount of oil that physically mixes into the water column, reducing the potential that a surface slick will contaminate shoreline habitats or comes into contact with birds, marine mammals, or other organisms that exist on the water surface or shoreline. Conversely, by promoting dispersion of oil into the water column, dispersants increase the potential exposure of water column and benthic biota to spilled oil. Dispersant application thus represents a conscious decision to increase the hydrocarbon load (resulting from the spill) on one component of the ecosystem (e.g., the water column) while reducing the load on another (e.g., coastal wetland). Decisions to use dispersants, therefore, involve trade-offs between decreasing the risk to water surface and shoreline habitats while increasing the potential risk to organisms in the water column and on the sea floor.[71]

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[68] Nalco entered into a joint partnership with Exxon Chemical Company in 1994. *See* Nalco, *Our Company History*, http://www.nalco.com/aboutnalco/history.htm. *See also*, Paul Quinlan, Greenwire, "Less Toxic Dispersants Lose Out in BP Oil Spill," *New York Times* (May 13, 2010), http://www.nytimes.com/gwire/2010/05/13/13greenwire-less-toxic-dispersants-lose-out-in-bp-oil-spil-81183.html.

[69] According to NOAA, dispersed and dissolved oil in the water can result in exposure of aquatic resources to the toxicological effects of polycyclic aromatic hydrocarbons (PAHs). PAHs can cause direct toxicity (mortality) to marine mammals, fish, and aquatic invertebrates through smothering and other physical and chemical mechanisms. Besides mortality, PAHs can also cause sublethal effects such as: DNA damage, liver disease, cancer, and reproductive, developmental, and immune system impairment in fish and other organisms. PAHs can accumulate in invertebrates (e.g., plankton), and can be passed to higher trophic levels, such as fish and marine mammals, when they consume prey. *See* NOAA, *Shorelines and Coastal Habitat in the Gulf of Mexico: FACT SHEET* (April 2010), http://www.gsmfc.org/OilSpill/Shorelines_coastal_habitats_FACT_SHEET.pdf.

[70] The exact formula for Corexit 9500 (currently being used in the Deepwater BP oil spill) is proprietary, meaning that the individual and cumulative impacts of the different chemicals in the dispersant on the environment may not be known, and cannot be independently evaluated. *See* Elizabeth Rosenthal, "In the Gulf of Mexico, Chemicals Under Scrutiny," *New York Times* (May 5, 2010).

[71] *See* National Research Council of the National Academies, *Oil Spill Dispersants: Efficacy and Effects* (2005).

The report identified several findings related to the use of chemical dispersants in connection with a release of oil, including the need for better information on the short- and long-term impacts of chemical dispersants on the aquatic environment. Key challenges raised by the 2005 National Academy of Sciences (NAS) report focus on the "insufficient information" currently available regarding how chemically dispersed oil interacts with the natural environment, including how it enters and impacts the "food web," whether it causes lethal or sub-lethal impacts on the natural environment, and how chemically dispersed oil compares to naturally dispersed oil (in terms of spatial and temporal impacts on the region). The report concluded by recommending additional research[72] on the effectiveness and impacts of chemical dispersants that, in the opinion of the report, were necessary to support policymakers faced with the choice of whether and how to use dispersants.

On May 7, 2010, the EPA released the following statement on the use of dispersants in the *Deepwater Horizon*.

> When this crisis occurred, Coast Guard and EPA granted BP authorization to use an approved dispersant on oil present on the surface of the water in an effort mitigate the impact of the spill. This authorization included specific conditions to ensure the protection of the environment and the health of residents in affected areas. At this time, BP is authorized to continue use of this dispersant on the surface of the water. To ensure nearby residents are informed and protected, the EPA is constantly monitoring air quality in the Gulf area through air monitoring air craft, and fixed and mobile air stations. Air monitoring data is posted as it becomes available on www.epa.gov/bpspill .
>
> The Coast Guard and EPA also authorized BP to conduct tests of a new approach to use this dispersant underwater, at the source of the leak. The tests were done to determine if the dispersant would be effective in breaking up the oil and helping to control the leaks. No further use of dispersants underwater is planned until BP provides the results of these tests for our review. The effects of underwater dispersant use on the environment are still widely unknown, which is why we are testing to determine its effectiveness first and foremost. If it is determined that the use of this dispersant underwater is effective and that BP may continue its use, the Federal government will require regular analysis of its impact on the environment, water and air quality, and human health. We reserve the right to discontinue the use of this dispersant method if any negative impacts on the environment outweigh the benefits.

A critical challenge for the Federal agencies is to ensure sufficient air and water quality monitoring and testing for the impact of chemical dispersants and chemically-dispersed oil on the

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[72] Title VII of OPA 90 established an Interagency Coordination Committee on Oil Pollution Research, comprised of members from the Departments of Commerce, Interior, Energy, Transportation, and Defense, and the EPA, the National Aeronautics and Space Administration, and the Federal Emergency Management Agency to develop, implement, and coordinate a comprehensive program for oil pollution research and technology development. According to the 2005 NRC report, federal funding for oil spill R&D has decreased over time, and for many agencies, is non-existent. *See* National Research Council of the National Academies, *Oil Spill Dispersants: Efficacy and Effects* (2005), at 16-17.

marine environment to ensure that the benefits from the use of dispersants outweigh both the short- and long-term adverse impacts of their use to the overall Gulf of Mexico ecosystem.

WITNESSES

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President and CEO
Transocean Ltd.

PANEL II

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Appendix A: Mobile Offshore Drilling Units Regulatory Scheme

Once an undersea oil reserve has been found, the process of extracting oil begins with the drilling of exploratory wells. Such drilling is conducted by mobile offshore drilling units (MODU).

MODUs are either bottom-supported or floating units. Bottom-supported units can be either jackups or submersibles. Floating units can be either drillships or semi-submersibles.

Jackup MODUs are barges that are essentially fitted with legs and constructed to accommodate crew members and the industrial machinery associated with drilling operations. The entire unit is towed to a drill site where the legs are "jacked down" and driven into the ocean floor. The barge is then jacked up to a height at which it will operate clear of the impacts of waves and currents.[73] Jackup MODUs are limited to operating in water depths that do not exceed 450 feet.

Submersible MODUs deploy their lower structures to the sea floor while the upper parts float at the surface. The impacts of waves and currents are lessened on submersibles because their lower parts rest on the sea floor.

Drillships are self-propelled units with streamlined hulls and are used to drill in remote locations. They are kept on station with anchors or, in deep water, by dynamic positioning equipment.[74] Because drillships can carry equipment like drill pipe in their cargo spaces, they are capable of drilling to depths of 30,000 feet. However, drillship operations can be negatively affected by bad weather.

The *Deepwater Horizon* was a semi-submersible MODU. Semi-submersibles float on pontoons that are submerged during drilling operations. Columns support the upper structures above the surface of the sea. Semi-submersible MODUs are capable of conducting drilling operations at great depths in the ocean.

A. Regulation of MODUs

The design, construction, and operation of MODUs are governed by a system of international, flag state, and coastal state laws and regulations. International regulations are developed at the International Maritime Organization (IMO).[75] Under international law, ships must be registered or "flagged" under the laws of a "flag state." Flag states enact national legislation to implement the various codes adopted by the IMO and impose such requirements on the vessels flying their flags. Coastal states (states that have a boundary opening to the sea) enact legislation to implement IMO codes and to ensure their coastal environments are protected from pollution.

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[73] Minerals Management Service (MMS), *Kids Corner: Drilling Units*, http://www.mms.gov/alaska/kids/shorts/drilplat/drilplat.htm.

[74] Dynamic Positioning enables a MODU to be held in place in the water by means of computer-controlled thrusters.

[75] The IMO is a specialized entity within the United Nations with 169 Member States and three Associate Members. IMO is headquartered in the United Kingdom. IMO convenes meetings attended by maritime experts from Member Governments and interested non-governmental organizations during which international conventions are written and updated. The United States is an IMO member and represented at IMO meetings by the U.S. Coast Guard under authority delegated by the Department of State.

According to data provided by the Coast Guard, there are currently 39 MODUs operating in U.S. waters; nine of the MODUs operating in U.S. waters are flagged in the United States, while the other 30 MODUs currently active in the United States are flagged in foreign countries. There are an additional 28 MODUs that are flagged in the United States but that are not currently active and drilling in U.S. waters (this figure could include MODUs that have been inactivated but that have retained their Certificates of Inspection or that are drilling elsewhere in the world). Most MODUs operate in the Gulf of Mexico. A very small number are operating in the waters around Alaska.

B. International Requirements

In 1989, the IMO adopted the *Code for the Construction and Equipment of Mobile Offshore Drilling Units (1989 IMO Code)*. The *1989 IMO Code* applies to MODUs built after May 1, 1991 (and has been amended since its adoption). The *1989 IMO Code* applied to the *Deepwater Horizon* (which was built in 2001).

According to its Preamble, the *1989 IMO Code* was developed to, "... provide an international standard for mobile offshore drilling units of new construction which will facilitate the international movement and operation of these units and ensure a level of safety for such units, and for personnel on board, equivalent to that required by the International Convention for the Safety of Life at Sea, 1974 ...."[76] The *1989 IMO Code* addresses all aspects of the design, construction, and operation of MODUs, including safety, but it does not address what is known as the "industrial" operations associated with drilling and controlling wells. Regulations related to industrial operations and associated equipment are set forth under the laws of the coastal state in whose waters drilling operations are conducted.[77]

The *1989 IMO Code* recognizes that MODUs are complex vessels and that technology in the offshore industry advances rapidly. In response, the IMO resolved to periodically re-evaluate and to revise the *1989 IMO Code* to ensure that the regulations reflected current practices and technologies. Recent amendments and other measures adopted by the IMO include:

1. the 1991 amendments, which required MODU lifeboats to carry two-way VHF[78] radios and radar transponders.[79] Two additional VHF radios were required to be available to the crew for use in liferafts.[80]
2. the 1994 amendments, which incorporated the harmonized system of survey and certification[81] into the *1989 IMO Code* and provided guidelines for MODUs equipped with

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76 The International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS), is the primary convention concerning the safety of merchant ships. SOLAS was first adopted in 1914 following the sinking of the *Titanic*.
77 IMO, Code for the Construction and Equipment of Mobile Offshore Drilling Units, as amended, consolidated edition 2001, second edition, p. 1.
78 VHF stands for Very High Frequency. VHF radios are used to communicate relatively over short distances.
79 Lifeboat radar transponders send signals back to the surface radars of ships and aircraft to aid search and rescue personnel in spotting the lifeboat.
80 IMO, Code for the Construction and Equipment of Mobile Offshore Drilling Units, as amended, consolidated edition 2001, second edition, at iii.
81 Surveys by recognized marine surveyors determine a vessel's seaworthiness. The harmonized system of survey and certification provides uniform application of industry standards.

dynamic positioning systems. The 1994 amendments also included provisions for helicopter facilities on board MODUs.[82]

3. the *Code on Alarms and Indicators* adopted in 1995, which provided general guidance on the design, location, type, and priority of alarms and indicators required by other IMO safety and environmental protection measures. IMO encouraged member states to apply the guidance to MODUs.
4. the *Recommendations on Training of Personnel on Mobile Offshore Units (MOUs)* adopted in 1999. The standards established in these recommendations apply to the maritime crews and special personnel employed aboard MODUs.[83] Section 3, Responsibilities of Companies and Personnel, of the IMO's recommendations states that every company, every offshore installation manager, and all offshore personnel have responsibility for meeting the standards in the Training Code. Section 3 also recommends that training for all personnel be documented and that training records be maintained aboard the unit.[84]

C. Role of Classification Societies

All ships must be surveyed and issued certificates which attest to their seaworthiness and compliance with important international conventions covering safety, polluting emissions, and other issues. Some of these important conventions include the International Convention for the SOLAS, the International Convention on Load Lines, and the International Convention for the Prevention of Pollution from Ships. The certificates attesting to a vessel's compliance with such requirements are issued by the flag state.

Classification societies are organizations that perform surveys and certify compliance with international conventions. The International Association of Classification Societies (IACS)[85] publishes *Requirements Concerning Mobile Offshore Drilling Units (IACS Requirements)*, which detail the standards that MODUs must meet in order to be considered seaworthy and fit to operate.

The purpose of the *IACS Requirements* is to establish a common basis for surveys of MODUs. The *IACS Requirements* are minimum standards for the design, equipment, and construction of MODUs that must be incorporated into the rules of the individual member

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[82] IMO, Code for the Construction and Equipment of Mobile Offshore Drilling Units, as amended, consolidated edition 2001, second edition, at iii.

[83] The maritime crew includes:

1. Offshore installation manager (OIM), appointed by the MODU's owner as the person in "complete and ultimate" command of the unit;
2. Barge supervisor who supports the OIM in certain essential marine matters. The barge supervisor on some MODUs may be referred to as the stability section leader or barge master;
3. Ballast control operator who is responsible for controlling the MODU's trim, draft, and stability;
4. Maintenance supervisor who is responsible for the inspection, operation, and testing, of all machinery and equipment as specified by the owner of the MODU. The maintenance supervisor may also be called the chief engineer, technical section leader, or rig mechanic; and
5. Deck and engineer officers, radio operators, and unlicensed mariners.

Special personnel are generally those personnel on board a MODU engaged in the MODU's specialized work.

[84] IMO Assembly Resolution A.891(21), Recommendations on Training of Personnel on Mobile Offshore Units (MOUs), Section 3 (November 25, 1999).

[85] IACS consists of one associate and 10 member classification societies, including the American Bureau of Shipping (ABS). IACS contributes to maritime safety by providing technical support, verification of compliance services, and research and development. More than 90 percent of the world's cargo carrying capacity rules and standards for design, construction, and compliance were developed by IACS.

classification societies. The requirements are intended to constitute general structural design principles for MODUs.[86]

The *IACS Requirements* do not cover the structural details of the industrial equipment that is used in drilling or operations related to drilling. Machinery, electrical, and piping systems that are installed for drilling operations are covered by the *IACS Requirements* only to the extent that the design of these systems may affect the overall safety of the unit.[87]

D. Republic of the Marshall Islands MODU Standards

The United Nations Convention on the Law of the Sea (UNCLOS) requires each flag state to, "... exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag."[88] A flag state exercises control over ships flying its flag through its national requirements, which should conform to the appropriate international conventions.

National requirements address the safety of vessels by addressing issues such as ships' construction, equipment, seaworthiness, manning, labor conditions, and crew training. Flag states also enact legislation to ensure that a vessel flying its flag is properly surveyed by a classification society recognized by the flag state, and that each ship is under the command of a qualified master and staffed with qualified officers and crew members.[89]

The *Deepwater Horizon* was registered in the Republic of the Marshall Islands (RMI) and was subject to that country's national legislation. The Office of the Maritime Administrator of the RMI publishes *Mobile Offshore Drilling Unit Standards (RMI Standards)*, which contain the RMI's standards for the construction, equipment, arrangement, and operation of MODUs.

The *RMI Standards* are based upon the *1989 IMO Code* and reflect the RMI's Maritime Administrator's interpretations of the *1989 IMO Code.* Part III of the *RMI Standards* provides the requirements for issuance of an International 1989 MODU Certificate under the *1989 IMO Code.*

According to Part VI of the *RMI Standards,* the Coast Guard issued a letter dated August 9, 2002 that recognizes the *RMI Standards* as sufficient to provide a level of safety equivalent to the international and U.S. requirements for operating on the U.S. outer Continental Shelf (OCS).[90]

In general, Part III of the *RMI Standards* requires that all MODUs registered in the RMI must maintain good class standing by undergoing a survey by a classification society that is recognized by the RMI. A recognized classification society is authorized by the RMI to perform inspections and to issue the relevant certificates.

The ABS, a classification society, is recognized by the Marshall Island; it surveyed the *Deepwater Horizon* on behalf of the RMI. According to information provided by the Coast Guard,

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[86] International Association of Classification Societies (IACS)[86] Requirements Concerning Mobile Offshore Drilling Units, at 1.
[87] International Association of Classification Societies (IACS)[87] Requirements Concerning Mobile Offshore Drilling Units, Section D.1.1.3.
[88] UNCLOS, Article 94, Duties of the Flag State, para. 1.
[89] UNCLOS, Article 94, Duties of the Flag State, para. 3.
[90] Republic of the Marshall Islands, Mobile Offshore Drilling Unit Standards (MI-293), rev. 8/02, at 17.

ABS last surveyed *Deepwater Horizon* in 2006. *Deepwater Horizon* was not due for another full survey until 2011;[91] however, ABS reports that it was last on the *Deepwater Horizon* for an annual (interim) survey in February 2010.

E. United States Laws and Regulations Pertaining to MODU Operations

Pursuant to the Submerged Lands Act of 1953, states generally have jurisdiction over the waters and natural resources located three miles seaward of their coast lines; however, commerce, navigation, power production, and certain other issues involving state waters are regulated by the Federal Government. Louisiana exercises jurisdiction over the waters that are three imperial nautical miles seaward of their coastline (with one imperial nautical mile being four feet longer than one nautical mile). Texas exercises jurisdiction over waters that are three leagues seaward of the state's coast line (with a league being three nautical miles), while Florida exercises jurisdiction over the waters that are 3 leagues seaward of its Gulf Coast.[92]

Entered into force international in 1994 (albeit the United States is not a party), UNCLOS specifies that nations may exert sovereignty over that area of the ocean extending 12 miles seaward of their coast lines. Nations may also exert control over the use and preservation of resources located in an area extending 200 miles seaward of their coast lines known as the Exclusive Economic Zone (EEZ).

The OCS consists of the submerged lands, seabed, and associated structures located between the seaward extent of a state's jurisdiction and the seaward extent of Federal jurisdiction.

In addition to the *1989 IMO Code* and the laws of the flag state, foreign MODUs operating on the OCS of the United States must comply with certain U.S. regulations. Subchapter N of Title 33 C.F.R. – Outer Continental Shelf Activities, and Subchapter I-A of Title 46, Mobile Offshore Drilling Units, contain regulations that apply to foreign MODUs. Specifically, Subchapter N requires operators of foreign flagged MODUs to comply with U.S. regulations relating to MODUs.

U.S regulations provide operators of foreign flagged MODUs with three options for compliance with U.S. Federal Regulations. The options require compliance with the design, equipment, and operating standards:

A. prescribed in 46 C.F.R. Parts 108 and 109;[93] or
B. prescribed by the flag state if the standards provide a level of safety that is equivalent to that provided by 46 C.F.R. Parts 108 and 109; or

[91] U.S. Coast Guard's Maritime Information Exchange, *Port State Information Exchange: Deepwater Horizon* (May 17, 2010), http://psix.uscg.mil/PSIX/PSIXDetails.aspx?VesselID=33177.
[92] Jonathan L. Ramseur, Congressional Research Service, *Oil Spills in U.S. Coastal Waters: Background, Governance, and Issues for Congress* (April 30, 2010), at 17.
[93] Title 46 C.F.R. part 108 – Design and Equipment contains the U.S. regulations for MODUs with respect to construction and arrangement, stability, fire extinguishing systems, life saving equipment, cranes, equipment markings and instructions, and several miscellaneous items.
Title 46 C.F.R. part 109 – Operations contains the U.S. regulations for MODUs with respect to tests, drills and inspections, operation of safety equipment, reports, notifications and records, emergency signals, cranes, and several miscellaneous items.

C. contained in the IMO's Code for the Construction and Equipment of Mobile Offshore Drilling Units provided by IMO Assembly Resolution A. 414(XI).[94]

The *Deepwater Horizon* was operating under Option C. Therefore, it was required to operate in compliance with the *1989 IMO Code* and the *RMI Standards*.

The Coast Guard is responsible for verifying that a foreign MODU meets the requirements of Option C and any additional requirements under U.S. regulations. In order to verify compliance, the Officer in Charge, Marine Inspection (OCMI) in whose zone the MODU will operate may inspect the MODU. Once the Coast Guard determines, through inspection or otherwise, that a MODU meets applicable requirements, the Coast Guard issues a Letter (also called a Certificate) of Compliance (LOC).

Coast Guard policy with respect to the issuance of LOC is provided in Navigation and Vessel Inspection Circular 3-88, change 1, *Issuance of Letters of Compliance to Foreign Documented Mobile Offshore Drilling Units Operating on the Outer Continental Shelf of the United States* (*NVIC 3-88*).[95] The guidance in *NVIC 3-88* instructs owners of foreign flagged MODUs to contact the OCMI in whose zone the MODU will be operating to apply for an LOC. The owner must submit the required documentation,[96] schedule and pass an inspection, and pay the required fee before the OCMI may issue the LOC. LOCs are valid for two years (but annual inspections are required) or until the MODU departs the U.S. OCS, whichever occurs first. A MODU may not operate in U.S. waters until it has a valid LOC.

Among other things, LOCs specify the maximum number of persons permitted aboard the MODU and the minimum number of certified lifeboatmen that must be on the MODU. The OCMI may issue an LOC even if an inspection finds certain deficiencies. In such a case, the LOC is issued along with a letter providing a reasonable period for correcting specified deficiencies. No LOC may be issued for deficiencies involving firefighting or lifesaving equipment.

Part VI of the *RMI Standards* provides a subpart that restates the general requirements for applying for an LOC from NVIC 3-88. It also provides a subpart, referred to as a supplement, that relates to very specific requirements regarding such matters as crew citizenship, inspections, navigation safety, testing and inspection of pressure vessels, testing and inspection of lifesaving equipment, testing and inspection of fire fighting equipment, provision of hospital spaces and first aid, and electrical wiring in hazardous areas. Part VI also includes a statement that the OCMI may

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[94] It should be noted that the IMO Assembly resolution incorporated by reference in Subchapter N is the IMO's 1979 MODU code and not the one that applies to the *Deepwater Horizon*.

[95] Navigation and Vessel Inspection Circulars (NVICs) provide guidance to U.S. Coast Guard personnel and the regulated community regarding enforcement and compliance with Federal marine safety regulations. NVICs do not have the force of law, but they are important "tools" to enable regulated parties to comply with the law. NVICs are issued by the Assistant Commandant for Marine Safety, Security and Environmental Stewardship and address any of a wide variety of subjects, including vessel construction features; mariner training and licensing requirements; inspection methods and testing techniques; safety and security procedures; requirements for certain Coast Guard regulatory processes; manning requirements; equipment approval methods; and special hazards. U.S. Coast Guard, *Navigation and Vessel Inspection Circulars (NVIC): Background Information* (August 6, 2008), http://www.uscg.mil/hq/cg5/nvic/.

[96] Required documentation includes: IMO MODU Code Certificate issued by the flag state or an authorized agent. In the case of the *Deepwater Horizon*, ABS, as an authorized agent of the Marshall Islands, issued the IMO MODU Certificate; and International Load Line certificate; Certificate of Financial Responsibility; International Pollution Prevention certificate; and National Pollution Discharge Eliminations System permit when drilling.

require additional or specialized equipment if uniquely hazardous circumstances not be addressed by existing standards are present.

Before the OCMI issues an LOC, Coast Guard inspectors ensure that the unit and its equipment are being maintained to the standards of the applicable IMO MODU Code. To ensure such maintenance, Coast Guard inspectors board the MODU and physically inspect the MODU's documents and equipment.[97] Foreign MODUs must possess a valid IMO MODU Code Certificate issued by the flag state and inspectors examine other required documents to establish their validity.

The Coast Guard conducted an initial examination of the *Deepwater Horizon* in 2001 and issued its LOC on August 15, 2001. It subsequently underwent annual Coast Guard examinations.

In testimony before the joint casualty investigation convened by the Coast Guard and MMS to examine the events surrounding the loss of the *Deepwater Horizon* and the subsequent oil spill, Captain Vern Gifford, who works in prevention policy with the Coast Guard's Eighth District (the District responsible for regulating facilities in the Gulf of Mexico), has presented testimony regarding the Coast Guard's inspection regime for MODUs. The *Houston Chronicle* summarizes his testimony by stating that he indicated "it can be challenging to keep up with offshore drilling rig technology" and that "regulations governing Coast Guard inspections of mobile drilling rigs date to 1978."[98] He further indicated that the inspections conducted of foreign flagged MODUs by the Coast Guard are less rigorous than those conducted of U.S.-flagged MODUs; he reportedly said that Coast Guard inspections of foreign flagged MODUs can last four to eight hours and are intended to "verify more thorough inspections by non-governmental certification societies" whereas "inspections of U.S.-flagged vessels can take several weeks."[99] He also reportedly testified that the Coast Guard "does not mandate inspections of things like dynamic positions systems" which "weren't in use when the regulations had their last major overhaul three decades ago."[100]

Similarly, Lieutenant Commander Michael Odom, who reportedly inspected the *Deepwater Horizon* as a Coast Guard inspector, reportedly told the investigating authorities that "[t]he pace of technology has outrun the current regulations."[101]

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[97] Coast Guard personnel have informed Committee staff that the inspections they perform aboard foreign MODUs are not materially different than inspections they perform aboard U.S. flagged MODUs.
[98] Brett Clanton, "Regulators Point to Limits in Rig Inspection Process," *Houston Chronicle* (May 12, 2010).
[99] *Id.*
[100] Mark Washburn, "Coast Guard Inspectors: Offshore Oil Regulations Outdated," *McClatchy Newspapers* (May 12, 2010).
[101] *Id.*

APPENDIX B: National Contingency Plan

The Clean Water Act (P.L. 92-500) requires the President to prepare and publish the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (33 U.S.C. § 1321); the plan is published at 40 C.F.R. Part 300. The NCP is intended to guide an effective, multi-tiered and well-coordinated national response strategy for minimizing the adverse impacts of releases of oil or other hazardous materials into the environment.[102] The National Response System (NRS), which is integral to NCP-based operations, is the scalable structure used to coordinate response actions by all levels of government to actual discharges of oil.

The NCP addresses preparedness planning, notifications and communications, and on-scene response operations. The primary organizational elements created by the NCP to perform these activities within the NRS include:

- **National Response Team (NRT):** The NRT is comprised of representatives from the Federal departments and agencies assigned roles in responding to oil spills. The Coast Guard chairs the NRT when a response is being mounted to a spill in a coastal region (and in the EEZ); when a response is being mounted to a spill in an inland water, the U.S. Environmental Protection Agency (EPA) chairs the NRT. The NRT strives for consensus, but each member has a vote when consensus is not achievable. Among the duties fulfilled by the NRT are planning and maintaining national preparedness for responses to major oil discharges that are beyond regional capabilities, providing policy and program directions to Regional Response Teams, and activating under the framework of the NRS to oversee the response to major oil discharges.
- **Regional Response Teams (RRT):** RRTs are comprised of regional representatives of each NRT member agency, State governments, and local governments. The RRT is comprised of a standing team as well as incident-specific teams formed from appropriate members of the standing team when response to an actual oil discharge is required. As with the NRT, leadership of each NRT is shared between EPA and the Coast Guard with the Coast Guard leading the response to oil discharges in coastal waters.
- **Area Committees (ACs):** Oil Pollution Act of 1990 (OPA) required the President to designate, for all U.S. waters and coastal areas, areas for which ACs are established under the Clean Water Act [311j4 (as amended by OPA). Each AC is required to submit to the President an Area Contingency Plan for review and approval. ACs are comprised of qualified personnel from Federal, State, and local agencies. The primary responsibility of each AC is the preparation and coordination of an Area Contingency Plan for its designated area.
- **On-Scene Coordinator (OSC):** The OSC directs the response efforts and coordinates all other efforts at the scene. Neither the NRT nor the standing RRTs responds to the scene of a discharge; instead, they provide coordination assistance as required to support the OSC.

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[102] As required by the OPA, and Executive Order (EO) 12777, the EPA published an updated NCP in 1994. The NCP has not been updated since 1994. *See* 59 Fed. Reg. 47384 (September 15, 1994).

Planning is accomplished with the NRT in a hierarchical, coordinated manner, beginning with detailed individual response plans for each vessel or offshore facility, Area Contingency Plans (ACPs), Regional Contingency Plans (RCPs), and the NCP. Each ACP is prepared by the appropriate AC, which is directed by a pre-designated OSC, working in consultation with the appropriate RRT and other assets and organizations specified in the NCP. ACPs should include, among other things, a description of the area covered by the plan (and, particularly, areas that might be environmentally or economically sensitive to the effects of oil discharge); a description of responsibilities assigned in the event of a spill to the party responsible for the spill, and to Federal, State, and local government agencies; a list of available equipment or other mitigation substances or devices available for use in the event of a spill; and a detailed annex containing plans for responding to spilled oil in sensitive environmental, fish, and wildlife areas. The ACP is expected to be coordinated and integrated to the maximum extent practicable with other response plans within the area, including state and local plans, and the response plans maintained by individual vessels and facilities.[103]

Each RCP is prepared by the appropriate RRT, in cooperation with the States within the region. Each RCP, as with ACPs, are designed to be well-coordinated and integrated with other response plans and organizations with roles or responsibilities associated with those plans within the region, including ACPs and state emergency plans, as well as the NCP. RCPs include information on all useful facilities and resources in the region (to include commercial, academic and other sources).

The NCP requires that all discharges or releases be reported to the National Response Center (NRC), which is located within Coast Guard headquarters. The NRC receives information about any oil discharge, and disseminates the information to the appropriate pre-designated OSC. NRC also disseminates notifications to all interested NRT member agencies.

In the event of an oil discharge, the OSC is responsible for conducting a preliminary assessment. The OSC evaluates the magnitude and severity of the spill and the feasibility of removing the spill, and attempts to identify responsible parties. In the event of a major discharge or a spill that otherwise poses a substantial threat to the public health or welfare of the United States, a unified command is established, and the OSC directs the response.[104] In carrying out his/her responsibilities, the OSC is broadly empowered to direct and coordinate all response and recovery activities of Federal, State, local and private entities, and will draw on resources available through the appropriate ACPs and RRTs.

In addition, the NCP makes special provisions for spills of national significance (SONS). A SONS is defined in 40 C.F.R. 300.5 as a "spill that due to its severity, size, location, actual or potential impact on the public health and welfare or the environment, or the necessary response effort, is so complex that it requires extraordinary coordination of federal, state local, and responsible party resources to contain and clean up the discharge." The USCG Commandant is empowered to classify a spill within a coastal region as a SONS, and, if this occurs, the Commandant may appoint a National Incident Commander who will assume the role of OSC (and engage in

[103] The NCP requires that vessel and offshore facility response plans must be consistent with the applicable ACP, and include plans for a worst case discharge of oil.
[104] In less significant spills, the OSC is authorized to allow a responsible party to perform removal actions, under the supervision of the OSC.

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strategic coordination with, as appropriate, the NRT, RRTs, Governors of affected States, and other local officials).

APPENDIX C

Natural Resource Damage Assessment

NOAA's natural resource damage assessment regulations[105] include the following three phases:

- **Phase 1: Pre-assessment:** When notified by response agencies of an incident involving oil, natural resource trustees must first assess whether the release is covered by Oil Pollution Act of 1990 (OPA) and the potential risks to the natural resources under the jurisdiction of the trustees. Based on preliminary information, the trustees assess whether the release has likely caused an injury, if response actions will adequately address the injuries, and if feasible restoration alternatives exist. If so, trustees are to proceed with a natural resources damages assessment.

- **Phase 2: Restoration Planning:** The purpose of the Restoration Planning phase is to evaluate the potential injuries to natural resources and services, and use that information to determine the need for and scale of restoration activities. This phase has two basic components: (1) injury assessment; and (2) restoration selection.

    - ***Injury Assessment:*** The goal of injury assessment is to determine the nature and extent of injuries to natural resources and services, thereby providing a basis for evaluating the need for, type of, and scale of restoration actions. Under NOAA's natural resource damages rule, injury is defined as an "observable or measurable adverse change in a natural resource or impairment of a natural resource service."[106] Trustees must determine that there is: (1) exposure, a pathway, and an adverse change to a natural resource or service as a result of an actual discharge, or (2) an injury to a natural resource or impairment of a natural resource service as a result of response actions or a substantial threat of a discharge. Trustees must also quantify the degree, and spatial and temporal extent of injuries (when compared to the baseline).

    - ***Restoration Selection:*** Once an injury assessment is complete, trustees must develop a plan for restoring the injured natural resources and services. Under NOAA's natural resource damages rule, the trustees must identify a reasonable range of restoration activities, evaluate and select the preferred alternative(s), and develop a Draft and Final Restoration Plan that considers public comments. Restoration actions are either primary or compensatory. Primary restoration refers to actions taken to return the injured natural resources and services to baseline on an accelerated time frame, as compared to natural recovery (where no human intervention is taken to directly restore the resource and/or service to baseline. Compensatory restoration includes actions to compensate for interim losses of natural resources and/or services pending recovery, with first consideration given to actions that provide services of the same type and quality, and of comparable value to those lost. The regulation identifies six specific criteria that must be

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[105] *See* 15 C.F.R. 990.

[106] *See* 15 C.F.R. 990.30. "*Injury* means an observable or measurable adverse change in a natural resource or impairment of a natural resource service. Injury may occur directly or indirectly to a natural resource and/or service. Injury incorporates the terms destruction, loss, and loss of use as provided in OPA."

used to evaluate restoration alternatives that are used to develop a Draft Restoration Plan: (1) the cost to carry out the alternative; (2) the extent to which each alternative is expected to meet the trustees' goals and objectives in returning the injured natural resources and services to baseline and/or compensating interim losses; (3) the likelihood of success of each alternative; (4) the extent to which each alternative will prevent future injury as a result of the incident, and avoid collateral injury as a result of implementing the alternative; (5) the extent to which each alternative benefits more than one natural resource and/or service; and (6) the effect of each alternative on public health and safety. The public must be given the opportunity to comment on the Draft Restoration Plan. After reviewing public comments on the Draft Restoration Plan, trustees must develop a Final Restoration Plan that serves as the basis for claims for damages.

- **Phase 3: Restoration Implementation:** The Final Restoration Plan is presented to responsible parties for implementation, or to fund the trustees' costs for implementation, providing the opportunity for settlement of damage claims without litigation. Should responsible parties decline to settle the claim, OPA authorizes trustees to bring a civil action for damages in federal court or to seek an appropriation from the Oil Spill Liability Trust Fund for such damages.

DEEPWATER HORIZON: OIL SPILL PREVENTION AND RESPONSE MEASURES AND NATURAL RESOURCE IMPACTS

Wednesday, May 19, 2010

HOUSE OF REPRESENTATIVES,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
WASHINGTON, DC.

The Committee met, pursuant to call, at 10:05 a.m., in room 2167, Rayburn House Office Building, Hon. James Oberstar [Chairman of the Committee] presiding.

Mr. OBERSTAR. The Committee on Transportation and Infrastructure will come to order.

Prior to our hearing, we have pleasant Committee business to undertake. We have a new Member assigned to a vacancy that occurred on our Committee. And I want to welcome Hank Johnson of Lithonia, Georgia, to the Committee on Transportation and Infrastructure.

Glad to have you aboard.

He is a very serious-minded Member. He has wanted to serve on the Committee since his election to Congress. The Democratic caucus of the Committee unanimously recommends that the gentleman from Georgia be appointed to the Subcommittee on Economic Development, Public Buildings, and Emergency Management and to the Subcommittee on Water Resources and Environment. Is there objection?

Without objection, so ordered.

Mr. Johnson represents the district in Georgia previously represented by Cynthia McKinney, a good friend of many of us.

He grew up in the District of Columbia. He earned his degree from Clark College in Atlanta, Georgia, the Thurgood Marshall School of Law at Texas Southern University. He practiced law in Decatur, Georgia, for 25 years. He served for 12 years as DeKalb County magistrate judge, 5 years as county commissioner, and 3 years as chair of the DeKalb County Budget Committee. He also serves on the Armed Services and Judiciary Committees.

The Chair recognizes Mr. Johnson for 30 seconds.

Mr. JOHNSON OF GEORGIA. Thank you, Mr. Chairman. And, in addition to those things, I am also a part-time aspiring comedian.

Mr. Chairman, I am honored to join the Transportation and Infrastructure Committee. And I look forward to working with you, the Ranking Member, and my colleagues on this Committee.

Joining this Committee will give me an opportunity to better help my home State of Georgia, the Fourth District, and the city of Atlanta, home to the State's largest public transportation system and the world's busiest airport.

We face enormous Transportation and Infrastructure challenges as a Nation, and I look forward to working with all of you to address them.

Thank you very much.

Mr. OBERSTAR. Thank you very much, Mr. Johnson.

The Chair now recognizes Mr. Mica, our senior Republican on the Committee.

Mr. MICA. Thank you.

And, on behalf of our side of the aisle, Mr. Johnson, Congressman Johnson, welcome. We look forward to working with you. And we've got some important responsibilities and jurisdiction on this Committee, and we view you now as our newest member of the team. Welcome aboard.

Thank you. I yield back.

Mr. JOHNSON OF GEORGIA. Thank you.

Mr. OBERSTAR. We'll have an abbreviated opening statement procedure. I will make framing comments on the scope of the hearing. Mr. Mica; Mr. Rahall, who is the Chair of the Resources Committee and will have a hearing of his own—Natural Resources Committee; used to be Interior and Insular Affairs—and Mr. Young; Ms. Johnson; Mr. LoBiondo; Mr. Cummings; and Mr. Cao. Mr. Mica and I for 4 minutes, and each of the others for 2 minutes.

We are meeting to consider the explosion and sinking of the offshore drilling unit Deepwater Horizon in the Gulf of Mexico and the loss of 11 lives and the ongoing, continuing massive oil spill with the potential for unprecedented damage both to the economy and to the environment.

Many of the elements of this tragedy are familiar to the Committee. BP was in charge of the drilling in the gulf. It has a history of prior spills from pipelines and other activities that cast doubt on whether the company has the commitment to the practice and the culture of safety necessary to protect the public.

In March 2006, BP was responsible for the worst spill in the history of oil development on Alaska's north slope, which was the subject of discussion and inquiry in this Committee. The spill went undetected for 5 days. BP ignored four alarms on its system indicating that there was a leak. The Federal investigation established that BP had not established programs for required maintenance—that is, cleaning with pigs—or programs for internal maintenance using smart pigs on the pipeline. The Pipeline and Hazardous Materials Safety Agency ordered BP to replace the lines.

Admiral Barrett, retired admiral of the Coast Guard, later put in charge of the pipeline safety management agency said, quote, "I continue to find that the presence of hazardous conditions on three of these pipelines managed by BP would likely result in serious harm to property or the environment." It issued three corrective action orders to BP, which took them quite some time to comply. And I have a complete timeline; I won't go into that at this point.

When BP obtained its approval for safety and response plan required for drilling in the gulf, BP claimed that, if there was a spill, it would not have an environmental impact because BP would rely upon, quote, "industry-wide standards for using proven equipment and technology to respond to the spill." Almost a month has passed. The response plan and its proven equipment and technology have failed to stop most of the continuing oil discharge or to contain most of the oil already discharged.

BP has harnessed impressive scientific and technological experience to drill at great depths in the sea, and you have to wonder why they hadn't harnessed similar science and technology to anticipate failure, to install redundancy to prevent failure and practices to clean up after an oil spill.

On the government's side, similarly, there is a very disturbing lack of dedication to safety, excessive reliance on the industry to police itself, going back more than two decades of government experience. The Minerals Management Service of the Department of Interior, in charge of ensuring the safety of offshore drilling, has a dual mandate: to promote and to regulate—promote the government's financial relationship with the drilling industry and regulate the safety of the industry. That combination creates inevitable conflicts, and those can undermine safety, as this Committee has found with the FAA doing both promotion and safety, at least until the DeFazio amendment, which terminated that practice. Secretary Salazar, happily, has taken action to separate these functions within the Minerals Management Service.

In regulation of offshore drilling, Minerals Management Service has fallen way short of the commitment needed for effective oversight of offshore drilling. They have shown a disturbing failure to regulate blow-out preventers, a critical part of the BP plan to contain or to prevent a spill. Minerals Management Service was aware that, in recent years, several failures—several blow-out preventer failures played a role in at least 14 accidents. In 1 year, there were 114 blow-out preventer failures. But the Minerals Management Service relied totally on the industry to ensure effectiveness of blow-out preventers.

At the Marine Board of Inquiry for the accident, the co-chair of that panel reported testimony of an expert witness, quote, "is designed to industry standard, is manufactured by the industry and installed by the industry, with no government witnessing or oversight of construction or installation."

Well, that brings back to painful memory a hearing in this Committee in which excessive deference to a regulated industry was called to our attention, with the Coast Guard's contract for its Deepwater procurement program. We found that the Coast Guard allowed a company who had the contract for major vessel procurement and extension to also play a critical role, a major role, in certifying the design of the vessel.

So the Coast Guard, as Minerals Management Service, as FAA before it, were relying on industry to design the product, build the product, certify its safety. And Chairman Cummings, Chair of the Coast Guard Subcommittee, held an 11-hour hearing in this Committee that established all of those facts, resulting in legislation that has changed the practice of the Coast Guard.

We also learned in hearings conducted by Mr. Costello, Chair of the Aviation Subcommittee, that FAA policy was to consider regulated airline as its customer, to go to great lengths to keep the customer satisfied with the inspectors who were regulating it. The result of the hearing was it caused the FAA to significantly change its practices and to change personnel, as well. And now we are seeing a change of culture in the FAA on oversight of safety.

We have developed legislation as a result of those experiences, and I expect we will do the same after we have plumbed the total causes of this incident in the gulf.

Delegation of responsibility for the safety of the drilling unit delegated out to the Republic of the Marshall Islands, where that drill rig was registered. Under U.S. law, we give considerable deference to safety regulation by the country of registry, in aviation and in maritime. There is one reason that ship-owners register their ships in flag-of-convenience countries like the Marshall Islands: They want to save money by avoiding the safety and liability standards required by countries such as the United States.

The Coast Guard witnesses before the Marine Board of Investigation on the Deepwater Horizon accident testified that a Coast Guard inspection of a U.S.-flag mobile offshore drilling unit takes 2 to 3 weeks, but the safety examination of a foreign-flag offshore drilling unit, such as the Deepwater Horizon, takes 4 to 8 hours—obviously, nowhere near as thorough and detailed an investigation and certification or recertification as we do of our own equipment.

Given the magnitude of the spill in the gulf, we need to review the causes of the spill as well as the broader question of the adequacy of procedures for ensuring that drilling is safe and does not endanger the environment. This is not a hearing about whether or not to drill but how you go about the procedures and how you assure the public safety and how the interest of the broader public is protected to ensure that this type of disaster does not happen again.

About 2 weeks ago, I circulated an idea, without making it public, that I thought that the best approach to the fundamental causes would be a Challenger-type commission. I served on one such commission, Pan Am 103, requested by then-President George Bush I, which resulted in the first aviation safety legislation enacted in this country, preceding that of September 11, 2002—after the September 11th, 2001, passed it in 2002.

So I think the President's initiative toward a commission is a sound idea. And we may even have to do some—introduce legislation to further that cause.

I look forward to the testimony of our witnesses.

And I will yield to Mr. Mica.

Mr. MICA. Well, thank you, Mr. Oberstar, for setting the stage for this hearing and your comments and also for complying with the request of Congressman Cao of Louisiana, who first requested the hearing, also requested me to support his review by this Committee, and we are doing it today.

We do have an important responsibility. As you know, this Committee does oversee the United States Coast Guard, which is the first responder that was there. We do have a responsibility. Eleven people were killed in the explosion, and we have joint jurisdiction with other Committees over responsibility to make certain, as Mr. Oberstar said in his opening statement, that this doesn't happen again.

What I want to do is take a minute, and I don't want to point fingers, but I just want to review the process and what has taken place and what didn't take place. And then we will have questions when we have some of these witnesses before us.

First of all, I see in today's headlines, "Salazar says regulatory oversight of industry is lax." And he really didn't want to—he said, "It would be premature to say that watchdogs underestimate had the risk." I don't know what planet he is on, but we have had these warnings for some time.

Before he took office, the United States Department of Interior inspector general, at the end of the Bush administration, issued an IG report. The IG said that they had three separate investigations by the Office of Inspector General over the Minerals Management Service under the Department of Interior, responsible for this.

And I would like this part of the record, because it does show the activities that were inappropriate that were going on between that agency and also the industry.

Mr. OBERSTAR. Without objection, that document will be included in the record.

Mr. MICA. Let me also say, if you look at the way these activities take place, you have to review, again, the whole picture. Under the Bush administration, leases for oil exploration and drilling were issued. And this particular lease was under the Bush administration. However, all of the actions to ensure that safety measures were put in place have to be attributed to the Obama administration.

What I have done is outline—I call this the "Obama oil spill timeline." And we have to look very carefully at the way things are done. First, the lease was given. Secondly, BP came in in February of 2009. As you heard Mr. Oberstar say, the industry proposes how they are going to go about—and this was not a production well; it was an exploratory well. They requested and had approved—and this is the copy of their request and their safety procedures—everything that they were going to do in exploration of this particular site.

Just a short time later, April 6, the Obama administration issued—and I think this is the first time we have a public copy of this. This is their approval. It's basically a carte blanche recipe for disaster, because they did not require extraordinary measures. There is only one sentence in here that says—and let me be fair. It says, "Exercise caution while drilling due to indications of shallow gas and possible water flow." This is the approval that that agency, the government agency, gave for that.

Let me say that they failed to put in place, and even today they fail to put in place, measures which I have been calling for for some time and others have been asking for, particularly in oil exploration and drilling. And it's simple, and also Mr. Oberstar referred to it: a blow-out protection mechanism, acoustic control, remote emergency cut-off, required in all the European activities.

Now, let me ask you, too: Why was BP developing a dome or a top-hat to put over this after the incident occurred? I mean, simple prudence would say that you cover all the risks.

Now, let me tell you why this is important. This is the Obama administration list of Deepwater sites. I don't know if we can put that up, but they have approved almost three dozen of these sites. This was at 5,000 feet. Almost all of these are a quarter of a mile in depth, and some of them that have been approved are 8,000 feet—8,000 feet—more than what we have seen. So we've got to make certain that this doesn't happen again, that simple protections are in place and that risks are addressed.

Then, more disturbing is the United States Coast Guard, which is the jurisdiction of this Committee—and I asked Members when we found out about this. The budget came out from the Obama administration in February. This is a copy of it. It proposed cutting the United States Coast Guard 1,000 positions, ships, planes, helicopters—essential to the first responsibilities we gave them.

Then, if you look at the timeline of what we did, it was—actually, the explosion took place on the 20th. The 21st, the Coast Guard came on board—actually, the 20th. They were rescuing people, trying to deal with the safety and other results from the explosion. But from the 21st, it took until May 1st to have the Coast Guard commandant, Thad Allen—bless his heart and all the Coast Guard that do an incredible job—but he wasn't appointed until May 1st as the national incident commander pursuant to a declaration of "spill of national significance."

So what happened and what is important to note on this—can we put this up on the screen?

This is a little graph here, and it shows what happened. If you had gotten the spill and we had gotten on top of this immediately, you could have contained that, actually vacuumed up and contained some of this spill. But this went on and on. And this graph shows—of course, there is a little blue dot where, if it had been identified and the agency that was responsible for oversight was doing its job—again, I am casting no aspersion on the Coast Guard. But the plan—this is the plan they submitted—never had this backup response mechanism in place. So it spread and it spread and it spread. And that's the story.

Now, I share the President's desire—and the President, before this spill, came out—this is the New York Times article. The President says—"Obama to open offshore oil drilling." I have no problem with that. I have always supported particularly gas, but with oil, it has always been a safety factor, that you have to make certain that you have safety provisions, none of them required. And then you came out with a proposal in February, before the spill, to gut the first responders, which I think is totally inappropriate.

So we are here to get the facts. I am not going to point fingers at BP, the private industry, when it is government's responsibility to set the standards, to do the inspections. I haven't gotten into the lack of inspections that they didn't conduct and they should have conducted even with that small warning in one sentence in the permit that they issued.

So, Mr. Chairman, I share your desire in making certain this doesn't happen again. It shouldn't happen again, and it must not happen again. And we will work with you in that regard.

I yield back.

Mr. OBERSTAR. I thank the gentleman for his comments.

Much of the criticism he raised is what I raised, but I think it is inflammatory to call it the "Obama oil spill"—and wrong. Those approvals that the gentleman cited were given early in the Obama administration by careerists who were not policy appointees.

The budget cuts that the gentleman cites were in our Committee budget submission that the Republican Members of the Committee and the gentleman himself all approved. There was termination of 378-foot cutters that date back to the '60's and '70's that were out-of-date and have been replaced by modern equipment. The personnel cuts accompanied those cutters.

The helicopter terminations were aged helicopters from the northern-tier States that would not have been available or suitable for deployment in the gulf for this situation.

The Coast Guard, in fact, responded promptly and, the very day of the fire, dispatched equipment to the scene. The cleanup is the responsibility of the responsible party under law. The government's role, Minerals Management and of the Coast Guard, is to oversee and make sure that that work is being done appropriately.

Mr. Rahall?

Mr. RAHALL. Thank you, Mr. Chairman.

Mr. Chairman, thank you for having these hearings today.

On April 5th of this year, an explosion in the Upper Big Branch Mine in my congressional district tragically claimed the lives of 29 brave souls. It was worst coal mine disaster in 40 years. Just 20 days later, 11 men lost their lives as a result of the explosion of the Deepwater Horizon rig in the Gulf of Mexico. What has ensued is the worst oil spill from a drilling platform in 41 years.

As we begin today's hearing, I think we must recognize the human toll from energy development. While efforts continue to find the cause of the blast at the Deepwater Horizon rig, to contain the spill, and to combat an environmental disaster, it is important that we remember, just as the President and the House of Representatives did for our 29 fallen miners, that we honor the 11 men who perished on April 25th, as I read their names:

Jason Anderson, age 35, Bay City, Texas; Aaron Dale Burkeen, age 37, Philadelphia, Mississippi; Donald Clark, age 49, Newellton, Louisiana; Stephen Curtis, age 39, Georgetown, Louisiana; Roy Wyatt Kemp, age 27, Jonesville, Louisiana; Karl Kleppinger, age 38, Natchez, Mississippi; Gordon Jones, age 28, Baton Rouge, Louisiana; Blair Manuel, age 56, Eunice, Louisiana; Dewey Revette, age 48, State Line, Mississippi; Shane Roshto, age 22, Liberty, Mississippi; and Adam Weise, age 24, Yorktown, Texas.

Psalm 23:4 says, Mr. Chairman, "Yea, though I walk through the valley of the shadow of death, I will fear no evil for thou art with me. Thy rod and thy staff, they comfort me."

Just as we have seen that energy development has seemed limitless, the industry has continued to push the envelope and reach depths that have heretofore been unfathomable: 2 miles of water in the Gulf of Mexico, 5 miles of rock in southern West Virginia—incredible numbers and incredible barriers, all surmounted to feed our undying thirst for more energy.

And as we continued to tackle new frontiers, we became convinced of our own superiority over nature. After all, we were told, there had not been an uncontrollable blow-out since 1969. Human ingenuity had triumphed, and safety was a forgone conclusion. Nothing, it seemed, could stop us now.

But this hubris contained the seeds of our downfall like the Greek mythological character Icarus, who made himself wings so he might fly higher and higher, oblivious to his own impending doom. We have dug further and further into the Earth, convinced that nothing possibly could go wrong. In both cases, Icarus and the Deepwater Horizon, the tragic reminder of our own imperfections ended up littering the ocean.

Again, thank you, Mr. Chairman, for holding this hearing. Next week, our Committee on Natural Resources will examine the Deepwater Horizon disaster in terms of not only what happened at this particular rig but the meaning of this disaster as it relates to the future of oil and gas leasings off the coast of the United States.

Mr. OBERSTAR. We will look forward to the transcript of the gentleman's hearing. I might even sit in on it, if I have the time to do so.

We will now recognize Mr. LoBiondo.

Mr. LOBIONDO. Thank you, Mr. Chairman. I appreciate your holding this hearing.

Since the Deepwater Horizon exploded and sank nearly 4 weeks ago, we have heard repeatedly how 11 crew members tragically lost their lives, and now the Nation faces an enormous economic and environmental disaster.

The Federal Government began its investigation into the causes of the initial explosion and the failure of the blow-out preventer last week. However, it is painfully clear that the administration and industry were simply not prepared to respond to an oil spill at this depth and of this magnitude. There was certainly no adequate plan in place to respond to this type of spill. And we should never be in a situation where we find ourselves now, where we are literally testing response technology as we try to clean up the spill. This is completely unacceptable.

I am also concerned that the Federal Government and particularly the Coast Guard may not have had the level of resources and authorities to fully respond to a situation such as this. And I would like to point out that, if we move forward with the President's budget, that we, I think, are going to cause enormous potential damage to the Coast Guard's ability to respond.

Mr. Chairman, I very rarely like to disagree with you publicly, but the "Views and Estimates" letters restored the two 378-foot cutters, restored all the helicopters, restored all of the maritime security teams. And I don't think anybody on our side of the aisle ever gave any indication that we approved, in any way, what the President was trying to do.

And I think, for many of us, we have seen what happened over the years when we have asked the Coast Guard to do more with less. And they have graciously said, "Yes, we will, and we will try," but they are tasked with an enormous responsibility, from maritime antiterrorism, to port security, to overseeing spills like we're seeing now, to illegal drugs, to fisheries enforcement. How can we possibly expect them to do their mission that we are giving them if we are going to talk about cutting personnel?

In our Committee, Mr. Cummings has—we began discussions on this. And I want to thank Mr. Cummings for agreeing to join together so we can find a way to keep this from happening. I hope, Mr. Chairman, you use your enormous position of authority and responsibility to convince others that this is a terribly wrong move. We look to the Coast Guard in times like this to not only oversee but, if necessary, to take a lead role. And we have to anticipate that the unexpected would happen and have them in a position of readiness, both from an asset and from a personnel standpoint.

So I hope that holding this hearing provides the Committee with an opportunity to hear from all parties on how we respond to this bill. And I thank you, Mr. Chairman, and hope that we can join in with Mr. Mica and Mr. Cummings and yourself to find a clear path forward to help solve these things in the future.

And I thank you very much.

Mr. OBERSTAR. I thank the gentleman for his comments.

And I take a backseat to no one in my defense of the Coast Guard with my 35 years of service in the Congress. We have, in our Views and Estimates, objected to the reductions. But the terminations of those old cutters to be replaced by new cutters is appropriate, and those replacements have been made. The personnel cuts, we felt, were inappropriate and should be relocated rather than terminated. And that is why our Committee Views and Estimates is very strong.

I just wanted to make the point that those were old cutters and that they—built in the '60's and '70's, and are being replaced.

Ms. Johnson?

Ms. JOHNSON OF TEXAS. Thank you very much, Mr. Chairman, for holding this hearing.

If I may, Mr. Chairman, I would like to start by recognizing the 11 victims of the Deepwater Horizon explosion and the fire in the Gulf of Mexico last month. As we continue this Committee's investigation into the events surrounding this ongoing ecological disaster, we should not lose site of the fact that 11 individuals lost their lives by simply showing up for work on a daily basis.

I applaud the fine work of the U.S. Coast Guard and others for their valiant efforts to locate those lost in the hours following the initial explosion. I also wish that the outcome was different, but the valiant efforts were worth doing.

Today's hearing focuses on the factors that led up to the Deepwater Horizon explosion as well as ongoing response action of both the British Petroleum and the Federal and State resource agencies. Today, this Committee will investigate whether actions of the previous administration to look the other way on regulating big oil was a significant factor in this incident.

However, today's hearing compels us to ask broader questions about the wisdom of oil explosion policies that push the envelope of drilling technologies without any assurance that these exploratory wells can shut down if something goes wrong. Every day for the past month, somewhere between 5,000 and 80,000 barrels of oil were released into the gulf.

Mr. Chairman, I ask for unanimous consent to put the rest of my statement in the record.

However, I will close by asking the gentlemen to, please, as they testify, to convince me that it was not greed that caused them to ignore what it takes to control these types of incidents and not taking into consideration the people or the environment. Please, I hope you will tell me that this is not true.

Thank you. I yield back.

Mr. OBERSTAR. The gentlewoman's statement, without objection, will be included in full in the record.

The Chair now recognizes Mr. Cao of Louisiana.

Mr. CAO. Thank you, Mr. Chairman.

And, Mr. Chairman, today I sit here with a heavy heart just thinking about the 11 lives that were lost and the thousands of lives of the people in my district who are struggling to survive as a result of the negligence that caused the explosion and the ensuing oil spill.

It has only been 5 years since Katrina devastated New Orleans and the Second District, and we are still struggling to rebuild from Katrina, and now this occurs. This disaster has threatened hundreds of miles of our shorelines, and thousands of people along the gulf coast are wondering what we can do to protect them and their livelihoods.

The economic, psychological, and mental impacts on the people in the region has been devastating. I have heard from fishermen who are even contemplating suicide. So we have a serious problem on our hands. And what are we going to do in order to help the people of my district and the people along the gulf coast?

I hope that the Congress and the parties who are involved can come up with a comprehensive plan to help those people who are immediately impacted economically, mentally, and psychologically. I hope that we come up with a comprehensive plan to look into the long-term redevelopment of the fishing industry, the seafood industry, and the economy of New Orleans and the region.

And I hope that we will pass the legislation that I have filed in the House to allow Louisiana and the gulf coast regions to receive royalties in 2011. And I ask, Mr. Chairman and all the Members of this Committee, that we hold all parties responsible to pay for every penny that this devastation has caused to the people of New Orleans and of the region.

Thank you. And I yield back.

Mr. OBERSTAR. I thank the gentleman for his statement.

Mr. Cummings, Chair of the Coast Guard and Maritime Transportation Subcommittee.

Mr. CUMMINGS. Thank you very much, Mr. Chairman.

And I, too, express my sympathy to those families who suffered losses as a result of this incident.

Mr. Chairman, this is a very important hearing for a lot of reasons. I was just down in the gulf just this past weekend and received a briefing regarding the current situation from Rear Admiral Mary Landry, the commander of the Coast Guard's Eighth District and the Federal on-scene coordinator for this event. And Chairman Corrine Brown and I are going to be going again very shortly.

But I know that the Coast Guard, like all of the Federal agencies responding to this event, has mobilized every possible resource to try to protect the environment and livelihoods of the gulf region. And I commend the Coast Guard, as well as the leadership of the outgoing commandant, Admiral Thad Allen, who is the national incident commander for this event.

And I would say to Ranking Member Mica that Thad Allen—he may have been appointed at a certain point, but he has been on the job much longer than that, addressing this issue.

I also commend all the responding agencies for their extraordinary efforts. Mr. Chairman, we should note that there are about 20,000 people right now working on this. And not only are all of our appropriate government agencies working on it with everything they have, but the private industry is, not only BP. I understand Exxon and others are also pitching in.

The events that culminated in the loss of the Deepwater Horizon and the subsequent oil spill are very complex, and there are many different and interrelated issues that require in-depth investigation, including the following: the circumstances and conditions under which the drilling plan was approved; the Minerals Management Service's oversight of drilling operations in offshore areas, including the inspection of blow-out preventers; the adequacy of BP's oil spill response plan for the Macondo well site and, frankly, their adequacy of all oil spill response plans for the sites in Deepwater; and the adequacy of the response which has been conducted by BP, as the responsible party, and overseen by the Coast Guard, and which has involved the participation of numerous agencies.

Mr. Chairman, it is imperative that every aspect of this situation be assessed and understood. And I applaud President Obama's decision to create the Presidential commission to thoroughly examine this.

Finally, let me say this: I think it is very important that the Coast Guard play a much more significant role in the approval of the disaster plans and not just come in at the tail end to do the cleanup and to carry out those plans. And, in talking to Rear Admiral Landry this weekend, one of the things that she emphasized is that the Coast Guard needs to be involved in this process from the very, very beginning.

And I am hoping, Mr. Chairman, that we could all work together to make sure that that happens, because that makes sense. You don't ask somebody to clean up something and then—but they have never been a part of the process to make sure that the plan was approved from the very beginning.

And so, I look forward to the testimony, and I will submit my entire written statement for the record.

Mr. OBERSTAR. Without objection, the gentleman's entire statement will be included in the record.

I had the opportunity, also, to have a review, a flyover with the Coast Guard. Ms. Miller, as well, was part of the Canada-U.S. Inter-Parliamentary Group meeting in New Orleans just 2 weeks ago. And we had a briefing at the command center. It was very instructive.

And I am hoping that we will be able to get clearance from the Speaker to take a delegation of Members from both sides of the aisle to Louisiana at an appropriate time when we are not interfering with the ongoing work of recovery and response. But, as soon as we get clearance, we will take a significant delegation of Members to see firsthand the workings in the gulf.

In the tradition of our Committee's longstanding experience and practice on oversight hearings, I ask members of the panel to stand, raise your right hand.

With regard to the testimony you provide to the Committee on Transportation and Infrastructure today and all subsequent Committee communications concerning the hearing, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Thank you.

We will begin with Mr. McKay.

Thank you for being with us. We look forward to your testimony.

TESTIMONY OF LAMAR MCKAY, PRESIDENT, BP PLC; STEVEN NEWMAN, PRESIDENT AND CEO, TRANSOCEAN LTD.

Mr. MCKAY. Thank you, Chairman.

Chairman Oberstar, Ranking Member Mica, Members of the Committee, my name is Lamar McKay, and I am president and chairman of BP America.

We have obviously experienced a tragic series of events. Nearly 1 month ago, 11 people were lost in an explosion and fire aboard the Transocean Deepwater Horizon drilling rig, and 17 others were injured.

My deepest sympathies go out to the families and friends. They have suffered a terrible loss. The gulf coast communities are affected, thousands of people are affected by this, and their livelihoods are being impacted.

I have seen the response firsthand. I have talked with and met with the men and women on the front line. There is a deep and steadfast resolve to do all we humanly can to stop this leak, contain the spill, and to minimize the damage. As a responsible party under the Oil Pollution Act, we will carry out our responsibilities to mitigate the environmental and the economic impacts of this incident.

Our efforts are part of a unified command that was established within hours of the accident. And that provides a structure for our work with the Departments of Homeland Security, Interior, other Federal agencies, as well as State and local governments. We are committed to working with President Obama, members of his Cabinet, the Governors, congressional Members, State agencies, local communities in Mississippi, Alabama, Louisiana, Florida, and Texas.

I want to underscore that the global resources of BP are committed to this effort, and they have been from the outset. Nothing is being spared. Everyone understands the enormity of what lies ahead and is working to deliver an effective response at the wellhead, on the water, and on the shoreline.

Before I describe our response efforts, I want to reiterate our commitment to find out what happened. There are two key lines of inquiry here. First is what caused the explosion and fire onboard Transocean's Deepwater Horizon; and, second, why did the rig's blow-out preventer, the key failsafe mechanism, fail to shut in the well and release the rig?

We are cooperating with the joint investigation by the Departments of Homeland Security and Interior as well as investigations by Congress. In addition, BP has commissioned an internal investigation, the results of which we plan to fully share. In the meantime, we cannot draw any conclusions before all the facts are known.

Now, our sub-sea efforts to stop the flow of oil and secure the well are advancing on several fronts. Our immediate focus is on the riser insertion tube. This involves placing a tapered riser tube into the end of the existing damaged riser and drill pipe, and that is the primary source of the current leak. The gas and oil then flows, under its own pressure, up the riser tube to the Enterprise Discoverer drillship on the surface.

We are working to stabilize the system to maximize the capture of oil and gas through the riser insertion tube. To stop the flow of oil, we are preparing what is known as a “top kill.” It uses a tube to inject drilling mud and cement directly into the wellboard to stop the flow. It is a proven technique, but it has never been used in 5,000 feet of water.

We’ve begun drilling two relief wells to intercept and seal the original well. The latter will take an estimated 3 months. Unified Command, as supported by the EPA, has approved the application of dispersant directly at the leak site.

On the open water, a fleet of more than 900 response vessels has been mobilized. In addition to using the approved biodegradable dispersants at the leak point, we are attacking the spill on the surface with the EPA- and Coast Guard-approved dispersants.

To protect the shoreline, we are implementing what the U.S. Coast Guard has called the most massive shoreline protection effort ever mounted. We’ve got 1.9 million feet of boom already deployed, with over 1 million feet available; 17 staging areas are now in place; 15,000 volunteers have volunteered to help; and we have about 20,000 people working on this issue.

We recognize that, beyond the environmental impacts, there are also economic impacts. BP will pay all necessary cleanup costs and is committed to paying all legitimate claims for other loss and damages caused by the spill. We are expediting interim payments to individuals and small-business owners whose livelihoods have been affected. We have paid over 19,000 claims so far. We have online filing 24-hour-a-day, 7-day-a-week phone and walk-in claim offices. We are striving to be efficient and fair. We are taking guidance from the established regulations and other information provided by the U.S. Coast Guard, which has handled and resolved these types of claims in the past.

Now, tragic as the accident was, we must not lose sight of why BP and other energy companies are operating in the offshore, including the Gulf of Mexico. The gulf provides one in four barrels of oil produced in the country, and it is a resource our Nation requires.

BP and the entire energy industry are under no illusions about the challenge we face. We know that we will be judged by our response to these events. No resource available to this company will be spared. I can assure you that we and the entire industry will learn from this terrible event. We will emerge from it stronger, smarter, and safer.

I thank you for the opportunity to be here, and I will answer any of your questions.

Mr. OBERSTAR. Thank you, Mr. McKay.

Mr. Newman?

Mr. NEWMAN. Chairman Oberstar, Ranking Member Mica, other Members of the Committee, thank you for the opportunity to speak with you today.

My name is Steven Newman. I am the chief executive officer of Transocean Limited. Transocean is a leading offshore drilling contractor, with more than 18,000 employees worldwide. I am a petroleum engineer by training, and I have spent years working on and with drilling rigs. I have been with Transocean for more than 15 years, and I am proud of the contributions our company has made to the energy industry during that time.

Today, however, I sit before you with a heavy heart. The last few weeks have been a time of great sadness and reflection for our company and for me personally. Nothing is more important to our company and to me than the safety of our crew members. And our hearts ache for the widows, parents, and children of the 11 crew members, including nine Transocean employees, who died in the Deepwater Horizon explosion. These were exceptional men, and we are doing everything we can to help their families cope with this tragedy.

Over the last few weeks, we have also seen great acts of courage and kindness in our colleagues and in our communities. That courage and kindness was embodied by the 115 crew members who were rescued from the Deepwater Horizon and were as focused on the safety and wellbeing of their colleagues as they were for themselves.

It was also embodied by the brave men and women of the U.S. Coast Guard who provided on-scene response and search and rescue efforts; and by the medical professionals and friends and family who greeted the crew members as they came ashore. And it is embodied by our friends and colleagues at Transocean and across our industry who have rallied to help the families of the men who were lost.

This has been a very emotional period for us at Transocean, but it has also been a time of intense activity and effort. Immediately after the explosion, Transocean began working with BP, the Coast Guard, NOAA, and the Unified Command in the effort to stop the flow of hydrocarbons from the well. Our finest engineers and operational personnel have been working directly with BP to identify and pursue alternatives to stop the flow of hydrocarbons.

Two of our drilling rigs, the Development Driller II and Development Driller III, are on scene drilling the relief wells. Our drillship, the Discoverer Enterprise, is on scene, conducting crude oil recovery operations. We will continue to support BP and the Unified Command in all of these efforts.

At the same time, we have been working hard to get to the bottom of the question to which this Committee and the American public want and deserve an answer: What happened on the night of April 20th, and how do we assure the American public that it will not happen again?

Transocean has assembled an independent investigative team to determine the cause of those tragic events, a team comprised of Transocean and industry experts. They will be interviewing people who have potentially helpful information and studying the operations and the equipment involved.

Because the drilling process is a collaborative effort among many companies, contractors, and subcontractors, the process of understanding what led to the April 20th explosion and how to prevent such an accident in the future must also be collaborative. Our team is working side by side with others, including BP and governmental agencies, to get to the bottom of this issue. And these efforts will continue until we have satisfactory answers.

While it is still too early to conclude exactly what happened on April 20th, we do have some clues about the cause of the disaster. The most significant clue is that these events occurred after the well construction process was essentially complete. Drilling had been finished on April 17th, and the well had been sealed with casing and cement.

For that reason, the one thing we do know is that, on the evening of April 20th, there was a sudden catastrophic failure of the casing, the cement, or both. Without a failure of one of those elements, the explosion could not have occurred. It is also clear that the drill crew had very little, if any, time to react. The initial indications of trouble and the subsequent explosions were almost instantaneous.

What caused that sudden violent failure, and why weren't the blow-out preventers able to squeeze, crush, or shear the pipe? Those are critical questions that must be answered in the weeks and months ahead.

Until we know exactly what happened on April 20th, we cannot determine how best to prevent such tragedies in the future. But, regardless of what the investigations uncover, ours is an industry that must put safety first. We must do so for the sake of our employees, for the sake of their families, and for the sake of people all over the world who use, enjoy, and rely on our oceans.

Thank you again for the opportunity to speak, and I am happy to answer your questions.

Mr. OBERSTAR. Thank you also, Mr. Newman, for your statement.

And I very much appreciate, as I am sure the families of the victims as well as those who survived the blast, both of you expressing your solidarity with the families, your grief at the loss of life, and your commitment to support those families, and your recognition of the work of the U.S. Coast Guard, who were promptly on the scene and who have done everything in their technical capability to address this spill, and that the two of you seem to be working together rather than in previous appearances seemed to be pointing fingers at one another.

But, Mr. McKay, as I said at the outset, our Committee has had extensive experience, under both Republican and Democratic majorities, with BP. I cited the March 2, 2006, 5,000-barrel oil spill on the north slope.

It's not so much the spill, which is serious in and of itself, the worst in the history of oil development on the north slope, but that it went undetected for 5 days, that the company ignored four alarms on its system, that the Federal investigation established that BP did not have maintenance or internal inspection procedures. And, ultimately, PHMSA, the pipeline safety administration, ordered BP to replace the pipe.

March 15, a corrective action order was issued to BP to run cleaning pigs, perform inspections. July 20, ordered BP to remove all crude oil from its Western Operation Area pipeline and clean the pipe.

Admiral Barrett, retired Coast Guard admiral, made head of PHMSA to preside over this oversight. August 10, 2006: "I continue to find the presence of hazardous conditions on three pipelines that would likely result in serious harm to property or the environment."

April 20 of the following year, a third corrective action order to BP. October 15 of that year, toxic spill of methanol, 2,000 gallons, at Prudhoe Bay. October 25, 2007, the Justice Department settled with BP at $20 million in penalties and 3 years' probation, $12 million of criminal fines. That is a sorry record.

What I want to know is: What is the state and the culture of commitment to safety in the BP boardroom? Safety does not begin with Coast Guard. It does not begin with the Minerals Management Service.

It does not begin, with United Air Lines, American Airlines and Delta Airlines, it doesn't begin with the FAA. It begins in the corporate boardrooms of those airlines. So if there isn't a culture of safety in the corporate boardroom, it is the role of the government to set minimum standards and oversee that they are followed.

I want to know, what have you changed in the corporate culture of BP?

Mr. MCKAY. In 2005 and 2006 we had very serious accidents, as you have noted. In 2007, Tony Hayward, our CEO, came in and has made it absolutely, absolutely clear that the number one agenda item for this company is safety and compliance.

We have changed a lot. The leadership has been almost entirely revamped. Management has been revamped. There has been a Safety and Environmental and Ethics Audit Committee established at the board level and robustly utilized. There has been what is called a group or a corporate Operational Risk Committee that has been organized under Tony Hayward to understand risk across the company. There has been a safety and operational integrity organization that has been set up separately to oversee the safety and operational integrity issues throughout the company. We have instituted an operation management system that is rigorous and extremely detailed that we are implementing across every single operating business across the company.

We have made a lot of progress. The job will never be finished, but we are making progress.

I have got 23,000 people in the U.S. that I think are committed to this company becoming the safest company in the country. As far as this incident goes, we don't know what happened yet. I can assure you, I can assure you, anything we learn through this incident at all and can make operations safer, ensure that we don't have any environmental problems, will be undertaken—will be undertaken.

Mr. OBERSTAR. I am glad to hear you have an Operational Risk Committee, that you have made the structural changes that you discussed. I think those are steps in the right direction. But in the exploration plan submitted for the Mississippi Canyon 252 site, BP said, "In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on industry-wide standards for using proven equipment and technology for such responses. Implementation of BP's regional oil spill response plan which address available equipment and personnel, techniques for containment and recovery of oil spills," meaning it is not going to have much—would you make that statement today?

Mr. MCKAY. What I would say, some of the bases and assumptions that were made across the industry as well as ourselves are partially predicated on a blowout preventer that works, or if it doesn't work, it can be manually intervened with with remote-operated vehicles, and if that doesn't work, if I could explain, we have an extremely unique situation that I have never seen in my history anywhere where we did not have the riser release, the emergency disconnect did not work, so we have got a marine riser package on top of the blowout preventer with 4,300 feet of twisted riser on the end which makes this an extremely complex operation, and we can't get on top of that blowout preventer. So it is a very unique situation.

Those plans, if I could just expand a little bit, the plans for the surface response are very robust. I think they were enacted within 2 hours of the explosion. And that has proved to be impactful, I think, effective, and the Commandant has talked in detail about that. Under his leadership, I think that effort is going as aggressive as it can go.

What I do think we need to acknowledge is that sub-sea intervention, this is the first time, this is an unprecedented event, there have been 42,000 wells drilled in the Gulf of Mexico, we have not had an event like this, I do believe sub-sea intervention and the planning around sub-sea intervention and the capability will need to be looked at in light of this event. And I think that is an industry issue, a regulatory issue, and certainly a company issue.

Mr. OBERSTAR. But it does need to be looked at, revisited and reexamined. But Transocean has considerable experience in operating at great depths. The depth of this well, in the briefing that I heard from the command center, is considerably below the depth to which our Los Angeles class nuclear submarines can dive; extremely dangerous conditions, very risky. So every precaution should be taken.

Did you, Transocean, have knowledge of and awareness of the 14 failures of blowout preventers and the 117 that failed at one time or another, and did you question whether they would be able to function at that depth and in that temperature of water, very cold water?

Mr. NEWMAN. In response to your question, Congressman, Transocean, as one of the leading offshore drilling contractors, has a tremendous amount of experience in operating and deploying blowout preventers in significant water depths. And all of the industry's experience with respect to the performance of those BOPs is taken into consideration in the development of our maintenance plans, in our rigorous inspection and testing programs, and in the performance of our equipment.

Mr. OBERSTAR. The blowout preventer was produced by Cameron Petroleum of Houston. Do you check, do you subject that blowout preventer to operational capability at 5,000 feet depth and 30 degree temperature of water?

Mr. NEWMAN. The BOP is tested while it is on bottom. It is tested every week, the function of it, and every other week the pressure containment capability of the BOP is tested. It was tested—the pressure containment capability of the BOP was tested and successfully passed those tests on April 10th, and the function of the BOP was tested again on April 17th and passed those tests as well.

Mr. OBERSTAR. Who supervised those tests?

Mr. NEWMAN. Those tests are conducted by Transocean under the watchful eye of BP, and when MMS visits the rig——

Mr. OBERSTAR. Not under the watchful eye of the Coast Guard or the Marine Services of the Interior Department?

Mr. NEWMAN. MMS visits the rig regularly. They last visited the Deep Water Horizon on April 1st.

Mr. OBERSTAR. They did not supervise that test?

Mr. NEWMAN. They are not present on the rig when those tests are conducted.

Mr. OBERSTAR. Thank you.

Mr. Mica.

Mr. MICA. Well, thank you. I was reading through this submission I put in the record from the Inspector General of the investigations that concluded in 2008. I do not see BP listed. I do see Chevron as one company that was involved in that investigation.

Do either of you know of any involvement in some of the inappropriate or potentially illegal or criminal activity with your employees in these investigations?

Mr. McKay.

Mr. MCKAY. Are you referring to the MMS?

Mr. MICA. Yes.

Mr. MCKAY. I know of no BP involvement.

Mr. MICA. How about you, Mr. Newman, anyone with your firm?

Mr. NEWMAN. No Transocean involvement, sir.

Mr. MICA. OK, just for the record.

I cited the Obama administration has approved nearly three dozen deepwater rig proposals. Some have been approved, but some are pending. Do you have others in this list, Mr. McKay? Are you aware of the list? Do you have others that are considered deepwater exploration proposals before——

Mr. MCKAY. I am sorry, I can't see that list, but we do have other——

Mr. MICA. Just tell me if you have others.

Mr. MCKAY. Yes, we have other deepwater operations and proposals

Mr. MICA. In what depths?

Mr. MCKAY. In deep water, anywhere from probably 3,000 to 4,000, to probably 7,000, 8,000 feet.

Mr. MICA. OK. Well, again, I wasn't aware that there were this many approved or pending. You said in your industry experience or experience that you know of in industry, they have never had a situation like this occur before, a blowout like this, is that correct?

Mr. MCKAY. Yes. I don't believe there has been a blowout in 5,000 feet of water. That is true.

Mr. MICA. Of course, I have cited the approval for your exploring was approved by the Obama administration March 10th, it is called the BP Mikado exploration plan. This is the plan that was given. They didn't have a top hat or any kind of a mechanism proposed in this plan that I saw. It was constructed, being constructed after the incident. But this is basically what you submitted.

Then I have a copy of the approval that was given to you, the BP permit, which I just got the first copy of yesterday. The only exception I saw or anything that looked out of the ordinary was "exercise caution while drilling due to indications of shallow gas and possible water flow." Other than that, they pretty much approved this plan carte blanche, is that correct?

Mr. MCKAY. Yes, I believe that was right.

Mr. MICA. I am not an engineer, but how about—well, first of all, we have never experienced anything at that depth, and you guys have done this around the world. Are there any other protections? The Europeans had another measure. I am not sure if that would have made any difference.

Mr. Newman, would it make any difference?

Mr. NEWMAN. I don't believe in this case the acoustic control systems that you referred to would have made a difference.

Mr. MICA. But it wasn't required—it was not required as part of this plan?

Mr. NEWMAN. It is not required in the U.S.

Mr. MICA. And you seem to be sort of experimenting with the bell or the top hat. We really need to make certain that we have—we are going to drill in the future. We have got to. Of course, the United States is hooked on, unfortunately, on fossil fuel, and you said 25 percent of our supply is in the Gulf. We are so dependent now, what, 60-plus percent coming from foreign sources.

My concern is having some protections, and this may be an expensive lesson learned, but is it possible to develop and have in reserve additional technologies or protections again that we can have ready to go, so-to-speak, so this doesn't happen again?

This is sort of a guesstimate, Mr. McKay. Do you think we can do that, Mr. Newman?

Mr. MCKAY. I believe a couple of things. One, this is the largest sub-sea response that has ever been put together in history. You mentioned the top hat. We actually had the cofferdam prepared. But please understand this is such a unique situation, where we have a damaged riser on top——

Mr. MICA. Right, you described that, yes.

Mr. MCKAY. Laying in a trench. So it was hard—it is impossible to predict we were going to have a riser laying in a ditch and deal with it.

Mr. MICA. But is it possible to come up with the technology?

Mr. MCKAY. To get to your point——

Mr. MICA. What we have to do is give assurance that this isn't going to happen again. Now, you are BP North America, but BP is the larger international corporation. Stop and think about this. I was on C–SPAN this morning and some caller came in and said, Mr. Mica, what about China drilling off of Cuba?

I believe they have been exploring down there, haven't they? Are you aware?

Mr. MCKAY. I don't know if they have drilled anything. I think they have been talking.

Mr. MICA. Exploring. OK, well, we will say they do that. That is 45 miles, halfway between Cuba and the United States. We have no control over that. I haven't seen any permits requested by China off of the shores of Cuba. But my point is we need to be ready and we need to have in reserve. That is not particularly the Coast Guard's responsibility. They have another important role and they fulfill that very well. But we need to be ready in case something happens.

I am reminded, too, you look at the history of these things, folks. In 1979, the worst incident took place in the history of oil spills in the Gulf. It was off the coast of Mexico. It wasn't anything permitted by our guys that were asleep at the job on this particular incident. But that went for 9 months. Nine months.

So I think we need to be prepared not only for another incident in the deep water, and we have got a whole list, we will put this in the record too, Mr. Chairman, this is the list of the Obama approvals on deepwater rigs.

You are telling me you are doing it again in deep water. My point is we have got to make certain if it is done and we give approval that it is done right, and we also have a backup plan for those that we can't control so we are not looking at an entire Gulf shoreline covered in slick oil.

Would you say that is an appropriate way to go, Mr. McKay, Mr. Newman?

Mr. MCKAY. I would say that we will learn a lot through this and sub-sea intervention and capability will need to be understood in terms of industry capacity and potentially regulations.

Mr. MICA. Mr. Newman?

Mr. NEWMAN. Yes. Congressman, I think it is fair to question reevaluation of response capability in light of what we learned as a result of this incident.

Mr. MICA. I yield back.

Mr. OBERSTAR. Without objection, the list requested by the gentleman will be included in the record, along——

Mr. MICA. Mr. Chairman, I would also like to put for the first time, I don't know if this was made public before today, but the United States Department of Interior permit that was granted to BP April 6th, 2009.

Mr. OBERSTAR. The Minerals Management Service document of April 6th, 2009, will be included in the record. The list that the gentleman requested be included in the record will be, without objection, included in the record, along with a list that we have developed of all the approvals during the 8 years of the Bush administration which did not require any top hat or any blowout preventer corrective action.

Mr. Rahall.

Mr. RAHALL. Thank you, Mr. Chairman.

Mr. McKay, BP submitted a regional oil spill response plan that covered the activities of this well. The plan, which describes BP's response to a spill anywhere in the Gulf of Mexico, has a worst case scenario that only envisions a major spill from one particular spot in the Gulf. This plan is supposed to cover all of BP's operations in the Gulf, from Texas to Alabama.

My question is, what exactly is the usefulness of a worst case scenario for the entire Gulf if it only looks at the impacts of a spill from one particular spot?

Mr. MCKAY. The plan you are referring to fits under the national contingency plan and then the one Gulf plan, and then industry utilizes response plans as per government regulation. That particular plan is the basis and the model for our surface response.

That has all the equipment in the Gulf Coast noted. It has all the organization of people that will be called. It is up-to-date. It was utilized literally when this explosion happened and has been the foundation by which the Coast Guard and ourselves and the other government agencies have reacted across the Gulf in terms of the surface response, and that has proved to be a good foundation, that response plan.

So that particular plan is not specific to every location, but it serves the Gulf Coast response.

Mr. RAHALL. As I understand it, the plan also looks at coastline impacts.

Mr. MCKAY. It does. The plan is very encompassing. It contemplates fighting it offshore, protecting the shoreline and cleaning up anything that gets to shore. So it is an extensive plan. It is several hundred pages.

Mr. RAHALL. But what happened in this particular disaster? Why was it not effective?

Mr. MCKAY. I think it has been effective. I think the plan is working. That is what we are exercising with the Coast Guard under Unified Command. That is the plan. It is being obviously flexed and deployed as things change, but that is the plan.

Mr. RAHALL. The worst case scenario in your oil spill response is 250,000 barrels a day, is that correct?

Mr. MCKAY. Yes.

Mr. RAHALL. Do you prepare for a one-time release of 250,000 barrels, or are you prepared for that to last multiple days, and, if so, how many days are you prepared for it to last?

Mr. MCKAY. I believe the way those are put together is 30 days, I believe.

Mr. RAHALL. 250,000 barrels a day for 30 days?

Mr. MCKAY. Yes.

Mr. RAHALL. You stated that BP has already begun to provide lost income interim payments to people who have been impacted by this spill. Who has gotten those payments thus far?

Mr. MCKAY. These are fishermen, business owners along the Gulf Coast that are directly impacted, marinas. Anyone who is having—either not working within the effort and being paid or having their income affected at all. We have opened, I think by the end of this week it will be 17 claims centers.

So it is people that are being affected right now, and we are trying to make sure people don't have any problem meeting their payments or their needed expenses to live. So there are thousands of people being impacted by this, and we have ramped up a claims system that is addressing those needs.

Mr. RAHALL. So BP has established these claims offices, much like FEMA might after a flooding disaster, and you are making the decisions on who, whether if is fishermen or hotel owners, are receiving these payments?

Mr. MCKAY. Yes. What we are using, we have a structure under the Oil Field Pollution Act that is—we have accepted, formally accepted, we are a responsible party and we are responsible to pay the cleanup costs and to act under the Oil Field Pollution Act. We have accepted that responsibility. That gives us the onus of broad responsibilities, meaning extensive. We have accepted and we will fully fulfill that, and we are doing that.

We have made it clear from the outset, made it very clear, we are going to pay all legitimate claims associated with this. And there is a natural resource damage assessment study that is underway with NOAA as the lead Federal trustee to establish resource damage for restoration.

Mr. RAHALL. When an individual accepts payment, do they waive any future claims against BP?

Mr. MCKAY. No. No. In fact, if the payment were denied or is not big enough in someone's opinion, there is a separate process they can go through the Coast Guard. On top of that, we have not had anybody sign any waivers of any sort whatsoever, so they have the potential for litigation or anything else they need.

Mr. RAHALL. They have still have that potential then?

Mr. MCKAY. Yes. Absolutely. I just want to be clear. We are trying very hard to be fair, responsive and expeditious. We do not—we want to minimize any impact we possibly can on the Gulf Coast.

Mr. RAHALL. Thank you.

Thank you, Mr. Chairman.

Mr. OBERSTAR. Supplemental to Mr. Rahall's comments, I would just cite the Oil Pollution Liability Act of 1990 that each responsible party for a vessel or facility from which oil is discharged or poses substantial threat of discharge into or upon navigable waters or adjoining shorelines or Exclusive Economic Zone, is liable for removal, costs and damages that result from such incident."

Damages include injury to, destruction of, loss of, loss of use of natural resources, injury to economic losses resulting from the destruction of real or personal property, including loss of taxes, royalties, rents, fees recoverable by the United States, a State or political subdivision, loss of subsistence use of natural resources, damages for net cost to governments of providing increased or additional public services, and there are no limits on liability if a spill is proximately caused by willful misconduct, gross negligence or violation of Federal safety, construction, or operating regulation.

I think that supplements very well the points the gentleman was making and exposes BP to a very wide range of cost coverage here.

Now I will yield to Mr. Young, former Chairman of the Committee, who I would have recognized at the outset, but he was just returning from Alaska, from a funeral of former Secretary of Interior Wally Hickel. It was a noble thing to do, to be there in tribute to him.

I will now recognize the gentleman for an opening comment and then questions.

Mr. YOUNG. Thank you, Mr. Chairman.

As I was sitting here deja vu, you and I helped write OPA. I think we are the only two Members in Congress that wrote OPA. The reason I bring that up, gentleman, and Mr. Chairman, is the Exxon Valdez spill was a tragedy, such as this one is, the first one we had of that magnitude, although Secretary of the Interior Wally Hickel had the same thing occur off the coast of Santa Barbara. But out of that, we were able to write OPA, and I think it is a good piece of legislation, because until that time we had no way to respond to an oil spill, and we developed a good system with the Coast Guard, with the communities, and it has worked very well.

We did not prepare for this type of spill, for both you gentleman, this far offshore. I think out of this, as you mentioned, we should learn how to in fact keep that from happening. Under our Exxon Valdez spill, we do have the liability clauses. We have the double tugs that take and escort the vessels out, we have the double hull vessels, we have the booms, we have the rescue vehicles. We have done everything I believe to prevent a spill coming in or going out of a petroleum product. Now we have to address this issue and solve the problem.

I want to stress to this Committee that this is in fact to try to find out what did happen and how do we prevent it from happening again, because we are going to drill. We didn't shut the pipeline down when we had the spill. We continued pumping oil to the lower 48, not to overseas. We continued taking tankers through the Straits. And, like anything else, we have to go forth and learn from what occurred.

The one thing I would caution you, and I say this to everybody in the audience and the Committee, the desire to clean up sometimes causes more damage than you might consider.

We have cases in Prince William Sound where we used steam, where we used Dawn soap. If you had any Palmolive Dawn Soap, or whatever it is, any stock, you did well. But actually the damage from that was probably more far-reaching, because we were trying to clean something that was visually offensive to the human eye.

So let's be very careful what dispersants we use, what type tactics we use. The desire to do so because the media is always looking at that dead duck, as I saw with Exxon Valdez, be very careful. That is all I suggest to you.

One thing I would stress and I am going to go to my questioning, Mr. Chairman, is the thing that was most unjust in the tragedy of the Exxon Valdez spill, was not necessarily the environment. It was the impact upon the fishermen and those that derived income and livelihood. Twenty-two years we were in court with the responsible party, 22 years, gentleman, and when it finally settled, I think the amount of money received was less than $5,000 per fisherman.

I don't want to see that in the Gulf. And I believe, Mr. McKay, and I will ask you in a moment, that you are addressing that issue now. Once it gets into court, my good friends, you are creating a problem for those that should receive the benefits from this tragedy, and when I say benefits, recovering the loss of income because of it. That is the one issue.

The environment has recovered. Yes, some will disagree with me. We did lose one species of fish to some degree, but not totally, and that was the herring, because we lost the spawning eggs on the shore. The salmon have come back, very well done, the environment looks great. You can't hardly see it. Yes, there is some oil under the rocks, and that has been there before. But that is my one challenge to you, to make sure that whatever you do in this cleanup process, make sure it does not do more damage.

That goes back to my first question. Mr. McKay, the fishermen. You are now settling with fishermen insofar as lost income, and that is really created not by this spill because the State won't allow them to fish, NOAA won't allow them to fish?

Mr. MCKAY. We are settling with fishermen. Some of the fishing areas are closed. There is about 19 percent of the Gulf closed right now. So there are closed areas. We are compensating those fishermen. Actually, most of these fishermen want to work rather than just get claims. So a lot of those fishermen are working in terms of the response.

Mr. YOUNG. I understand that, and I commend you for that, paying I understand a considerable amount of money for some of their boats. I understand that. They did the same thing in Alaska. But what happened, once the cleanup process stopped, and then they still couldn't fish, and they lost income, I would say, over 22 years. That is not the way I want to see this done.

Mr. MCKAY. We are sticking with this. If I could just say, the structure on the Oil Field Pollution Act is good. We plan on fully fulfilling those obligations, and that does not mean it stops at the end of the cleanup. And we have made it clear we are going to pay all legitimate claims due to the impact of this.

Mr. YOUNG. And I do compliment you on that, because that is the most important thing out of this, as it impacts the economy on the coastal States. That is the important factor.

Mr. Newman, we are really trying to find out, other Committees had other hearings, the MMS report said there was possible cement that has been found on a nearby vessel. What do they mean by that? Was that from an explosion? What happened?

Mr. NEWMAN. At the time of the event, Congressman, there was a vessel alongside the rig. They were conducting loading operations, transferring operations between the rig and the vessel, and the vessel reported receiving cement-like debris on their decks.

To me, that is an indication of the magnitude of the catastrophe that must have occurred within the well. For the well, the cement that is in the well to have thrust upwards from where it was installed, up through the wellbore, up to the rig, out from the rig and onto the deck of this vessel I think is an indication of the magnitude of this catastrophe.

Mr. YOUNG. That leads me up to the BOP. That would have probably caused, wouldn't it, the malfunction of the shutoff valve?

Mr. NEWMAN. If you have cement that has traveled all the way up the wellbore, all the way up to the rig, and all the way over to this supply vessel that was alongside the rig, it has traveled through the BOP for sure.

Mr. YOUNG. Now have you recovered the BOP?

Mr. NEWMAN. No, the BOP is still on the seabed.

Mr. YOUNG. Until we find that, we can't really tell what happened to that series of valves. There are seven rams, aren't there, in that unit?

Mr. NEWMAN. There are five ram-type preventers and two annular preventers, so a total of seven shutoff devices.

Mr. YOUNG. Seven total. So the debris could have made it malfunction.

Mr. NEWMAN. Yes, sir.

Mr. YOUNG. But until we find that, we wouldn't know that will for a fact?

Mr. NEWMAN. Until we recover the BOP and dismantle the BOP, we won't know what sort of debris is on the inside of the BOP.

Mr. YOUNG. It was made in Houston?

Mr. NEWMAN. The BOP was manufactured by Cameron.

Mr. YOUNG. It was tested?

Mr. NEWMAN. Fully tested, most recently on April 10th and April 17th.

Mr. YOUNG. The comments about batteries being dead and that type thing, has that been verified or is that just rumors?

Mr. NEWMAN. The BOP control system has two control pods mounted on the BOP, and these pods serve to transmit the electronic signals that come from the rig into actual action on the BOP. We recovered one of those pods, one of those control pods, and under the assistance of the original manufacturer and Transocean expertise and BP observers, we dismantled that pod and fully tested that pod.

There is a battery contained within that control pod. That battery was measured twice. The first time the battery was measured it registered a voltage of 18.41 volts against the manufacturer's minimum recommended voltage of 18. So on the first test it satisfied the manufacturer's minimum. On the second test, it registered 26 volts.

Mr. YOUNG. Now, if I can recap this, now the real damage was caused with the blowout, but then the collapse of the rig which caused the main pipe to be laying in a trench. Is that really the challenge here?

Mr. NEWMAN. Well, when the rig—following the explosion, the rig remained afloat for about 36 hours. It sunk on the morning of April 22nd at 10 a.m. The riser, which is the pipe that connects the BOP to the rig, the riser has remained largely intact and connected. It is obviously badly damaged, but it is laying on the seabed, and as Mr. McKay has indicated, that has presented some amount of challenge in terms of addressing the source.

Mr. YOUNG. What I am stressing, as we go through this engineering process, there has got to be another thing other than the blowout valve to make sure if there was another incident—by the way, does anybody know what the pressure of this field was? Was that tested? There had to be a tremendous amount of pressure to have a blowout. How do you test that?

Mr. OBERSTAR. At 5,000 feet it is 12,000 pounds of pressure, but at 13,000 feet below ocean floor, below the mud line, it has got to be in the hundred thousand pounds per square inch.

Mr. NEWMAN. I have done a preliminary calculation, recalling 20-year-old academics, and based on the mud weight that was used in drilling the well and calculating from the rig 18,000 feet down to the actual reservoir, the pressure I calculated was somewhere between 13,000 and 14,000 PSI at the reservoir.

Mr. YOUNG. That is a high pressure field and you know that when you put the mud and the cement in. Is there different pressured fields at that depth? You don't know?

Mr. NEWMAN. There are a wide spectrum of pressures resulting from overburdened and poor pressure and frack gradient. There are a number of factors that determine the pressure in a reservoir.

Mr. YOUNG. Mr. Chairman, we could go on all day on that. My goal in this hearing is to make sure that we not point fingers. We are going to drill. I know a solution to this, gentlemen, but most of you in this room had an opportunity once and voted against drilling on shore in ANWR. We are going to drill in the Gulf because there is 24 percent of our oil coming, or 25 percent from there, and we must make sure we now learn from that and have that equipment available in case this does unfortunately happen again.

Like you say, 42,000 wells are how many have been drilled, and this is the first major blowout we had. We had one in Mexico. And by the way, following on Mr. Mica's comment, I have had contact with the Chinese, because we have a huge dispute in Alaska about drilling offshore in Alaska, at 250 feet deep, by the way. There is a little ice involvement.

But China is already looking at the Pole. For those in the audience, there is probably more oil at the North Pole than there is anyplace else in the world. Just keep that in mind as Al Gore keeps talking about climate change. We don't know where it came from, but it is there.

If China drills off our shores and we have no equipment to recover, because they don't really have the interest in preventing that type of spill, we have to be prepared to also address that. And I think we ought to do that off the coast of Florida, have that equipment available for whoever is involved so we can address this thing so it does not happen again.

Thank you, Mr. Chairman.

Mr. OBERSTAR. I thank the gentleman.

Mr. DeFazio.

Mr. DEFAZIO. Thank you, Mr. Chairman.

Who is ultimately responsible for the proper functioning of the blowout preventer?

Mr. NEWMAN. Well, because that piece of equipment is owned by Transocean, we perform the maintenance on it and we perform the inspections on it, and we——

Mr. DEFAZIO. OK. So you are ultimately responsible. So it has to be fully functioning and capable. Was this capable of cutting the pipe at any point? There are numerous reports saying that probably 10 percent of the pipe being used at those depths where it is joined, that most blowout or many blowout preventers today cannot sever that pipe. Could this one sever the pipe at any point? Yes or no?

Mr. NEWMAN. Most——

Mr. DEFAZIO. Yes or no.

Mr. NEWMAN. Most shear rams are not designed to sever tool joints, which are the segments that join joints of pipe together.

Mr. DEFAZIO. So 10 percent of the pipe is composed of that. So doesn't that give us the possibility of failure, even if the ram works?

Mr. NEWMAN. It depends on what is across the ram.

Mr. DEFAZIO. Are there rams that can shear the more reinforced areas of pipe?

Mr. NEWMAN. Most shear rams are not designed to shear tool joints.

Mr. DEFAZIO. Are there some that can do that?

Mr. NEWMAN. I am not aware of any that are, but

Mr. DEFAZIO. So we are operating at these depths with these BOPs, and there is some 10 percent of the pipe that if it happens to be going, that is in the section of the blowout preventer, even if everything worked, which it didn't, you can't shear the pipe so you can't shut it off. So what good is the blowout preventer at that point? It is not going to work, right? And you are aware of that.

Now, BP of course is ultimately the responsible party here, is that correct? Even though they are working for you under Federal law you are ultimately the responsible party?

Mr. MCKAY. We are the leaseholder, and under that we are the responsible party, under the oil—for cleaning up.

Mr. DEFAZIO. So if we have rams that are not capable on 10 percent of the pipe of cutting the pipe, and there were other malfunctions that have been documented in other hearings, do you think you are fulfilling all the Federal standards and you are totally responsible by putting a blowout preventer down there which is not capable some certain percentage of the time of cutting the pipe?

Mr. MCKAY. If I can segregate two things.

Mr. DEFAZIO. Well, if you can answer, because I don't have much time.

Mr. MCKAY. We are a responsible party for the spill cleanup and all the damages. I think there is a question as to what happened that has caused the explosion.

Mr. DEFAZIO. I know. But if you are contracting with someone, you are contracting with a company based in the Marshall Islands so you can get a cheaper deal on your daily rate, now, the question to you is—OK, Transocean is responsible for the blowout preventer. But you contracted with them.

As you are aware, there was a report by one of your own engineers in 2007, he was a coauthor, saying the use of higher strength, higher toughness drill pipe has in some cases exceeded the capacity of some BOP shear rams to successfully and/or reliable shear drill pipe.

How can you be doing this? That means these things don't work. At least part of the time they are never going to work. Even if everything else goes well, it is not going to shut off the well.

Mr. MCKAY. Our job and what we do is we design the well as leaseholder. Transocean's job is to construct the well as operator of that drilling rig. We spec out the well with the casing design and the design of the well.

Mr. DEFAZIO. But ultimately you are responsible and the oil is coming up out of your lease. This is unknown to you that these things can't shear through this thicker section of pipe? You never heard of this before?

Mr. MCKAY. It is not unknown to me.

Mr. DEFAZIO. Doesn't that concern you? I mean, because then the thing can't work.

Mr. MCKAY. I will acknowledge I think all of this has to be looked at during the investigations, and I think we are going to learn——

Mr. DEFAZIO. Right. Because, I am concerned by your use of the word "legitimate." And I am worried about what happened with Exxon and what happened with the folks in Alaska, and you keep using the word "legitimate" claims. I am wondering, you know, you are not claiming the cap now, but you are sort of reserving the right maybe later?

Mr. MCKAY. No, I am not. I have been clear from day one with every Committee I have testified before.

Mr. DEFAZIO. OK. So you would then say that having a blowout preventer that is incapable at least part of the time of shutting off a well would mean it is either gross negligence or willful misconduct or you didn't meet the Federal safety construction or operating regulations. Do the Feds require these things work all the time, or do they say, oh, we don't care if it doesn't work part of the time?

Mr. MCKAY. I think the regulations stipulate what needs to be done.

Mr. DEFAZIO. And that should be capable of cutting the pipe at any point?

Mr. MCKAY. Well, I don't think that is the way it is stated, but I think that is what has got to be looked at. I do think there are going to be some changes made. Absolutely.

Mr. DEFAZIO. I know, But we have a big problem here.

One other quick question about the dispersants being used. You know, there are other dispersants, and your company said it was availability that led you to use this particular dispersant. There are others that EPA measures that are more effective on this grade of oil and less toxic.

Why aren't you using those? Because I am concerned about what is in the water column here and what we are not seeing.

Mr. MCKAY. We are using the preapproved dispersants. I believe there are——

Mr. DEFAZIO. Well, there are 13 preapproved dispersants. But there are some that are less toxic and more effective on this type of oil. It comes from a company in which you don't have anyone sitting on the board. The dispersant you are using is coming from the company where you do have someone sitting on the board.

Mr. MCKAY. I am not aware of whether there are products that are more effective or not.

Mr. DEFAZIO. The EPA has graded them, actually, as to type of oil, usage and toxicity.

Mr. MCKAY. Yes. We are following through Unified Command of what dispersants Unified Command believes would be the best dispersants to use. I know they are testing other dispersants with this oil, and if there are better ones to use, we will definitely use them.

Mr. DEFAZIO. Well, there is a list, you know, and there is something called Dispersit, which is theoretically half as toxic and considerably more effective on this sort of oil, this grade of oil, and I would urge you to look at that.

Mr. MCKAY. I definitely will.

Mr. DEFAZIO. Thank you.

Thank you, Mr. Chairman.

Mr. OBERSTAR. Mr. Coble.

Mr. COBLE. Thank you, Mr. Chairman. Thank you for having the hearing. Gentleman, good to have you all with us. I may be repeating some questions that may previously have been asked of you, so bear with me.

Obviously, gentleman, everyone is focused on the blowout preventer that failed on the Deepwater Horizon rig. Let me put a couple questions, and either of you may answer.

Who designed the structure, who built the structure, and was it built to spec?

Mr. NEWMAN. If you are referring specifically to the blowout preventer, it was designed and manufactured by Cameron, and it was built to Cameron, Transocean and API specifications.

Mr. COBLE. How about the rig itself, the deepwater rig?

Mr. NEWMAN. The Horizon, the rig itself was designed and built to Transocean's specifications and American Bureau of Shipping specifications.

Mr. COBLE. They built it, or designed it, or both?

Mr. NEWMAN. Well, I don't recall exactly who designed it. It was built in a shipyard in Korea.

Mr. COBLE. All right, thank you.

Gentleman, who is responsible for calculating how much oil is leaking?

Mr. MCKAY. Under Unified Command, there are government scientists with NOAA, BP scientists and engineers, and other industry experts that have been working on the calculations for the flow rates, and that has come out under Unified Command, under the Coast Guard.

Mr. COBLE. Thank you, sir.

Gentleman, are there other devices that are currently available or in use that would have performed a similar function to the blowout preventer?

Mr. NEWMAN. The blowout preventer's function is to seal the wellbore, and I am not aware of any other mechanism out there other than a blowout preventer for sealing the wellbore.

Mr. COBLE. I don't know of any other. I thought you all may be familiar with that.

Mr. McKay, you responded to the gentleman from West Virginia regarding legitimate claims that have been paid, and like the gentleman from Alaska, I commend you for that, for responding in kind to that. Are there legitimate claims that have not been paid, if any?

Mr. MCKAY. As of 2 days ago, I don't think any claims have been denied. I don't know in the last day or so. None have been denied.

Mr. COBLE. I thank both you gentlemen for being here.

Mr. Chairman, I yield back.

Mr. OBERSTAR. I thank the gentleman.

Mr. Nadler.

Mr. NADLER. Thank you.

Mr. McKay, a moment ago in answer to Mr. DeFazio's question, you misled this Committee. You misled it in the following respect. But let met ask you a specific question. Mr. DeFazio asked you about use of dispersants. You are using Corexit. Corexit is 2.61 in toxicity, which means it is highly toxic. It has an effectiveness of 54.7 in the south Louisiana crude oil spill. Dispersit is 7.9 in toxicity, which means it is a lot less toxic, but has an effectiveness rate of 100 percent.

Mare Clean 200, its toxicity rate is 42, which is much, much better. Its effectiveness rate is 84, compared to Corexit at 54.

Now, remember, you are under oath. Who decided—and don't tell me the National Incident Command. They authorized the use, as I understand, of any dispersants on this list. Who decided which dispersant to use? BP?

Mr. MCKAY. I don't know——

Mr. NADLER. You don't know.

Mr. MCKAY. I don't know the individual who decided which——

Mr. NADLER. I didn't ask the individual. Was it BP who decided or was it the government who decided or the National Incident Command?

Mr. MCKAY. I don't know.

Mr. NADLER. You don't know. Could you find out for us, please?

Mr. MCKAY. Yes.

Mr. NADLER. Now if I told you that it was BP who decided, why would you use something that was much more toxic and much less effective other than the fact that you have a corporate relationship with the manufacturer? Is there any other reason you can think of?

Mr. MCKAY. I don't understand the supply chain and how much supply is available in either of those.

Mr. NADLER. Is there any reason you would use something that is much more toxic and much less effective in cleaning up the spill?

Mr. MCKAY. We are using quite a bit of it, so I don't have any idea what the supply chain is for those other dispersants.

Mr. NADLER. Are you asserting perhaps that the other dispersants are unavailable?

Mr. MCKAY. No.

Mr. NADLER. According to this, this is the second worst dispersant on the list.

Mr. MCKAY. I am not asserting anything. I am just telling you what I know.

Mr. NADLER. Would you please get back to the Committee with the following information:

One, who decided to use this? I am told it was BP, not the National Incident Command. You shouldn't lay it off on them.

Two, why was it decided?

Three, if you disagree with the assertion that it is much more toxic and much less effective, let us know and find out why the reason this is being used and whether it should be changed now.

Mr. MCKAY. OK.

Mr. NADLER. Thank you.

Secondly, Mr. Newman, the Chairman in his opening statement pointed out that Deepwater Horizon is flagged under a foreign flag; namely, I think he said the Republic of the Marshall Islands, and when the Coast Guard inspects an MODU under the Marshall Islands it takes about 4 to 8 hours, and when it goes under USA regulations it takes 2 to 3 weeks.

How many MODUs does Transocean have in operation in the U.S. Or in U.S. Waters?

Mr. NEWMAN. I believe there are 15, Congressman.

Mr. NADLER. Fifteen. How many of these are flagged in the U.S. and how many are flagged in foreign countries?

Mr. NEWMAN. I am not aware of the flag status of every one of those vessels.

Mr. NADLER. Roughly.

Mr. NEWMAN. I believe they are foreign flagged.

Mr. NADLER. Most or all of them are foreign flagged?

Mr. NEWMAN. I believe that is correct, Congressman.

Mr. NADLER. Aside from the fact that by foreign flagging them you get much more lenient and presumably therefore much more dangerous to the end user—end safety regulations, you don't have to comply with U.S. safety regulations, are there other advantages or other reasons why you might foreign flag them?

Mr. NEWMAN. If I could, Congressman——

Mr. NADLER. Just answer the question, please. I have a few more.

Mr. NEWMAN. The vessels that are operating in the U.S. Gulf of Mexico are subject to three sets of regulatory regimes: The class society, the flag state, and the coastal state. And the coastal state in the Federal waters of the U.S. Gulf of Mexico is the Coast Guard.

Mr. NADLER. And yet the Coast Guard witnesses before the Marine Board of Investigation of the Deepwater Horizon accident have testified that a U.S. Coast Guard inspection of a U.S. Flagged mobile offshore drilling unit takes 2 to 3 weeks, while the safety examination of a foreign flagged MODU such as the Deepwater Horizon takes 48 hours. In other words, it is much less thorough.

Mr. NEWMAN. If the Coast Guard is conducting both the flag state inspection and the coastal state inspection, they will obviously spend more time on the vessel. If they are only conducting the coastal state——

Mr. NADLER. Which is another way of saying they are being more thorough on the vessel.

Mr. NEWMAN. If they are only conducting the coastal state inspection.

Mr. NADLER. Yes, which is another way of saying they are being more thorough if they are doing both than if they are doing only the one, correct?

Mr. NEWMAN. I wouldn't agree with that assumption, Congressman, because I think part of the inspection when they are performing the coastal state inspection is to review the performance of the flag state inspection and the classification society inspection. So they are relying on the thoroughness of those other parties.

Mr. NADLER. Let me ask you, Mr. McKay, one question. I understand and I appreciate the fact that you have said are going to ignore the $75 million liability limit and that you are going to pay all the damage for people who can show they are really damaged, and I appreciate that.

Can you give one good reason why we should have any liability limit at all, why we shouldn't simply repeal it? Now, I understand one obvious reason would be to say, well, if we didn't have a liability limit, there would be fewer companies that want to drill, and maybe that should be. Then one would say, well, why not get insurance for that? And one might say well, insurance would be too expensive. And if that were the answer, one might say well, isn't the market telling you in that case that you shouldn't be doing it there or in that way.

Can you comment on all this?

Mr. MCKAY. We have not—I have not and we have not addressed any sort of policy issues around liability limits. We know in this particular case, we have accepted that we are a responsible party. We are going to fulfill our obligations to that. We have been very clear we are not going to——

Mr. NADLER. So you wouldn't oppose a legislative move to remove or greatly raise liability limits?

Mr. MCKAY. I am sorry, I didn't hear you.

Mr. NADLER. You wouldn't object to or oppose a congressional move to either remove or greatly raise by orders of magnitude liability limits?

Mr. MCKAY. I don't think I can commit to what we would do. We are focused on this issue right now.

Mr. NADLER. Thank you very much. My time has expired.

Mr. OBERSTAR. I thank the gentleman.

Mr. Duncan.

Mr. DUNCAN. Well, thank you, Mr. Chairman, and thank you for the fair and even-handed way you are conducting this hearing today.

Let me say, first of all, that this has certainly been a terrible tragedy, most especially for those who have lost family members, also a terrible tragedy for our environment and our economy, and I share the desire of everyone on both sides of the aisle on this Committee that we do everything possible to try to determine the cause and see that it won't happen again.

I do want to say though that sometimes in very highly publicized situations, and this certainly has been one of the most highly publicized ever, that there is a tendency on the part of the Congress and the agencies to sometimes overreact, and I hope we don't do that, because if we do that, we could end up hurting millions of poor and lower income and working people in this country, and we don't want to do that. We don't want to drive gas prices to $6 or $8 a gallon or put energy costs beyond the means of ordinary citizens.

Just yesterday in the Washington Times, Jeffrey Birnbaum, one of their columnists, wrote this: He said, "On one hand, pulling back and rethinking offshore oil drilling makes perfect sense. Certainly stricter safeguards will need to be applied. But just saying no is exactly the wrong answer. People don't stop flying after an airplane crash. The U.S. should not withdraw from oil production offshore because of one major leak." I share that opinion of Mr. Birnbaum.

Also I have a concern as expressed by Secretary Salazar before a Senate Committee yesterday that raising the liability cap to some extremely exorbitant level would hurt the small companies a lot more than the BPs or the big companies. So I hope that when we arrive at legislative solutions for the problems that we are confronted with in this situation, that possibly we consider having higher caps for some of the bigger companies and lower caps for some of the smaller companies.

But I also want to see BP and Transocean and other companies involved recover from this incident, because Mr. McKay mentioned that his company has 23,000 employees in this country, and certainly I don't want them to be harmed by this or the thousands of stockholders that these companies have.

I know Transocean has 18,000 employees, that is what I was told, and I don't know how many of—how many of those are in this country, Mr. Newman?

Mr. NEWMAN. I believe it is about 2,500.

Mr. DUNCAN. 2,500. Well, let me just ask one question. The last major oil rig spill in this country was in Santa Barbara or off the coast of Santa Barbara 41 years ago. How many oil rigs are there—I really don't know this. How many offshore oil rigs are operating off the coast of the United States at this time? Anybody have a rough guess?

Mr. MCKAY. I know there have been about almost 43,000 wells drilled, and there have been 7,000 production platforms of some sort or another in the last 50 years.

Mr. DUNCAN. 42,000 oil wells and 7,000 production platforms.

Mr. OBERSTAR. Would the gentleman yield?

Mr. DUNCAN. Yes.

Mr. OBERSTAR. At the command center briefing that we had with our Canada-U.S. Parliamentary Group 2 weeks ago, the number 3,800 drill rigs in the Gulf of Mexico was given.

Mr. DUNCAN. OK. Well, I guess the point is that this is almost always a very safe and environmentally safe way to produce oil, by the percentages.

I will also say this. I know that a lot of people in the country want to punish BP and the other companies involved now, but I am very impressed by the fact, if I heard right, Mr. McKay, that you said a while ago that you have already paid 19,000 claims. I mean, that is just unheard of, and I commend you for that. I can tell you, I have no connection whatsoever to BP or any other oil company at all.

With that, Mr. Chairman, I will yield back the balance of my time.

Mr. OBERSTAR. I thank the gentleman for those comments.

Ms. Brown.

Ms. BROWN OF FLORIDA. Thank you, Mr. Chairman, for holding this hearing. Let me just say I have been in Congress for 18 years and nothing has happened that has devastated my State of Florida like this spill. We certainly have a diverse opinion on this Committee, because I have heard people on this Committee say "drill, baby, drill." Well, that is not my opinion. And if you are going to drill, you need to have the safeguards in place. Florida has been devastated by this, and I want to put the statement from the U.S. Travel Association into the record.

But let me just say also that in Florida, our tourism generates $65 billion and we have over 1 million people working in this industry. So we are devastated. People are canceling. They are not coming to the hotels, they are canceling, not coming to Florida thinking that the fish are not safe. So we are in lockdown devastation.

I have a couple of questions.

In addition to that, let's point out that in 2006 we passed legislation saying that you could not drill off of Florida coasts because of the maneuvers, the military maneuvers. There are 435 Members of Congress and it takes 218 to pass anything. So keep in mind it is not going to be automatic drilling off of the Florida coasts.

But I have a couple of questions for you. I am not an engineer, but, sir, Mr. Newman, I understand that the Norwegians or other countries have a device that costs about $500,000 that would have prevented this. Can you give us some insight into that?

Mr. NEWMAN. Yes, Congresswoman. I believe you are referring to an acoustic control system. It is required in two regulatory regimes. It is required in Norway and Canada. Those are the only two areas of the world where it is required.

Ms. Brown of Florida. Does it work?

Mr. NEWMAN. Well, it is another means of activating the BOP.

If you will allow me, I will talk about the means of activating the BOP that existed on the Deepwater Horizon. On the Horizon, there were three manual panels, manual activation panels on the rig. The regulations required two, so the fact we had three is in excess of those regulations.

In addition to manual intervention, the Deepwater Horizon BOP was fitted with two automatic response systems, one of which the industry refers to as a "deadman" and the other one the industry refers to as an "auto shear." In addition to that, there was an ROV intervention panel. So manual intervention, auto shear, deadman, ROV intervention. The acoustic control would have been a fifth in addition to the four that already existed.

Because we have had an opportunity to manually intervene on that BOP with the remote-operated vehicle since the time of the event and actuation of the BOP has been unsuccessful in stopping the flow of hydrocarbons, I do not believe that another means of activating the BOP would have made a difference in this case.

Ms. BROWN OF FLORIDA. So you are saying this procedure is not safe then?

Mr. NEWMAN. Which procedure?

Ms. BROWN OF FLORIDA. The drilling at this depth.

Mr. NEWMAN. I'm not sure I can make that statement until we know exactly what happened. We know that there was a catastrophic failure.

Ms. BROWN OF FLORIDA. Mr. McKay, Florida requested $35 million for assistance. I think you approved 25. What was the factors that went in? I think the Governor requested 35. What went in the decision to decide on the $25 million?

Mr. MCKAY. I'm not sure on the difference between 25 and 35. I wasn't——

Ms. BROWN OF FLORIDA. Ten. Ten.

Mr. MCKAY. Yes. Yes. I'm not sure what went into the rationale between 25 and 35 as I was not directly involved in that decision. But I can get back to the Committee.

Ms. BROWN OF FLORIDA. Yes, sir. That would be great.

We are having a hearing tomorrow in my Committee, pipelines and hazardous material. And one of the things—you all was fined May 5th by the State of Washington for, let's see, 13 serious violations in this area.

I am just wondering about the culture. You indicated that you thought you all had put certain safeguards and culture in place. But if you are constantly being fined by the State for not following your procedure, what is it we in Congress can do to ensure—because it seems as if I am hearing from both sides of the aisle, maybe some undercurrent, but we need more regulations or more safeguards or, you know, trust but verify.

And I am certainly very supportive of having the Coast Guard there when you all do the testing and maneuvers. And, of course, I don't think the taxpayers should foot the bill.

Respond.

Mr. MCKAY. Could you repeat the question?

Ms. BROWN OF FLORIDA. You all was fined on May 5th by the State of Washington for 13 serious violations.

Mr. MCKAY. I believe you are referring to the Cherry Point refinery.

If I could just recap, this company is dedicated to making the safety culture at every single level as good as it can possibly be. As I said, we have put a lot of procedures in place and a lot of organizational capability to do that. We have made a lot of progress. I will be the first to admit the journey is never finished, and we must get better.

As far as this incident goes, we desperately need to understand what happened. And it wasn't—you know, it's the period of time where signals were there. What happened on the rig? What happened with the equipment? That needs to be understood so this industry, this company, and certainly the regulatory regime can move forward to develop the resources in a safer way.

Ms. BROWN OF FLORIDA. All right.

Mr. Chairman, I yield back the balance of my time.

Mr. OBERSTAR. I thank the gentlewoman.

And I now recognize Mrs. Miller of Michigan.

Mrs. MILLER OF MICHIGAN. Thank you very much, Mr. Chairman.

As the Chairman mentioned, he and I had an opportunity about a week ago to be down in the gulf and go out with the Coast Guard and take an aerial view of the spill. And we've all seen it on TV, and we've seen it in the newspaper pictures. But, certainly, from my perspective, when you're flying out there, a little bit offshore, you start to at that point to see the oil sheen and the spill and the various colors of the rainbow that it was taking on—orange and purple and pinks and various things. It really is unimaginable, I think, to see it as it is emulsifying, as it is solidifying with the dispersants and various things that are happening to the oil.

And I guess I would just—my personal feeling, I felt physically ill looking at it, thinking about what was happening underneath the ocean and what was going to happen as this thing—almost like a doom, like a death is floating toward the gulf shores and possibly now getting in the loop of the gulf stream, et cetera.

And just one thing before I ask a question. I would just make a general observation. We had a lot of people commenting about the energy needs of the country, and there's no doubt we have a tremendous amount of energy needs, and we are going to continue to consume energy, and we should.

But, you know, coming from Michigan, where we are about to unveil the Chevy Volt, which is an electric vehicle, and we are trying to get off of some of the reliance that we have on fossil fuels, I would just say that I would hope that this Congress and as a Federal policy takes a much better look at nuclear. We have got to get off of this oil, at some point.

The cap-and-trade, unfortunately, didn't even address, really, nuclear energy. We are not going to build enough windmills. We don't even have the transmission grid to have enough electricity right now to power all of the these electric vehicles that we are putting on. So I would just say, I hope that we think about—we aren't going to stop having energy consumption. We need alternative types of energy.

And in regards to the spill and the Committee hearing here today, I would say, gentlemen, unfortunately I just cannot believe your testimony about how you are preparing and testing at that depth. And I think it was Mr. Newman who made a comment saying you were going to re-evaluate the response capability in the future. And I would say that is probably the understatement of the year, sir.

The briefing that we had from Commander Mary Landry of the Coast Guard—and, by the way, the Coast Guard is doing an unbelievable job—when we saw the sombrero, as you were calling it, they were calling it, the dome coming down, suspended on 5,000 feet of steel cable, buffeted by all of the various ocean currents that are happening, and then you are trying to get the dome on to the pipe there, the riser pipe, which, as you mentioned, has been badly damaged, did sort of look like one of those video games where, you know, you put a quarter in and you're trying to get the—I know it sounds ridiculous, but that's what it looked like.

And the thing is, it was mentioned at that time that the dome was technology that has been used and has been proven to work in the past at 300 feet of depth, not at 5,000 feet of depth where you do have 2,300 pounds per square inch of pressure. It has never been, apparently, we were told, never been tried there. Keep in mind, that is at least 3,500 feet deeper than our nuclear submarines can even go.

And then, as has been said here, I think Mr. McKay mentioned that you have another proven technique, injecting mud and concrete into this well. But you said it's never been used at 5,000 feet. I don't know at what depth you use it.

Do you have laboratories where you simulate that type of depth—we have all of these oil rigs out there—at that type of depth? And the kinds of technologies that you have have never been tried there. It suspends belief, to me, to think that we are not simulating these techniques and to be prepared for what might happen in the future.

And my last thing—I'm almost running out of time here. My other question is: You had the best chemists in the world that had to come—the guy from Brazil, everybody you were bringing from all over—to develop a chemical composition of antifreeze for the dome where the ice crystals formed, floated the thing up, which was unexpected.

Again, have you had any success now so the next time, God forbid, if this ever happens again, do you simulate that in a lab? Are you prepared for this to happen again?

Mr. MCKAY. There is a tremendous amount of simulation that goes on for the kill operations and the top-hat or the cofferdam that we put down there. We knew hydrates would be a problem. At that temperature and depth, hydrates are a massive problem. This is a specific fluid, so you can't predict the fluid beforehand.

All I can say is, this is unique and unprecedented. It has not been experienced in action ever. We can model these things, but it's at a very, very difficult depth where humans cannot touch. So, like I mentioned earlier, I do think we will learn a lot from this, and I do think it will have to be incorporated into industry and subsea capability. I do believe that, yes.

Mrs. MILLER OF MICHIGAN. Thank you very much.

Mr. OBERSTAR. We have a vote in progress, but there will be time to continue the questioning.

Now, Mr. Cummings.

Mr. CUMMINGS. Thank you very much, Mr. Chairman.

To both of you gentlemen, Transocean owns and operates the Deepwater Horizon. It is also true that BP is Transocean's customer, to the tune of approximately $500,000 per day. Ultimately, it is BP who is seeking to achieve a profitable drilling operation through the use of the Deepwater Horizon. But we also know that complex deepwater drilling operations require multiple specialized parties to achieve success.

On the night of April 20th, when the accident involving the Deepwater Horizon occurred, efforts were under way that involved personnel from BP, Transocean, and Halliburton to cap the well that Deepwater Horizon was drilling.

I want to know, who was ultimately in control of the drilling operation at that time? And, specifically, if there had been a conflict among the views of Halliburton, Transocean, and BP, how would that have been resolved?

Mr. NEWMAN. Because it is BP's well, BP's well design, it is ultimately BP who determines whether or not that well is being constructed to their specifications.

Mr. CUMMINGS. Uh-huh. And if there was a conflict on that day—you didn't answer that piece—who makes that decision? Is it BP?

Mr. NEWMAN. Congressman, it depends upon the nature of the conflict. If it is a conflict related to the design of the well, because it's BP's design, BP are going to make the ultimate determination about that design. If it is a conflict with respect to safety——

Mr. CUMMINGS. Safety.

Mr. NEWMAN. If it is a conflict with respect to safety, people that work for Transocean know and firmly understand that they are obligated to stop any unsafe operation.

Mr. CUMMINGS. Now, do you agree with that, Mr. McKay?

Mr. MCKAY. We—Transocean—there's normally about 120 people on the rig. We have two to three people, normally. We are effectively designing the well and trying to make sure the execution steps are done. Transocean operates that rig. We have nobody qualified to operate or do anything on that rig without Transocean doing it.

Mr. CUMMINGS. So would it be fair to guess that—can you tell me, were there any disagreements between those parties, the drilling managers, in the days or hours before the blow-out? And, if so, what disagreements might there have been? Do you know of any, and would you know that information?

Mr. MCKAY. I don't know that information. The investigation is going to get to that. I heard about some conversations on "60 Minutes" and other places. But we've got an investigation under way; the government does, too. I think the decisions and the conversations and the data, the digital data and the physical data that was occurring before the well explosion is critical to understand what happened.

Mr. CUMMINGS. Very well.

You know, when I visited down at Port Fourchon and had an opportunity to talk to a number of people involved in this process, one of the things that they said—and these were basically people who worked with the industry on ships and bring out the supplies and everything to the platforms.

One of the things that they said is that the industry—that there were, more than likely, mistakes made. Some of them may have been human error. But one of the things that they said is that they want to make sure that there are plans in place and equipment in place so that, if anything like this ever happens again, we would be able to effectively and efficiently deal with it.

And, as I'm listening to you all, it sounds like—and correct me if I'm wrong—you all don't have a lot of confidence that we can do that. In other words, have we created a monster that we cannot control? Do you follow me?

Mr. MCKAY. Can I just comment?

The sub-sea response, I think, is what everyone is concerned with. We have three rigs working simultaneously, and we are trying to stop the source at the blow-out preventer, then trying to kill the well, and all the while trying to contain it with sub-sea containment.

I do think the industry, as we look back on this, will understand what sort of generic capability may be needed to be on standby. There may be protocols for industry to immediately be able to help and organize for that help. There are a lot of things I think we are going to learn out of this, redundancies and other things that I think will put us on a path to make this safer. I really do.

Mr. CUMMINGS. Very well.

I'm sure you heard my comments about the Coast Guard and wanting the Coast Guard to be much more involved early on so that—I think they can have a tremendous impact and probably would be very helpful. Do you have an opinion on that?

Mr. MCKAY. Well, I think we are very fortunate with the leadership of the Coast Guard and their ability to react and deal with things. I think more understanding on the front end would probably be a good thing.

Mr. CUMMINGS. All right. Thank you very much.

Mr. OBERSTAR. Mr. Buchanan?

Mr. BUCHANAN. Thank you, Mr. Chairman.

I want to echo something my colleague said, Congresswoman Brown. I was the past chairman of the Florida Chamber. We have $65 billion—I think that is the number she used, so I'll go with that—in tourism. The impact—I can just tell you, I'm from Sarasota, I represent the southwest part of Florida—is gigantic. People down there, just because it's so much on the media, they hear about a tar ball down the Keys. Probably isn't related to this, but it becomes a big story. We're coming into our tourism season. People are telling me they're getting cancellations.

I mean, this is so gigantic, the impact it has on the whole region. And every State is impacted a little bit differently. But we've just got to take into mind it's not only one of the largest ecological disasters in our history, but when you look at the impact it's going to have economically to a State like Florida, where we have 12 percent unemployment, we count on tourism, it is gigantic.

The second thing, I've been, you know, one of the Republicans—because I represent a coast, I'm against drilling off our beaches and stuff. Some people want it as close as 3 miles, so it hasn't been a popular thing for me, but I've taken a strong position. And, as a result of that, I've had many, many experts in the industry come to me and say what has happened here at this deepwater drilling could not happen. We have the deepwater technology, we have the preventers, we have all these kinds of things. And I said, "Are you saying 100 percent it can't happen?" "Absolutely, 100 percent."

And I've always been—I always thought there could be a possibility, because I was concerned about hurricanes, and when Charlie came in, it went from a two to four and went right in my congressional district, just south of me.

So I guess the question I'd have for both of you, quickly—and I've got a couple of other questions—is: What is the percentage of something like this happening? I have been told this couldn't happen, what's happening now, that you've got 28 shutdowns and all that. I'm exaggerating that. But it just couldn't happen. If you had a hurricane—I was worried about hurricanes blowing a platform away.

Could you give me a brief comment on that?

Mr. MCKAY. Very briefly, I think it's unique and unprecedented. There's been 42,000 wells drilled; it hasn't happened like this. And hurricanes have come through the gulf many times, and the safety systems have worked.

Mr. BUCHANAN. OK, but—I was thinking about hurricanes was one of them, but the other thing, I never even imagined this, the implosion, that we couldn't shut something off. I'm talking about something like this happening again. I mean, what is the possibility of that?

I was led to believe by a lot of experts in the industry that this couldn't happen. I wasn't even thinking about this as a possibility. But, just in general, anything happening.

Mr. MCKAY. I don't think anyone could give a guarantee that anything couldn't happen. I think the really important thing is to learn everything we can from this to lower that risk going forward. And I do think I'm confident the investigations will help us do that.

Mr. BUCHANAN. OK.

Let me ask you, Mr. McKay, the other thing. One of the things you said earlier in your opening statement is that we've got a new culture, a new environment, I think you said the CEO said, about safety and compliance.

However, The Washington Post reported a story that they gave special exemptions to you as it related to this—a waiver for environmental studies and review.

Why do you say on one side that you're all into compliance, but yet you're looking for an exemption to get around some of the environmental requirements for drilling and the impacts of that?

Mr. MCKAY. I think what you're referring to is what's called a categorical exclusion, and exploration activity in the gulf is categorically excluded by government process and industry practice.

There are environmental studies that are done for the lease, sale, and environmental impact statement, which is very extensive. Then there are more specific environmental assessments done, called grid assessments, that are done for the actual lease and lease area. And then we file an environmental plan.

The categorical exclusion then utilizes the pre-existing government studies that have been done.

Mr. BUCHANAN. You've got multiple rigs in the Gulf of Mexico now. What are you doing to make sure that they are completely safe? Have you done anything additionally since this has happened?

Mr. MCKAY. We have done some additional work, but they're all working on this situation. We don't have any other wells drilling in the gulf right now. But what we have done is test the BOPs in a different way, inspect them in a different way. And there are several things we are doing. But all of our activity is around this, all of it, right now.

Mr. BUCHANAN. I know you're paying a lot of claims as it relates to New Orleans and that. How do you look at things like loss of business in Florida, with hotels where they had reservations and they're getting cancelled because of the spill? How are you going to deal with that? Or are you dealing with that?

If you look at Pensacola—but, again, my area of Sarasota, I have someone that says, "I've got a bunch of places on the beach. I had reservations. Now they're cancelling them. They're from Virginia, and they want to go—they're going to go to northern Michigan or something." Are you going to deal with those folks, as well?

Mr. MCKAY. Yes, absolutely. Our claims process deals with that. And we're guided with the Coast Guard guidelines that are under the Oil Pollution Act, which have processes to deal with that. And we are definitely dealing with that.

Mr. BUCHANAN. OK. So those claims, if you're from Florida, Tampa Bay area or Sarasota, where would they——

Mr. MCKAY. We've got claims offices. I can get back to you on where they are. And the Internet line and the claims lines, yeah.

Mr. BUCHANAN. And I just wanted to ask Mr. Newman real quick just on the whole thing about the preventers, what is your sense of the probability of something like this happening? They say it can't happen. It has happened. You know, you've been in the business for a long time. I mean, what—one out of 10,000? 100,000? I mean, I was under the impression this could never happen.

Mr. NEWMAN. I think the fundamental question, Congressman, is what's on the inside of the BOP. You know, BOPs, under their design constraints, function extremely well. But if you've got the wrong stuff inside the BOP like cement or casing or other debris similar to what we've seen, you know, fly out of the well and land on the deck of the supply vessel, if you've got that kind of stuff inside the BOP, the BOP is not going to work.

Mr. BUCHANAN. I yield back, Mr. Chairman.

Mr. OBERSTAR. Well, that last exchange raises further questions about who is in charge and who is holding the responsibility. And I think the gentleman's line of questioning was very important.

We have Mr. Capuano, Mr. Cao, Mr. Hare, Mr. Teague, and Mr. Johnson. We will come back to those Members after these four votes, which will probably take about 20, 25 minutes.

The Committee will stand in recess.

[Recess.]

Mr. OBERSTAR. The Committee will resume its sitting, with apologies to all for the interruption with the votes.

Our next Member in line for questioning is Mr. Capuano of Massachusetts.

Mr. CAPUANO. Thank you, Mr. Chairman.

Mr. McKay, does BP do drilling in the North Sea?

Mr. MCKAY. Yes.

Mr. CAPUANO. Do you do drilling in Canadian waters?

Mr. MCKAY. We have leases in Canadian waters.

Mr. CAPUANO. OK.

And, Mr. Newman, do you do work in the North Sea?

Mr. NEWMAN. Yes, sir, we do.

Mr. CAPUANO. And the Canadian waters?

Mr. NEWMAN. Yes, Congressman, we have——

Mr. CAPUANO. So you have both chosen to do work in the two countries that, earlier, you identified as having more strict requirements than the United States. So, therefore, you can, obviously, make a profit. I'm sure you are making a profit in both those two countries, and God bless you for making that profit.

But, basically, what you just told me—did I hear it wrong? That you can do good business in places that have higher requirements, more strict requirements, to safeguard our environment. Is that a fair conclusion of the answers you just gave me?

Mr. NEWMAN. Transocean works in 30 countries around the world, and the regulatory regimes in those 30 countries span the spectrum. And the United States and——

Mr. CAPUANO. But you just, earlier, in response to Ms. Brown's question, said that both Canada and Norway have higher requirements, more stringent requirements on safety issues than the United States does. Whether they would or would not have worked, you had some speculation, which I respect.

But the question I basically have is, why shouldn't we hold you to the highest international standards there are in any country in this world in which you are doing business? Is there any reason we should not?

I didn't think so. But thank you.

I guess my other question is that—I guess, Mr. McKay, I get quoted in the paper all the time. Sometimes they're right, sometimes they're wrong. So my first question is, is it an appropriate quotation from Mr. Hayward, who I understand is the CEO, is it an appropriate quotation, is this correct, that he said that the spill in the Gulf of Mexico was "relatively tiny compared to a very big ocean"? Do you know if that is an accurate quotation?

Mr. MCKAY. I've seen that reported. I can just give you my perspective that any oil in the Gulf of Mexico is a very serious thing.

Mr. CAPUANO. Oh, I think that's appropriate.

On the presumption that it's accurate—which, you know, there are times when it's not—I really hope that you express to Mr. Hayward our displeasure with that approach or attitude—not so much the comments; I appreciate the honesty of them if they're honest. If they're not honest, if they're flip, then I would suggest that maybe he takes it a little more seriously. Maybe if the spill was in the North Sea closer to where he lives, there might be some other issues, but maybe not.

But either way, if that's an accurate statement, I will tell you that it's not going to win friends and influence people around here. And maybe Mr. Hayward should take that into account.

Am I also correct in understanding that BP's profits in the first quarter of this year were in the neighborhood of $6 billion?

Mr. MCKAY. I believe that's right, worldwide, yes.

Mr. CAPUANO. I appreciate that. And I would hope that it's your intention, I assume it's your intention, then, to use that entire profit before you come looking for any sort of reimbursement on anything related to this spill from the United States Government. Is that a fair assumption?

Mr. MCKAY. We've been very clear that we're not coming to the U.S. Government for reimbursement. We've said we're going to live up to our responsibility——

Mr. CAPUANO. I understand that, but there's been no figures on it and everything we're responsible for. Just in this hearing alone, I've seen the two of you do this at least two times to different questions from Mr. Cummings and Mr. DeFazio. And I appreciate that. I'm a lawyer. This is going to be the lawyers full employment spill, as far as I'm concerned; I get that. But I'm really more interested in not so much—I understand there's going to be this, I get it—but I'm really interested in what you are willing to do.

And if you use the entire $6 billion—if you want to chase Mr. Newman or anybody else for it, fine, that's OK. But if you've got $6 billion in profits, you can't really honestly think that this government is going to pay for your responsibilities when you're walking away with a profit.

So you should be able to have a spill, fight it out in court—fine—and walk away with a profit as well? You think that's a fair thing for me to ask my taxpayers to do?

Mr. MCKAY. I don't believe I'm saying that at all. I haven't given any—I hope I've given no indication that we want the U.S. Government to reimburse us for this.

Mr. CAPUANO. Not reimburse you, but to pay for the fishermen who are going to lose their livelihoods——

Mr. MCKAY. No. Sorry. I've been clear, we are going to make good those claims. We've been very clear since the outset.

Mr. CAPUANO. Excellent. So this is good news. So I can go home and tell my taxpayers that they will not be on the hook for any aspect of this spill, any costs related to this spill?

Mr. MCKAY. All costs related to the spill we will bear.

Mr. CAPUANO. I love that. And I hope you make a big profit.

I will tell you, though—I would like to just ask in my last few seconds: Have either one of you used the phrase that I've heard so often, "Drill, baby, drill"? Did you ever use the phrase?

Mr. NEWMAN. No, sir. I've not been part of that particular movement.

Mr. CAPUANO. I appreciate that. I would suggest that—I would love people who used it to now come to this microphone and tell me how they feel today. And not that I'm against—I actually think that Mr. Duncan's earlier commentary about the fact that the United States should not walk away from drilling—it is a necessary part of life today. But those who are so flip and so quick to say, "Drill, baby, drill" and have parties celebrating the concept—I would suggest that the Bush-Cheney days are over. This country is no longer run by people with that attitude. And I don't think the American taxpayers are going to stand for it.

And if you have never used the phrase, I appreciate that. But I still think that the attitude inside—we're not against providing the energy we need. We are for doing it in a thoughtful, safe manner, held to the highest standards possible, especially if there are other countries doing it and especially if you're doing business in those countries. There is no reason in the world we shouldn't be held to it.

And I look forward to you filling the requirements, Mr. McKay. And I understand full well that there will be lawsuits between everybody. So be it. But, either way, I do look forward to us not having to be asked by anybody to come up with a nickel to deal with the costs associated with this spill. And I appreciate your commitment to that.

Thank you.

Mr. OBERSTAR. I thank the gentleman.

Mr. Cao, who represents——

Mr. CAO. Thank you very much, Mr. Chairman.

Mr. OBERSTAR. —New Orleans, a major portion of New Orleans, who is in the direct path of the environmental consequences, and who was there to greet us 2 weeks ago when our delegation of Members for the Canada-U.S. Inter-Parliamentary Group arrived for an overflight, and who has been immersed in the issues of the spill and its consequences and very rigorously defending his constituents.

I thank the gentleman for his constancy.

Mr. CAO. Thank you very much, Mr. Chairman.

And we have a limited time, so, if I could, I would like you all to answer the questions very briefly, if you don't mind.

First of all, I was not here, and I was just wondering whether or not anyone asked for—what do you mean by the term "legitimate"? Can you explain to me what do you mean by the term "legitimate" claims? How do you decided whether a claim is legitimate or not?

Mr. MCKAY. Yes. We use the Oil Pollution Act as a guide and the Coast Guard guidelines that are within that for "legitimate." And they cover things like property damage, personal injury, cleanup costs, things like that. So there are guidelines in the Oil Pollution Act.

Mr. CAO. How does this act affect, for example, fishermen who are trying to file a claim, small businesses trying to file a claim? I know that some of the documents that you asked for—for example, tax returns. A lot of these fishermen, they might not file tax returns. So how can they file a legitimate claim when they cannot submit some of the documents that you request?

Mr. MCKAY. They would just need some substantiation. Generally, it starts with income, tax returns, but it could be receipts that can be provided from past catches and things like that. Some substantiation of some sort.

Mr. CAO. In the last couple of days, I've met with a number of your employees, including Mr.—I'm sorry, I forgot—the vice president of BP. I conveyed to him some of my concerns in the implementation of the Vessels of Opportunity Program as well as some of the training programs, benefit programs, how they are being implemented in the minority communities. Because there are problems of language, problems concerning accessibility.

I wonder whether or not some of those concerns are being addressed right now.

Mr. MCKAY. I don't know those exact concerns, but I'll be glad to go back and check and get back to you as quickly as possible.

Mr. CAO. What kind of plans do you have in the long term to address the issue of economic development, to address the issue of the seafood and fishing industry for the States along the gulf coast?

Mr. MCKAY. There are several studies. One major one is a natural resource damage assessment study that's going on now, with the Federal lead trustee as NOAA. They're doing that study, which is baselining things and then will evaluate the damage to natural resources, the damage to fisheries, the damage to any natural resources, their restoration, and their compensation based on that.

Mr. CAO. But, obviously, that deals more with tangible data. How do you address in the long term the issue of the psychological impact on the area, the fact that people might not be eating seafood from the gulf coast because they fear that they're contaminated? How do you bring back tourism to Florida, to Alabama, to Louisiana? Do you have a long-term plan to address those issues?

Mr. MCKAY. We are working with the States. In terms of tourism, as an example, we have given—this was announced a couple days ago—about $70 million across the gulf coast to do advertising and help to get the messages out that the States want to get out as regards tourism.

As regards your other question on longer-term effects, I don't have a specific answer for that, but I do want to let you know that our intent is to stand behind what we're saying, and it doesn't end when the cleanup ends.

Mr. CAO. Yesterday, in my conversation with your members, they informed me that 16,000 boats have been approved, yet, as of now, only 680 are active, meaning selected to work. Can you explain to me, what process do you use to determine which boats become active and which boats are lingering and waiting?

Mr. MCKAY. There are many more boats than are needed right now for the response for those type of vessels. And I'm not sure I know the exact details, but the area contingency plans, the parish plans for instance, help us understand how implementation should occur with the Unified Command structure, in terms of deploying resources.

So the boats that are actually at work are the ones that are needed to deploy boom or to protect certain shorelines based under the Unified Command resource deployment priorities.

Mr. CAO. Mr. Chairman, if you will allow me one more question?

Mr. OBERSTAR. Oh, by all means. And I'll come back to the gentleman because he's the only one.

Mr. CAO. I thank you very much.

My next question is directed to Transocean.

I know that you've filed some kind of a pleading in Federal court, trying to limit your liability to $27 billion based on, I believe, the Limitation of Liability Act of 1851. That, obviously, is causing a lot of consternation among my people down there in the district.

Is it your position that the Limitation of Liability Act of 1851 overrides potential liability under the Oil Pollution Act?

Mr. NEWMAN. The Limitation of Liability action which we've filed only addresses non-environmental claims. OPA, I believe, addresses environmental claims. So I think the two are separate and distinct.

Mr. CAO. OK.

And it is your position also that you can transfer liability stemming from operations of your own vessels through contract with BP?

Mr. NEWMAN. There is a commercial contract between Transocean and BP, and that contract does have liability and indemnity provisions in it.

Mr. CAO. OK. If you can do us a favor by providing us with data and laws with respect to your records of inspection of the blow-out preventer, I would really appreciate it.

Mr. NEWMAN. Yes, sir.

Mr. CAO. Thank you very much.

I yield back, Mr. Chairman.

Mr. OBERSTAR. Further to the gentleman's questions, the Oil Pollution Act provides very specifically, "Each responsible party for a vessel or a facility from which oil is discharged or which poses substantial threat of the discharge of oil into or upon navigable waters or adjoining shorelines or the exclusive economic zone is liable for removal costs and damages."

Removal costs—all those incurred by the Federal Government, the State government, an Indian tribe, the State or a person—consistent with the national contingency plan. And the national contingency plan—I call the gentleman's attention to this as a guide for his constituents—was enacted in 1970 after the Torrey Canyon failure in the English Channel, and that contingency plan is updated.

And it also covers damages that include injury to, destruction of, loss of use of natural resources, economic losses resulting from destruction of real or personal property, including loss of taxes, royalties, rents, fees, loss of subsistence use of natural resources. Losses are recoverable by any claimant who uses the natural resources—that's your fishermen—without regard to ownership or management and damages for net cost to government.

It's a wide, wide area of jurisdiction and very significant in this case because 50 percent of the fish and shellfish of the United States are harvested in the Gulf of Mexico, from its 660,000 square miles.

Now we will go to Mrs. Napolitano. Oh, I'm sorry. I didn't see Mr. Taylor come in here. He is next in seniority.

Mr. TAYLOR. Thank you, Mr. Chairman. And I very much apologize. We're also marking up the National Defense Act of 2011 today.

My questions are for Mr. Newman.

Mr. Newman, where was the Deepwater Horizon built?

Mr. NEWMAN. The Deepwater Horizon was built in a shipyard in Korea.

Mr. TAYLOR. And under what flag did that vessel operate?

Mr. NEWMAN. The vessel operates under the flag of the Marshall Islands.

Mr. TAYLOR. How many drilling rigs or ships does Transocean have?

Mr. NEWMAN. A hundred and thirty nine.

Mr. TAYLOR. How many of those are flagged in the United States of America?

Mr. NEWMAN. I don't know the answer to that question.

Mr. TAYLOR. Are any of the sister ships of the Deepwater Horizon flagged under the American flag?

Mr. NEWMAN. There is one sister ship to the Deepwater Horizon, which is the Nautilus. I don't know what flag the Nautilus operates under.

Mr. TAYLOR. Would you—Mr. Newman, you are obviously aware, as Mr. Cao pointed out, of the enormous amount of suffering the people of the gulf coast have endured, first with the loss of 11 lives, with the enormous amount of suffering that continues as a result of this mishap: loss of income, the uncertainty as to whether or not the shrimp crop will ever come back, long-term effects to the seafood industry, people's immediate loss of paychecks. It has just devastated the tourism industry, the seafood industry. Seafood processors being told, "Don't send me any American-processed shrimp. We don't know if it's got oil on it. I want nothing but imports." I mean, you guys have really messed things up.

So my question is, given the harm that this accident has caused, how much taxes did Transocean pay to the United States of America last year? Because you have obviously cost our Nation a great deal of money. So I'm just curious, what was the contribution of Transocean to our Nation tax-wise?

Mr. NEWMAN. I don't have that number available with me today.

Mr. TAYLOR. Well, let me ask you another question. There has been a tendency for some foreign-flag operators to create a separate entity for the work they do in the Gulf of Mexico; it's called a corporate inversion. And they see to it that the costs that they pay to the parent company, either through the mortgage on the vessels or the overhead costs that the parent company charges them, they see to it that that exceeds their revenues or is very close to their revenues, so they end up paying no U.S. taxes even though they're operating in the Gulf of Mexico.

So my question to you is, is that part of your company that operates in the Gulf of Mexico an inverted corporation?

Mr. NEWMAN. The company that operates in the Gulf of Mexico is a U.S. company. It's a Delaware corporation.

Mr. TAYLOR. OK. But is it owned by a parent corporation?

Mr. NEWMAN. Yes, it is owned by a parent company.

Mr. TAYLOR. And where is the headquarters of the parent company?

Mr. NEWMAN. The ultimate parent company, Transocean Limited, is a Swiss corporation.

Mr. TAYLOR. OK.

Mr. Chairman, the reason I ask these questions is, you know, since the earliest days of our Republic, we've reserved the right of coast-wide commerce for American-made, American-crewed, and American-built vessels. Now, somebody somewhere along the line has given these folks an exemption from that law.

And when we go to recover the funds that the enormous amount of money that the Air Force, the Coast Guard, all the State governments, city governments hiring extra policeman, extra firemen, the call-up of the National Guard—when we go to recover those funds, I've got to believe it would be a heck of a lot easier to recover those funds from an American company that's got some assets here in the United States than someone in Switzerland.

Tell me again where the ship was actually flagged. In the Marshall Islands?

Mr. NEWMAN. The ship was operating under a Marshall Islands flag.

Mr. TAYLOR. Marshall Islands.

And, again, given what the people of Mississippi went through just trying to get the insurance industry in America to pay claims in Mississippi after Katrina, I have a very strong suspicion we're going to have a heck of a time getting someone out of the Marshall Islands or Switzerland to pay these bills.

So, Mr. Chairman, I would hope that you would give—and, again, they're pulling American minerals out of the ground on an American sea bottom with a foreign-flag vessel and quite possibly a foreign crew.

Mr. Chairman, with all respect, I would certainly hope that when we go forward from this that you would give every consideration to extending the Jones Act to cover this sort of vessel in this sort of circumstance.

I thank you very much.

Mr. OBERSTAR. The gentleman and I have had a conversation about the application of Jones Act to this situation, and I've asked the staff to prepare a guidance memorandum on the applicable law and the problems of dealing with the WTO requirements. And there are some legal obstacles that we have to overcome on some aspects of that issue. So this is something that the gentleman and I and others of interest on the Committee will work our way through. But I appreciate the gentleman raising that issue. That's of vital importance.

Ms. Johnson, you had an opening statement, but you didn't have an opportunity for questions.

Ms. JOHNSON OF TEXAS. Thank you very much, Mr. Chairman. And I apologize for being in and out. I had another Full Committee in hearing and a bill on the floor that I had to respond to.

This question is for Mr. Newman.

There was some news report that indicated that, though these people were very stressed when they came out from the area of the work, they were asked to fill out a form releasing your company from any liability. Is that true?

Mr. NEWMAN. Congresswoman, I don't know if you've had an opportunity to view that form, but there is no release or waiver language in that form. You can appreciate that this exercise in understanding what happened and how we can prevent it in the future is a fact-finding exercise, and the two questions that were posed on that form are mere statements of fact.

Ms. JOHNSON OF TEXAS. Mr. Chairman, I would like to ask unanimous consent to make this form a part of our permanent record.

Mr. OBERSTAR. Without objection, so ordered.

Ms. JOHNSON OF TEXAS. Thank you very much.

What liabilities do you have, what responsibility do you have for the employees?

Mr. NEWMAN. With respect to our employees?

Ms. JOHNSON OF TEXAS. Yes.

Mr. NEWMAN. As I mentioned in my opening comments, Congresswoman——

Ms. JOHNSON OF TEXAS. I might have missed them. I'm sorry.

Mr. NEWMAN. —we are doing everything we can to help the nine Transocean families who are affected by this horrible, tragic accident to cope with this tragedy.

Ms. JOHNSON OF TEXAS. OK.

Now, Mr. McKay, why does BP feel that they are in a position to allow or not allow Federal agencies access to the spill site to measure the volume of the spill?

Mr. MCKAY. We've been working constantly with government agencies, ranging from Coast Guard to MMS to Department of Defense, Navy, Air Force, NOAA, EPA, all with open access to all the data. We've been working together on everything, as far as I know.

Ms. JOHNSON OF TEXAS. Are you measuring the exact volume itself?

Mr. MCKAY. The difficulty we have in this situation is it's in 5,000 feet of water, so we have no way of measuring. It's coming out of a broken pipe.

So we've been working with NOAA scientists and other industry experts in trying to understand, by judging from what it is estimated at the surface, plus what we believe the oil will disperse in the water column, to come up with the estimate of the flow rate. It's very difficult to come up with the flow rate in the conditions we are in.

Ms. JOHNSON OF TEXAS. Uh-huh.

In 2004, BP produced an analysis entitled, "Thunder Horse Drilling Riser Break—The Road to Recovery," that tried to determine what had happened in a 2003 spill. BP's own conclusions were that the company was not well-prepared for the long-term recovery effort.

Is this still the same situation?

Mr. MCKAY. I believe the study you're talking about was a riser incident where the blow-out preventer worked, sheared everything, the riser came off, as it's supposed to. And the spill was the drilling fluid that was in the riser, I believe, if I'm correct.

I would say, to further your question, I think we are going to learn a lot from what is happening here. And I think everybody is planning, and the regulations will have to take into account what we're learning.

Ms. JOHNSON OF TEXAS. Well, is it not correct that you, kind of, ignored your own study from 2003?

Mr. MCKAY. No, I don't think that's correct. I don't think we ignored that. I think that taught us some lessons about how risers work when the blow-out preventer shears and they're released.

Ms. JOHNSON OF TEXAS. Thank you. My time has expired.

Mr. OBERSTAR. As a follow-up to Ms. Johnson's question, and it is one that I was going to pursue later: Mr. Newman, is there any intent on the part of Transocean to use this form in any defense against civil actions filed by any of your employees?

Mr. NEWMAN. Mr. Chairman, recognizing that I'm an engineer and not a lawyer, I don't believe that form would be admissible as a defense mechanism.

Mr. OBERSTAR. At the outset of the hearing, when I swore in the witnesses, I said that the oath applies also to materials submitted to the Committee. I will ask you to submit a statement to the Committee in response to this question from your legal team.

Questions have been raised by those who escaped the rig but who, in a state of shock in the immediate aftermath, signed this form and are confused about what its effect will be on their ability to recover medical costs and other medical expenses that they may incur. At the time, they didn't really know what they were signing. At least, that's what they say.

So I want that response from your legal team.

Mr. NEWMAN. Yes, sir.

Mr. OBERSTAR. Mrs. Napolitano?

Mrs. NAPOLITANO. Thank you, Mr. Chair.

Sitting here listening to a lot of my colleagues' questions has brought some other issues to mind about the number of wells that are currently in operation that are either below 1,000 feet, below 2,000 feet. And how many—where are they located? And what kind of oversight is there over their inspection for safety purposes, and what intervals? And where are they? And do any of them use the same equipment?

And I realize that this one was permitted back in '01—at least that's the information I'd gotten initially—permitted in '01. And there has been some discussion amongst some of us that maybe no permits ought to be issued below 1,000 until there is enough evidence to ensure that the oversight and the safety precautions have been taken to prevent any future spills. And while I marvel at my colleague stating that there are thousands of them out there that have not had the incidents, all it takes is one for a catastrophe.

So I'd like to have some information, and you may not have it with you, but I'd like to have it, with the Chairman's permission, reported to this Committee about how many wells are currently in operation in deep waters and what kind of equipment they are being handled with. What oversight—and at what intervals are you checking for their safety? If some of this equipment is going to be faulty, better to be proactive than reactive.

Answers?

Mr. NEWMAN. We will submit that information.

Mrs. NAPOLITANO. Do you have any idea offhand? I realize there were 7,000 platforms.

Mr. MCKAY. I don't know the exact numbers. There have been about 2,300 wells drilled below 1,000—deeper than 1,000 feet of water. There are production platforms out there that are producing the successful wells that have been hooked up. And then there are about 100 to 130 wells drilled in deep water each year. So we can get that data to you, and we can explain——

Mrs. NAPOLITANO. Would that report also, please, include any incidents that they may have had where you may have had problems with the equipment itself that might have caused something had they not been safeguarded by some of the BOPs, whatever you call them?

Mr. MCKAY. Yes, we can submit whatever—our experience, yes.

Mrs. NAPOLITANO. OK.

The other issue, of course, is that there's the Oil Spill Liability Trust Fund that currently has $1.6 billion in it, according to my staff, which covers a lot of the costs. And, eventually, it has to be repaid by the company, I'm understanding. Is that correct?

Mr. MCKAY. What we've said—and we've tried to be clear from the start—we are a responsible party, have formally accepted that designation. We——

Mrs. NAPOLITANO. I understand. But this is the Oil Spill Liability Trust Fund.

Mr. MCKAY. Right. We are not going to access that fund.

Mrs. NAPOLITANO. You are not?

Mr. MCKAY. No. What we've said is we are going to bear this. We will ignore the $75 million cap. And we will not be trying to get reimbursement from the fund.

Mrs. NAPOLITANO. OK. The——

Mr. OBERSTAR. If the gentlewoman would yield?

Mrs. NAPOLITANO. Certainly.

Mr. OBERSTAR. Just to be clear about the Oil Spill Liability Trust Fund, that is managed by the U.S. Coast Guard. It has a balance of $1.6 billion. The fees were allowed to expire in 1994 and then reinstated several years later and updated from 5 cents to 8 cents. And that should be—it should've been adjusted to the Consumer Price Index.

But that is an amount which the Coast Guard or any other U.S. Government agency draws against to pay upfront costs if the responsible party is not paying those costs and then to collect those costs from the responsible party. So, neither Transocean nor BP draws against the liability fund; it's a government agency that does, just for clarification.

Mrs. NAPOLITANO. Thank you for that clarification, Mr. Chair.

Then one of the other areas that keeps coming up is what is a legitimate claim, simply because—and I realize this depends on who's asking. But, as happens in many of the other spills, decades later there's still an impact in the communities, in the sea life, in the tourism, in many of those areas.

Will that extend through those time frames? Because it isn't just the impact now or in the foreseeable future; it's the long term.

Mr. MCKAY. Yes, we've been clear, the legitimate claims applies to the impacts that are caused by this spill. And we want to be fair, responsive, and expeditious about that. And I've also made it clear that it doesn't end when the cleanup ends. And so, hopefully we can get this thing stopped as quickly as possible, minimize any impact. But whatever impacts there are—and I know that they could go longer into the future—yes, that's what we're saying.

Mrs. NAPOLITANO. Thank you, Mr. Chair. I may want to submit some other questions for the record. And I yield back.

Mr. OBERSTAR. And those questions will be received and transmitted to the witnesses.

Mr. Altmire?

Oh, I'm sorry. You need to move up closer, Mr. Olson, so I can see you there. You're fading out against the background. I apologize for passing you over. You are now recognized.

Mr. OLSON. Thank you, Mr. Chairman. No apologies necessary. And, again, thank you for having me here today.

And I appreciate the witnesses coming up, giving us your testimony, your expertise, your perspectives on this disaster and what we should do here in Congress.

And I think I can speak for most of us here, and probably all as well, my focus has been, since this thing has happened, it was, it is, and it shall be stopping that leakage, that well, off the bottom of the gulf coast. And once we do that, then we can worry about what happened, why it happened, and take the steps we need to take here to make sure that it never, ever happens again.

And I just want to make sure that I have a perspective on how much oil is actually being discharged out of the leak right now. I mean, we've seen reports that it's up to—the Unified Command said 5,000 barrels a day. I've also seen some press reports that say it may be up to 80,000 barrels a day.

And I just want to ask you—and this is mostly for Mr. McKay: What is the best—is 5,000 barrels per day the most accurate, or is it something more than that?

Mr. MCKAY. That is our best estimate.

Obviously, it's continually being looked at. As you may know, we've gotten this riser insertion tube to work, and we're getting increased volumes at the surface where we can actually measure. And then, I believe there is a new small task force that has been put together under direction of Unified Command to get all the experts together in a room and try to understand, with the latest available data, is there a more accurate estimate?

But we do recognize there is a range of uncertainty around the current estimate.

Mr. OLSON. Thank you very much for that. And you kind of read my mind there. How much is that riser tube, do you think, taking off the discharge? I mean, can you put any numbers on that? Is it 4,000 barrels a day? 2,000?

Mr. MCKAY. Last night, or yesterday, it was about 2,000, and we've been trying to ramp it up slowly so we don't pull the water in and get hydrates. I suspect today it's higher, but I haven't had an update yet today.

Mr. OLSON. OK. Thanks very much for that.

And I just want to get an update from you on the relief well. I mean, it's still 2 to 3 months before that's going to be up and running?

Mr. MCKAY. We've got two relief wells drilling. One's at about roughly 9,000 feet below sea level, and the other one spud on or began operations on Sunday, Sunday of this past—this past Sunday. So, yes, to get to the total depth of the well, it will take about 3 months to get there.

Mr. OLSON. One final question. This is just about the dispersants. I understand you've been using some dispersants down at that depth, 5,000 feet, which hasn't been done in history, as far as I've been told.

I just kind of want to get your perspectives on those dispersants. How are they working? Are they helpful? Do you have any concerns about the environment, post? Because they've been put on there not so much with all the tests they need to at that depth. But, again, we've got to stop this discharge.

And so I just wanted to get your perspectives on how the dispersants are working.

Mr. MCKAY. The dispersants, in general, have worked well on this oil. The sub-sea dispersant, it is the first time it has been tried. It seems to work exceptionally well. One of the benefits is it seems to need less dispersant per unit of oil contacted, so it's efficient in that sense.

It has not been tried, so there are very, very strict protocols that the EPA has put in place, under their direction, to monitor and understand what happens as we go forward. It can be stopped at any time if there's any data that would say it should be. But it's important, and I think it's working.

Mr. OLSON. Thank you very much, and I appreciate all the hard work you all are doing. I know you are sort of writing the book on this. This is deeper than any of these things that have happened before, and being a Member of Congress who represents the Johnson Space Center, it is sort of like Apollo 13. They just had their 40th mission, and they were basically writing the rules and figuring things out as they went.

Let's hope you all will be just as successful as we were in getting those astronauts back home, and I look forward to working with you to ensure that you do that.

Mr. Chairman, I yield back the balance of my time.

Mr. OBERSTAR. I thank the gentleman.

Mr. Olson, just further to your question about measuring the flow, the Coast Guard is establishing a peer review panel to bring together the best minds in the industry and academia to agree upon the best available technology to measure flow accurately at that depth under these conditions. That actually is underway now.

Mr. Altmire.

Mr. ALTMIRE. Thank you, Mr. Chairman.

The discussion we have had today has dealt with, of course, every phase of this, the explosion, the leak, the response, the cleanup. I am interesting and have some questions about the spill, the leak.

It is safe to say what we know right now, the explosion caused the spill. Is that correct?

Mr. MCKAY. The way we are looking at it is we had a well control event of some sort, hydrocarbons into the wellbore, there was a well control period, and then an explosion. Then there is a related but separate event about the safety equipment and whether that worked once things happened.

Mr. ALTMIRE. That is the second issue. Thank you, Mr. McKay. The failure of the blowout valve is what is responsible for the situation that we find ourselves in today?

Mr. MCKAY. The simplest way to look at it, we had a horrendous industrial accident due to a well control event and an explosion. Then we have had equipment, and we don't know why, that didn't work, that I think effectively has been responsible for the size of the spill that we have now and the ongoing operations.

Mr. ALTMIRE. There are other scenarios, of course, that exist that would cause a spill, that would cause a leak of this sort, is that correct? Or is this the only way that a leak like this could ever happen, is by an event like this?

Mr. MCKAY. I think the leak of this magnitude would take a well control event and then a failure of a piece of equipment.

Mr. ALTMIRE. Is there any technology that exists that you know of that could have prevented this from happening?

Mr. MCKAY. I don't know of a piece of technology that could have prevented it. I do think we will learn about how to build in potentially more redundancy and design, testing criteria for pieces of equipment to make it safer. I do think we will learn from this to make it safer.

Mr. ALTMIRE. We talked a lot earlier in the hearing about the acoustic control, is it a $500,000 piece of equipment, is that about right, that is accepted in Norway and Canada. Do you wish in retrospect that BP had invested in this device?

Mr. MCKAY. I agree with Mr. Newman on that point. I don't believe that particular device in this particular instance would have made a difference in that we had multiple triggering devices, and we physically tripped and triggered the deadman with an ROV. So the triggering of the BOP was not the issue evidently, or at least not the entire issue.

I do think as the studies and the post appraisals of this go forward, the consideration of different triggering devices, including acoustic, it is worth looking at.

Mr. ALTMIRE. Do you think that this Congress should look at making mandatory those types of devices moving forward?

Mr. MCKAY. I think the investigations and the panels that have been assembled and are going to work through this will come up with recommendations to change regulation or devices in the future. So I would say mandates, I don't know. But I do think the panels and the investigations will come up with conclusions that can then be acted upon. But I think we don't know what happened yet.

Mr. ALTMIRE. Do you think that part of the reason this happened is because of the age of the device, of the apparatus that failed?

Mr. MCKAY. Perhaps that would be a better question for Mr. Newman, since it is their blowout preventer.

Mr. NEWMAN. I don't think the 10-year age of the BOP had anything to do with it.

Mr. ALTMIRE. Is there any reason to think that in any other rigs, offshore platforms, that this is going to be a problem that we should look into solving before something like this happens?

Mr. NEWMAN. I am not sure I understand your question. I guess my response is that until we know exactly what happened and the real sequence of events, it is difficult to speculate about what a prevention mechanism in the future might look like.

Mr. ALTMIRE. I guess what I am getting at is the two possibilities here are, one, that it was known that a scenario like this could take place and there are devices, technologies that exist that could have prevented it, and that was not done; or, we don't know why this happened, we don't know how to prevent it, there is no technology that exists to ever prevent this from happening again, which, of course, changes the discussion in the Congress about moving forward with these types of endeavors.

Mr. NEWMAN. I am not sure we can bifurcate between those two until we know exactly what happened in this particular case. It is entirely possible we may after the full fact-finding and airing of exactly what happened, we may conclude that this was a scenario that the industry should have planned for.

Mr. MCKAY. Just a comment. I do believe the multiple investigations are going to determine cause of the explosion and the well control event as well as the issues around the blowout preventer. It may take time. I do have confidence that then things can be amended, adjusted and planned for and made safer. I really do believe that.

Mr. ALTMIRE. Thank you both.

Mr. OBERSTAR. There have been blowouts in shallower waters where the blowout preventer has activated, correct, but not at 5,000 foot depth. Mr. Newman?

Mr. NEWMAN. I am familiar with blowout events. The Ikstock well that blew out in the 1970's was in shallow water on a jack-up.

Mr. OBERSTAR. Shallow meaning roughly 350 feet.

Mr. NEWMAN. Certainly less than that, yes. And that well flowed for about 9 months.

Mr. OBERSTAR. Mr. Hall.

Mr. HALL. Thank you, Mr. Chairman, for holding this hearing. My prayers and condolences to the families of those who were killed and injured in this event.

Mr. McKay, I am curious about the choice of dispersant, Corexit 9500, which is manufactured by a company called Nalco Holding Company on which a former 11-year board member of BP sits on the Nalco board.

Do you know approximately how much money BP has paid so far to Nalco for this dispersant?

Mr. MCKAY. I am sorry, I don't.

Mr. HALL. Could you get the Committee that information, please?

Mr. MCKAY. We can get that.

Mr. HALL. Why do you think Corexit would have been chosen over, as Mr. Nadler said, a less toxic and more effective product like Dispersit, for instance, which you would think would be a better choice? And did BP talk to—did your company talk to any manufacturers of the other dispersants to find out if they were available?

Mr. MCKAY. I have not been personally involved in the choices around the dispersants and what happened in terms of talking to companies and understanding the availability, the effectiveness or the choices that have been made. We can get you some information on that. I just have not been involved on that.

Mr. HALL. My understanding is that the company that manufacturers Dispersit, just for one out of the list of 13 approved dispersants, says it could quickly produce 60,000 gallons per day, which something more than is currently being used by BP for this spill, as I understand it. So that would be a good conversation to have.

After Exxon Valdez, the dispersants were found to concentrate in the organs of certain fish and other marine life, and I assume that it would do the same thing in the organs of human beings who consumed those fish.

As a condition for the subsurface application of Corexit, EPA directed BP to implement a monitoring plan on the plume, including measuring the toxic effects of the mixture of dispersed oil and Corexit. What are the results of this monitoring; are those results posted somewhere and available to the public?

Mr. MCKAY. The monitoring is ongoing, and I believe it is being worked through Unified Command. I don't know how much of that has been posted or is public, but we can certainly get back to you on when it is expected to be and as the results are tabulated. But there is constant monitoring going on under the direction of Unified Command and with the relevant government agencies.

Mr. HALL. Thank you. I would appreciate a written response to that.

The directive also orders BP to "detect and delineate the plume." Is BP doing this?

Mr. MCKAY. Again, with assistance from the government agencies involved with the monitoring and the sampling programs under Unified Command or within Unified Command, I believe that is going on.

Mr. HALL. Could you please inform the Committee in writing of the nature and extent of all subsurface plumes.

Mr. HALL. Do you know whether the dispersant or dispersants you are using are harmful to human health, whether they tend to bioaccumulate, or are they known carcinogens?

Mr. MCKAY. I don't know offhand. We will get that back to the Committee.

Mr. HALL. Are you prepared to assume liability for the human health effects, not just of the oil spilled, but also the dispersants as well?

Mr. MCKAY. We have said we will honor all legitimate claims related to the impacts of this spill.

Mr. HALL. Do you know, or Mr. Newman, do you know, what the blowout preventer costs for the Mikado site?

Mr. NEWMAN. I don't know what we paid for it back in 1999 or 2000 when we bought it.

Mr. HALL. What is a typical ballpark figure for the collection of redundant blowout preventer devices?

Mr. NEWMAN. I believe if we went out and bought one today, I think it would cost in the range of $15 million.

Mr. HALL. Mr. McKay, do you know approximately what the annual advertising cost was for BP for that nice unfolding flower on TV in the "beyond petroleum" slogan to be broadcast into living rooms around the country?

Mr. MCKAY. I know roughly. I don't know exactly. Last year it was about $10 million to $12 million, and this year is probably $20, something like that. I don't know. I can get the numbers for you.

Mr. HALL. So it is roughly the same or maybe a little more than the cost of a blowout preventer. I assume that BP is deducting the cost of this image advertising, which does not actually talk about your product, but just as sort of a feel-good image ad, from the costs of doing business for tax purposes. Do you know if that is correct?

Mr. MCKAY. I don't know the tax treatment of that. I presume that is an expense and treated as such.

Mr. HALL. Well, that is an expense that I question the validity of. It may be legal at the moment, but if one is merely advertising what appears to be we are nice guys, we are good to the environment, please don't regulate us, which is the way some of us might perceive that, I would suggest that, Mr. Chairman, we might in the future or somebody in this Congress might look at it.

My time has expired. Thank you, Mr. Chairman.

Mr. OBERSTAR. The gentleman has asked some very pertinent and very important questions, and we will pursue those further.

Mr. Teague has the responsibility for the Committee to be on the floor and manage a bill from our Committee on the House floor. He is also our Committee and perhaps the House resident oil drilling practitioner.

I want to yield to the gentleman at this time.

Mr. TEAGUE. Thank you, Mr. Chairman, for having this meeting today.

Mr. McKay and Mr. Newman, thank you all for coming and answering the questions here. I would just like to make a statement to start with.

I want to separate myself from comments that were made earlier to politicize this problem that we have. I don't think this is the Obama oil spill. I don't think it is the Bush oil spill. I think it is a tragedy that we are having in our industry, and I hope we find out that it is an accident.

But at the same time, I am not trying to protect BP and I am not trying to protect the Federal agencies like the Mineral Management Service and companies like that. But it doesn't matter if Mineral Management was lax in their inspections or not. We should be doing the best that we can do, because our first obligation is to our employees, that we furnish them a safe environment to work in.

So I would think that we wouldn't use the fact that Mineral Management or whoever does the inspections did a poor job of inspecting. We would want to have a clean environment and a safe work site and everything, and I am convinced that BP and Transocean both are those type of companies. I think that there is going to be plenty of time for criticism and compliments both at a later time.

But I do have a couple of questions that I wanted to ask. One of them is about the BOP, and actually I have rented BOPs and dressed BOPs. So the way that you test them, have you had to make a change with any of the rams or seals or O rings or anything at that depth?

Mr. NEWMAN. In terms of the testing?

Mr. TEAGUE. Yes. When you test the BOPs, at different times have the rams leaked and you needed to change maybe the seals on the rams or the O rings in the shaft or anything like that?

Mr. NEWMAN. Because these are pass-fail tests, when the equipment fails the test, we have no choice other than to repair the equipment. That is the right thing to do.

Mr. TEAGUE. Right. And you have done that at this depth before, and you just tested these BOPs a few days before this happened?

Mr. NEWMAN. The BOP on the Horizon was tested on the 10th and the 17th. Let's just be clear, Congressman: When the BOP fails the test, you have to isolate the well, make the well safe, and then recover the BOP up to the rig. This is not equipment that you can repair at 5,000 foot water depth. So you bring it up to the rig, repair it and run it back down.

Mr. TEAGUE. Do you all have a——

Mr. OBERSTAR. Will the gentleman yield? The witness is not answering the gentleman's question. He asked specifically did you test it at depth. I asked that question earlier in the hearing. Your response was no. You need to answer Mr. Teague's question.

Mr. NEWMAN. On April 10th and on April 17th, the BOP was on the seabed in 5,000 feet of water. It was tested at depth and it passed those tests.

Mr. OBERSTAR. That was not the answer you gave earlier today.

Mr. TEAGUE. OK, thank you.

Now, do you all have a kill line below the BOP on the wellhead and are you tied on to the kill valve?

Mr. NEWMAN. I am trying to remember the exact configuration of the BOP. There is a choke line and a kill line. I don't remember where those outlets are with respect to the rams.

Mr. TEAGUE. OK. So at this time, are you tied on to it and can you pump into the wellbore or somewhere?

Mr. NEWMAN. We are in the process of preparing to pump into the BOP, using either the top kill method or the junk shot method.

Mr. TEAGUE. OK. As you know, I think one of the things, like any time that we have an issue like this that is a situation, there is a lot of information and a lot of misinformation out there. And I think what one of the problems is the information that is out there about the positive test and the negative test. I was wondering if you might be able to explain that a little bit so that maybe everybody could understand what is the difference between a positive test and a negative test?

Mr. NEWMAN. A positive test is a test in which you apply pressure to the casing and the cement, so you increase the pressure to make sure that the casing and the cement can withstand that pressure. A negative test is when you lower the pressure to ensure that nothing flows out of the casing and cement.

Mr. TEAGUE. When you all performed the negative test on this liner, did you displace the hole with seawater or did it still have the drilling fluid in the hole?

Mr. NEWMAN. I do not have the details as to how they actually went about performing that task, so I can't tell you which portion of the hole had mud in it and which portion of the hole had seawater.

Mr. TEAGUE. This is for Mr. McKay. I know that there is going to be definitely a root cause analysis and the information that is acquired from there. Will you share it with the industry and how soon will you share it with the industry so we can keep something like this from happening again?

Mr. MCKAY. Yes, our internal investigation, we are going to share everything with the industry as well as Committees and the government. I don't know exactly how long yet. We are obviously trying to piece things together. It will go as fast as it can possibly go. But we are right in the middle of it right now. But, yes, we will definitely share it. Absolutely.

Mr. TEAGUE. Thank you. It is a bad problem and I don't know how it is going. It looks like it could go for a while.

One other question I wanted to ask you. At what depth are you going to plan to intersect the well with the alternate wells?

Mr. MCKAY. Roughly right at reservoir depth.

Mr. TEAGUE. OK. I was just curious. The sooner that we could intersect it, the quicker we can stop the flow.

Mr. MCKAY. Yes. We have looked at a model. It is going to need to be right at reservoir depth.

Mr. TEAGUE. OK, very good. Thank you all for being here today and for answering these questions, and we will stay in touch.

Thank you.

Mr. OBERSTAR. Mr. Kagen.

Mr. KAGEN. Thank you, Mr. Chairman, for holding this very important meeting, and thank you for being here today. I have heard a great deal of your testimony earlier in your other Committee appearances, and I appreciate the fact that you are taking full and complete responsibility for cleaning up this mess and for recompensing everyone who may have a claim, be it legitimate or, as somebody else may decide, a really legitimate claim.

I would like to put a little frame around this and then ask a few questions.

From where I am sitting, it really looks like the financial collapse that we had, because during our financial collapse we had to clean up the mess, we had to catch and punish all the crooks, we had to make sure we rewrote the legislative language and the regulations to make sure that it would never happen again. This CCR approach looks like we are having to come in here with this big leak in the Gulf.

Let me just review, and correct me where I am wrong. Is it not true that a foreign corporation bought foreign steel, built some ships, foreign flagged, came in, and now as a consequence all of your economic investments, we have lost jobs in my shipbuilding State of northeast Wisconsin. We have got steel mills that could be hiring more people. But you chose to hire people overseas and spend the money overseas.

Is that true or false?

Mr. NEWMAN. The Deepwater Horizon was built in a shipyard in Korea.

Mr. KAGEN. So the answer is true, correct?

Mr. NEWMAN. The Deepwater Horizon was built in a shipyard in Korea.

Mr. KAGEN. So it is true that you took our money from the oil revenues and invested it overseas and hired people overseas and not in our great United States of America, and now we are suffering the consequences of it.

With regard to your commitment to responsibility, this is your BP regional response plan, the oil spill response plan right here, and right on the front page you say that upon receiving indication of an oil spill or other chemical release that may threaten the waters of the United States, the following actions are critical to initiating or sustaining an effective response.

One of them is to locate the spill. And the second thing you mention is to determine the size and volume of the spill. Yet according to the press reports, you refused, and here your testimony this morning, you are refusing to measure the rate of spillage that is coming through this leak, knowing, according to published reports and other newspaper articles, that there are other facilities that could help you to do it that, such as the National Deep Submergence Facility at Woods Hole. They are able to assist you.

Would you be willing, yes or no, to contact the people at Woods Hole and begin to monitor and measure the extent of the leak you created?

Mr. MCKAY. May I correct something you said, or at least disagree with it?

Mr. KAGEN. You may.

Mr. MCKAY. We are not refusing to measure the leak. This leak is not measurable in terms of technology that we know and have seen with industry experts as well as other government agencies.

Mr. KAGEN. Well, reclaiming my time back, “You can use this type of technique to determine the velocity of the particles, and if you know what the area is, it is relatively straightforward mathematics to determine what the volume is." That is Andy Bowen, who is Director at Woods Hole of such a facility. I urge you to contact him.

With regard to your decision and the acquiescence of the EPA to use some dispersants, some chemical dispersants, you are using Corexit, correct?

Mr. MCKAY. Yes, two different types.

Mr. KAGEN. All right. And on page 3 of one of the MSDS sheets, environmental precautions: Do not contaminate surface water. So another MSDS for Corexit, this would be for EC7664A, there is arsenic. Are you aware that there is arsenic in these compounds?

Mr. MCKAY. I was not specifically aware of arsenic in the compounds.

Mr. KAGEN. Are you aware that arsenic is a known human carcinogen?

Mr. MCKAY. I do know that.

Mr. KAGEN. All right. So you are aware that this carcinogen is being put into our Gulf Stream into our food web now, are you not?

Mr. MCKAY. I am aware we were using these dispersants in an approved by way by the EPA and other government agencies.

Mr. KAGEN. All right. And to follow up on your intention to be a very responsible corporate entity and responsible personally, would you here this morning, or this afternoon now, commit to funding any and all studies to look at the long-term consequences of the dispersal agents you are now using within the Gulf?

Mr. MCKAY. I cannot commit to fund any and all studies. No, I cannot.

Mr. KAGEN. Which studies would you fund? Or is that a hypothetical question?

Mr. MCKAY. It is.

Mr. KAGEN. But you would agree that it might be necessary to do some studies of the Gulf life consequences of your dispersal agent being distributed, is that correct?

Mr. MCKAY. I believe we are doing that through the protocols and monitoring, as well as the natural resource damage.

Mr. KAGEN. You would also agree with me there might be some long-term studies that might become necessary, is that correct?

Mr. MCKAY. That may be true.

Mr. KAGEN. These long-term studies might run into the hundreds of billions of dollars, is that possible?

Mr. MCKAY. I have no way of knowing.

Mr. KAGEN. But it is possible. Would you agree to that?

Mr. MCKAY. I have no way of knowing.

Mr. KAGEN. All right, so you have no way of knowing how much it would cost. Therefore, isn't it incumbent upon this Congress and possibly the administration to ask you to set aside, for this government perhaps to freeze some of your current assets? Your corporation is worth $142.5 billion. So would it be agreeable with you if the United States Government would freeze, let's just start with a number of $25 billion for future studies and corrective actions that may become necessary?

Mr. MCKAY. We have been very clear from day one that we are going to fulfill our responsibilities as a responsible party under the Oil Protection Act.

Mr. KAGEN. I will take that as a yes that you would agree that $25 billion set aside and frozen might be a good idea.

Mr. MCKAY. I did not say yes to that.

Mr. KAGEN. All right. So then I will take a that as a no. Is that correct? Is that a no?

Mr. MCKAY. I am not agreeing to that, is all I can say.

Mr. KAGEN. OK. Can you tell me if anyone in either of your corporations, yourselves personally, are you two personally aware of anyone within your corporation having changed the records or falsified any records within your corporation at any time?

Mr. MCKAY. I am not aware of that.

Mr. NEWMAN. I am not aware of any instance of that.

Mr. KAGEN. Do you feel that anyone within your corporation would be criminally negligent because of the loss of life that has taken place in this accident?

Mr. MCKAY. I have no way of knowing that.

Mr. KAGEN. All right. Well, thank you for being here. I see my time has expired, and I will submit written questions that I would appreciate your complete and full and honest and responsible answers to. Thank you.

I yield back my time, Mr. Chairman.

Mr. DEFAZIO. [presiding.] Representative Johnson.

Mr. JOHNSON OF GEORGIA. Thank you, Mr. Chairman.

Mr. McKay, you are the President of BP Plc, is that correct?

Mr. MCKAY. No, it is BP America.

Mr. JOHNSON OF GEORGIA. OK. And in connection with your job duties, you are aware of the fact that BP is a habitual violator of health and safety regulations?

Mr. MCKAY. As I mentioned earlier, we have had some tragic accidents in the past. We are making improvements in the company.

Mr. JOHNSON OF GEORGIA. And those violations, some of your violations have actually resulted in criminal charges being brought against the company, is that correct?

Mr. MCKAY. That is true.

Mr. JOHNSON OF GEORGIA. Actually, at this time you stand or you sit as president of a convicted felon operation, is that correct?

Mr. MCKAY. We have pled guilty to a felony in relation to Texas City, that is true.

Mr. JOHNSON OF GEORGIA. So that makes you a convicted felon then, is that correct?

Mr. MCKAY. I don't know the nuance of the word, but we have pled guilty to a felony as regards Texas City.

Mr. JOHNSON OF GEORGIA. Well, let me ask you this question also, Mr. McKay. Do you have any idea, can you give us any indication as to how BP intends to respond to Secretary Napolitano's and Secretary Salazar's May 14th letter requesting clarification on BP's intentions regarding the $75 million statutory cap on damages?

Mr. MCKAY. Yes, we have responded in writing to that and we have said we will not—excuse me, that cap will not apply. We have responded in writing to that. I can provide that to the Committee.

Mr. JOHNSON OF GEORGIA. In that connection I would like to ask you about the expedited claim process that BP has put in place which features claims offices that are easily accessible, and you have handled about 19,000 claims thus far. Is that correct?

Mr. MCKAY. Yes. It is 19,000 claims have been made, that is right.

Mr. JOHNSON OF GEORGIA. Now, is it true that——

Mr. MCKAY. I am sorry, can I correct one thing? I think I used the word "paid" earlier. 19,000 claims have been made. I don't know the exact number. Something like 4,000 have been actually physically paid.

Mr. JOHNSON OF GEORGIA. OK. And is it true that these claims that were filed came largely from fishermen?

Mr. MCKAY. I don't have a breakdown, but I think a lot of them are fishermen and folks earning a living right on the Gulf Coast, marinas, small businesses on the Gulf Coast that have been immediately impacted.

Mr. JOHNSON OF GEORGIA. And it is also fair to say that the full measure of harm to that industry will not be known for years, is that correct?

Mr. MCKAY. I don't know. We will have to see what the impacts are.

Mr. JOHNSON OF GEORGIA. We don't know what the impacts are now, and the 4,000 who have signed I guess documentation in return for receiving some money, nobody knows at this time what the effects of this oil spill will bring to their industry, correct?

Mr. MCKAY. That is right.

Mr. JOHNSON OF GEORGIA. Let me ask you something, because we have talked about releases and that kind of thing with Mr. Newman, but we haven't done so with Gulf. Has Gulf Oil, its claims process, tendered and required the signatures of the claimants on any form that would preclude them from asserting claims for damages thereafter?

Mr. MCKAY. We as BP have had no one sign those type of forms.

Mr. JOHNSON OF GEORGIA. Now, you do have forms that they have signed though, the 4,000 who have received payment, is that correct?

Mr. MCKAY. Yes.

Mr. JOHNSON OF GEORGIA. And if you would forward to my attention a complete package of forms that these claimants have signed, I would greatly appreciate it. Will you do that?

Mr. MCKAY. Yes. Absolutely.

Mr. JOHNSON OF GEORGIA. And last but not least, we have talked about the blowout preventer. Has it or has it not been tested at 5,000 feet or below?

Mr. NEWMAN. The blowout preventer that was in use on this particular well was deployed in the early days of February and since that time it has been at 5,000 foot water depths and it has been tested every 7 days at 5,000 foot water depths.

Mr. JOHNSON OF GEORGIA. Has that make and model of blowout preventer ever been tested prior to its deployment on the sea bottom for the Deepwater Horizon vessel?

Mr. BLUMENAUER. That BOP has been in use since 2002, so it has 8 years of testing data.

Mr. JOHNSON OF GEORGIA. That is not my question. Yes or no: Has that particular make and model been tested at depths of 5,000 feet or more prior to this explosion?

Mr. NEWMAN. Yes.

Mr. JOHNSON OF GEORGIA. What were the dates and times of those, and would you provide me with copies of the reports and findings on the testing?

Mr. NEWMAN. Congressman, part of the exercise we are going through is a full and thorough understanding of the history of the BOP, and we will make that available to the Committee.

Mr. JOHNSON OF GEORGIA. So you don't have that information for review at this time?

Mr. NEWMAN. I don't have it with me, no.

Mr. JOHNSON OF GEORGIA. Have you reviewed any such documentation?

Mr. NEWMAN. I have looked at some of the test data for the BOP.

Mr. JOHNSON OF GEORGIA. And you have seen test data that indicates testing at a depth of 5,000 feet or below prior to this catastrophe?

Mr. NEWMAN. I looked at the well operations report from April 17th, which indicates that a test was conducted on that date and that the BOP passed the test on that date.

Mr. JOHNSON OF GEORGIA. But no information about prior dates, before it was installed?

Mr. NEWMAN. I have not personally gone back through the history of the BOP, but that is certainly part of the investigation that we are conducting.

Mr. JOHNSON OF GEORGIA. Thank you, sir.

Mr. DEFAZIO. I thank the gentleman.

Just to follow up, because I am a bit confused. Since there had previously been another rig there that was damaged in the hurricane and you brought this rig in, was the blowout preventer the same, or was it replaced?

Mr. NEWMAN. Each rig has its own blowout protector. So when the Marianas was on that well last year, it was using the Marianas' BOP. When the rig was damaged in the hurricane and left that location, the Marianas took the Marianas' BOP with it. When the Horizon arrived on that location, she arrived on location with her BOP.

Mr. DEFAZIO. And then if this accident hadn't happened and a permanent drilling rig had been put in place, yet another—then BP would bring in, you would bring in your own BOP at that point?

Mr. MCKAY. When you complete the well and install a production platform, you don't have any use for BOPs any more. The wells are piped solid to the surface to be controlled off the platform.

Mr. DEFAZIO. At that point you wouldn't——

Mr. MCKAY. No BOPs.

Mr. DEFAZIO. All right.

Ms. Richardson.

Ms. RICHARDSON. Thank you, Mr. Chairman. It has been reported that there were difficulties with the blowout preventers prior to this accident, something about some of the workers noticed some rubber or something that had come up. Is that correct?

Mr. NEWMAN. I believe you are referring to the 60 Minutes segment that aired on Sunday?

Ms. RICHARDSON. I am.

Mr. NEWMAN. Mr. Williams in that report does make reference to having seen rubber material, a handful of rubber material come across the shale shakers, which is a piece of equipment on the rig. But I would just inform the Committee that the piece of material that we are talking about is about 3 feet in diameter, it is about 18 inches tall and it weighs about 2,000 pounds. So a handful of small chunks in relation to that large piece of rubber I would characterize as almost immaterial.

Ms. RICHARDSON. I am going to repeat the question. My question was, it was reported that this had occurred. Were you aware that it was reported?

Mr. NEWMAN. The first indication I had of it being reported was having watched the 60 Minutes segment myself.

Ms. RICHARDSON. OK. And are you aware of any of your other staff that might have been advised of this issue?

Mr. NEWMAN. I am not aware of anyone else having been informed.

Ms. RICHARDSON. It has been also reported that there was a disagreement between BP and Transocean at the commencement of you guys beginning this in February and there was a staff meeting and there was a disagreement on whether to move forward. Did that occur?

Mr. NEWMAN. I am not aware of any disagreement at the commencement of the operation in February.

Ms. RICHARDSON. OK. I am going back to the 60 Minutes report that was this Sunday. They said that there was a meeting and there was a disagreement of how and when to move forward.

Mr. NEWMAN. I believe the disagreement that Mr. Williams was referring to took place on April 20th.

Ms. RICHARDSON. OK. So you aware that a disagreement did occur?

Mr. NEWMAN. The only indication I have of it is having watched Mr. Williams' segments on 60 Minutes.

Ms. RICHARDSON. Are you aware of whether a disagreement occurred or not, other than what you saw on 60 Minutes?

Mr. NEWMAN. That has been the only direct firsthand account I have seen of a disagreement.

Ms. RICHARDSON. And no one has said to you that this occurred?

Mr. NEWMAN. That is the only firsthand account I have.

Ms. RICHARDSON. No one else has said to you that this has occurred? First account, second account?

Mr. NEWMAN. I have hearsay references to it, but Mr. Williams' account on——

Ms. RICHARDSON. Have you heard other references, other than Mr. Williams?

Mr. NEWMAN. Anecdotal hearsay evidence of a disagreement.

Ms. RICHARDSON. Thank you. You have talked about, talking about BP now, you talked about a commitment for damages. One of the things that has been said in prior hearings was there was a little back and forth going on. Are you committed to paying for the damages, regardless of what independent disagreements you might have with some of the other companies that you work with?

Mr. MCKAY. Yes. I have testified and would like to make it clear again today, we are a responsible party under the Oil Pollution Act. We will fulfill our obligations. Blame, liability, those kind of things, whether it is between companies or whatever, we will figure that out. But we are a responsible party in that regard. So what I am saying is we are going to take care of it and we will deal with other things later.

Ms. RICHARDSON. Thank you, sir. Is it true that some of the cleanup workers are being required to sign a waiver?

Mr. MCKAY. No, I don't think so. Early on in the first few days when we were signing up boats a standard contract was used and it had some waiver language, and that was brought to our attention and we tore it up and there are no waiver stipulations in any of the things we are doing.

Ms. RICHARDSON. Have you notified those workers that that has been torn up and that is no longer——

Mr. MCKAY. I think it is obvious. I think that was fixed early on, I do.

Ms. RICHARDSON. Will you go back and make sure?

Mr. MCKAY. I will. I will.

Ms. RICHARDSON. Thank you. Why is there a disagreement between the total amount of oil that is leaking? BP has said 5,000, other reports are saying otherwise. Why do you think there is a disagreement, and do you stand by your point that it is only 5,000?

Mr. MCKAY. I think there are a range of estimates and it is impossible to measure. That is the reality. What we have been doing with government officials, government experts, industry experts, is trying to come up with the best estimate, and that has been done essentially by understanding what is happening at the surface and trying to understand volume there, adding to it what we believe the oil properties, how it would disperse in a water column as it moves to the surface. And those two added together is the estimated volume. It has been clear from day one there is a large uncertainty range around that.

Ms. RICHARDSON. Is it possible it could possibly be the larger number that has been reported?

Mr. MCKAY. It is theoretically possible. I don't think anyone believes it is quite that high that has been working on this. I believe the uncertainty range is around that 5,000 number, and it could be higher. But if the number you are talking about is 70,000 barrels a day, I don't know this, but I don't think people that are working with it believe that that is a possibility.

Ms. RICHARDSON. Mr. Chairman, could I ask my last question, please? Thank you, sir.

My last question, I have BP facilities in my district. I am in Carson, California. We also have offshore drilling right outside of my district. So this is an important issue. Let me just say, first of all, I appreciate you coming. I haven't heard you take the fifth, either one of you, and you very candidly answered the questions, and that is what we need.

My last question is what honest lessons could you say to us, to this Committee, that we could consider to do, whether it is legislation or regulation, to ensure that this never happens again?

Mr. MCKAY. I am sorry, I think it is early, but what I would say is the redundancy in the systems that are deployed, the capability of being able to intervene in a sub-sea environment, we are learning a lot. We are learning a lot. We have got to parlay those learnings as quickly as we can into whatever regulations should be and whatever industry capabilities should be. So I think it is early, but we are learning very quickly.

Ms. RICHARDSON. So you are not required to know that prior to having the ability to drill?

Mr. MCKAY. The response plans so far over the last 50 years have been, quite frankly, concentrated on surface response. As we have gone through this, we predicate a lot of the assumptions in the deep water around a blowout preventer that is working, or at least accessible, that you can get on top of it with another one, and that is not the case in this unique situation. I think we have to learn from that.

Ms. RICHARDSON. Thank you for being candid.

Thank you, Mr. Chairman.

Mr. OBERSTAR. [Presiding.] I thank the gentlelady.

The Chair is confused as to whether Ms. Edwards or Mr. Cohen was first.

Ms. Edwards.

Ms. EDWARDS. Thank you, Mr. Chairman, and thank you, gentlemen, for being here today. I just have a couple of questions that I want to center actually around the response plan, because I think it is actually related to the flow rate.

If your response plan is designed for kind of a worst case scenario of 250,000 barrels per day and if you go with what I think are conservative estimates of 5,000 barrels a day, you are probably at about 2 percent of your worst case scenario. So in fully implementing your response plan, is this the full implementation of your response plan for the Deepwater Horizon spill?

Mr. MCKAY. The subsurface and surface response plans are very aggressive. The response plans on the surface encompass and utilize plans that go all the way from aggressive treatment offshore, to shoreline protection, skimming and things like that, booming, and then go on to land as to how to clean up and how to deal with issues. So the response plan is aggressive. It is being flexed and deployed based on the characteristics of this oil and where the oil is going.

Ms. EDWARDS. But in this response plan, if you are fully implementing an aggressive response plan and we are only at 2 percent of a worst case scenario, what if the estimates are wrong and we are working at 5,000 barrels a day and they are closer to 70,000 to 80,000 barrels a day or more. What more can you do under the response plan that you have implemented?

Mr. MCKAY. Yes. Well, I think the response plan, the plan itself and what is being done is roughly the same, but it has to be deployed in different ways based on what the oil is going to do. The priorities would shift, obviously. The Unified Command, I think the Unified Command has made it clear that the response plan has considered worst case scenarios. In other words, it is not a response plan solely designed for 5,000 barrels a day. It is considered a wide range of uncertainty.

Ms. EDWARDS. I know. I guess I am just saying if you are implementing a full response plan at 5,000 barrels a day, which is 2 percent of your worst case scenario, I can't even envision what else could be done or deployed if we were seeing a greater spill than what you estimate.

Let me just ask you about the estimate and the calculation. Are you familiar with Professor Steven Worley at Purdue University?

Mr. MCKAY. I am only familiar through news reports in the last week or so.

Ms. EDWARDS. So I listened to him this morning and he saw the visual film that you all have now released at BP, and he said that originally he thought that it might be around 70,000 to 80,000 barrels a day. But upon looking at your film, which I can't figure out, and maybe you can tell us why if hadn't been released until now, he said he doesn't know what else the calculation could be, but it is considerably greater than what he had estimated, which is considerably greater than your 5,000 barrels a day.

Do you have any response to that?

Mr. MCKAY. I don't know the nature of his calculations. As the Chairman said earlier, there has been a task force put together to bring the best experts in the field to re-look at all the data, all the evidence, all the video, and come up with what is an independent, so-to-speak, look with all the experts.

All I can tell you is that our folks, the government folks and the independent industry experts have looked at this and have come up with the Unified Command estimate. In technology, there is a range around that and there is uncertainty.

Ms. EDWARDS. But I mean a range from 5,000 to 80,000 or more, if that was a leak at my house, I would say that is a pretty hefty range.

Let me just ask you this with respect to your liability. Are you saying that you are willing to pay whatever the liability is, even to the extent that it exceeds the $75 million cap?

Mr. MCKAY. Yes.

Ms. EDWARDS. Then, Mr. Newman, in your testimony you spoke earlier that where the explosion occurred, you pointed out that it wasn't in the casings, that it was after the drilling was complete. I can't remember whether that was Mr. McKay or Mr. Newman. But were you doing that because you are trying to draw a line as to where your liability might be?

Mr. NEWMAN. No, Congresswoman. I am just trying to help the Committee understand to the fullest extent possible right now the facts as we know them and how those facts might lead at least to a preliminary conclusion about what might have happened.

Ms. EDWARDS. Do the two of you agree that you are both jointly and severally liable for this spill?

Mr. NEWMAN. Under the framework that is established with the Oil Pollution Act, BP are the designated party, the responsible party, with respect to the hydrocarbon spill, and they have in the face of repeated questioning, they have asserted that responsibility, and they have acknowledged that.

Ms. EDWARDS. Then lastly, Mr. Chairman, if you would not mind, going back to the assessment, if you could just clarify for this Committee how you came to the assessment that the spill that is taking place is 5,000 barrels a day and how off or not you think you might be?

Mr. MCKAY. We will with provide that assessment.

Ms. EDWARDS. Thank you.

Thank you, Mr. Chairman.

Mr. OBERSTAR. Mr. Cohen.

Mr. COHEN. Thank you, Mr. Chairman. I apologize for missing part of the earlier part of the hearing. I am very interested and concerned as the citizens in my district and constituents all throughout the country on this issue and what it is doing to the flora and the fauna of the Gulf region. The entire United States of America will be affected by this, but particularly the Gulf States region, which borders my City of Memphis. New Orleans is like a sister city and we consider the Gulf Coast as part of our world, as part of all of our worlds. We need to be concerned. So if I ask any questions that have been asked before, I apologize.

First, I would like to ask, I guess, Mr. McKay, and Mr. Newman, if you know the answer, help me with it. This dome that you all came up with that you brought down after about 3 or 4 weeks and failed, when did you all come up with that concept?

Mr. MCKAY. That particular cofferdam, that particular one that has been modified was used in prior spills in shallow water.

Mr. COHEN. So it was not a unique process. It was just at the depth——

Mr. MCKAY. The depth is different, and the issue with it in terms of why it didn't work on first try was that hydrates formed.

Mr. COHEN. It froze. Right. Water got in there. Why didn't you have some study done on if that would have worked or done some research to see that it would have worked or precautions that would have made that work at depths of 5,000 feet, since you have wells at that depth and many more deeper? What was done before to make sure that would work?

Mr. MCKAY. Well, of course we don't know the specific fluid until the well is drilled, and we are still learning about the fluid. So that particular fluid is a very unique fluid in that it has very high gas and it has a propensity for forming hydrates at that depth.

Mr. COHEN. When you say fluid, you mean what is coming out of the Earth right now and polluting the Gulf Mexico?

Mr. MCKAY. Yes.

Mr. COHEN. Why didn't you try something—you took that fluid out of the Earth and you put it in your boats and you sold it. Couldn't you have used that fluid? Maybe I am wrong because I am not a chemist, but couldn't you have used that to test it and find out if it would work?

Mr. MCKAY. This particular well is the first well drilled on that structure ever. And what I am really trying to say is the fluid was unique, the technology was used in shallow water, it has not been used offshore in 5,000 feet of water. It was difficult to predict what hydrate formation with that fluid at that depth——

Mr. COHEN. There was no way to simulate it?

Mr. MCKAY. We did simulate it. In fact, we said we were worried about hydrates.

Mr. COHEN. And so you worried, but you didn't simulate it enough to know that there was a way to get around it. Let me ask you this.

You right now have a hose that you stuck in there and it is siphoning off whatever, 1,000, 2,000, whatever. When did you come up with that concept?

Mr. MCKAY. Within the first couple of weeks in terms of an idea.

Mr. COHEN. Why didn't you have this idea 2 years ago?

Mr. MCKAY. Well, we have a unique situation here. I don't think anybody could have predicted that we have a blowout preventer that didn't work, a lower marine riser package on top of it, 4,300 feet of riser that is damaged and trenched in the Gulf Mexico.

So what we had to devise was a system, we had to fabricate it and build it, that can fit inside that pipe with drill pipe inside it and rubber diaphragms that can help keep the water out. That is an entirely unique situation with where this leak is happening.

Mr. COHEN. Don't you think you should have envisioned the worst possible case scenario when you are dealing with an ecosystem that is unique and special and so important to the people, let alone the flora and the fauna, and shouldn't you have thought of the worst possible case scenario and prepared for it and had this type of technology on day one going down there? Why did you have to wait for a calamity to occur to come up with, oh, what should we do now?

Mr. MCKAY. Well, respectfully, I don't think we have been doing that. We have been working parallel paths since the first moments this happened, first to actuate the blowout preventer, if we could possibly do it. We worked for 10 days trying to do that. Parallel to that, and simultaneous——

Mr. COHEN. Mr. McKay, understand this. I am talking about a year ago. Why didn't you envision the worst possible case scenario, that all this stuff would happen and what do we do if there is a gap 5,000 feet down and this oil is just going out?

Mr. MCKAY. As I have said, we predicate that a blowout preventer is either going to work, can be manually intervened with if not, or can be approached if not. We have got a unique situation where we have had this thing on top of it that was supposed to release and it didn't. So therefore, we are having to engineering solutions that are in a very unique situation, a very unique situation, and I don't believe that could be predicted by anyone.

Now, what I would say is we are learning a lot through this, and I think the sub-sea capability and the generic and some of the specific capability the industry needs to put in place and the regulators need to look at, I believe we will learn through this and I believe we are going to need to do some of that.

Mr. COHEN. Can you assure me that the Atlantis rig that some think may be questionable and an exert engineer, I don't know if he used to work for you all or not, has questioned that it is secure and doesn't need some type of review?

Mr. MCKAY. The Atlantis is a production platform. There have been some allegations made that all the drawings weren't there. We did an internal study, and I understand, I haven't reviewed it in detail, but I understand all the drawings were there to safely start up and operate that platform, as well as meeting regulations.

The MMS is looking into that. We have done an internal investigation, an ombudsman's investigation, and the MMS is going to look into it, which we welcome and we will fully cooperate.

Mr. COHEN. Senator Inhofe said that if we increase from $75 million to $10 billion the liability of the major oil companies, that this would be a mistake because it would cause small oil companies not to be able to afford to do this type of work and he was concerned about them.

Are you also concerned about them and think it is a bad idea?

Mr. MCKAY. I have not had time nor have we talked internally about policy and limits. What we have said is in this incident, for us, we are going to fulfill our responsibilities as a responsible party. We believe that means in this case waiving that $75 million and standing behind all legitimate claims due to this that will impact the environment and the economy of the folks that are affected. So we have—I can't comment on specific legislation or specific caps.

Mr. COHEN. Thank you. I appreciate your attitude. You advertise BP and you have come before the Judiciary Committee and others at other times and talked about your green perspectives. I would hope you put more emphasis on your green work. It is obvious when we only use—we use 25 percent of the Earth's fossil fuels, and yet we only have the capacity to have 2 percent of them here. There is no way we can use fossil fuels to serve our energy needs in the future and do it safely. We need to look at wind and we need to look at solar, and we need to have BP be a leader in emphasizing that and moving on, where you won't have these types of catastrophes, you won't have these types of issues.

And God forbid something like this happens in the Arctic. I want to see your hose and I want to see your dome. It ain't going to work up there, and they are not going to be able to do things to preserve that environment. You have already ruined the Gulf. I don't want to see you ruin the rest of the world's oceans.

Come up with the worst possible case scenario and figure out a way to do it. And if you have to put a man in a tube and stick him down there, or a polar bear and teach him how to do it, you ought to do it.

Thank you, Mr. Chairman.

Mr. OBERSTAR. I thank the gentleman, and Mr. DeFazio has a few further questions.

Mr. DEFAZIO. Yes, a few quick follow-ups. There have been press accounts, and this is directed to either of you, but probably particularly to BP, and the allegation was that since you are paying $500,000 a day for the rig, it is sort of at this changeover time when you are cementing the well that there is a lot of pressure to get it done with and move on, and there were questions raised about the curing of the cement.

Who made the final call that the well was stable, the cement was cured, and you could start with basically shutting down the drilling, removing the drilling, those sort of things? Who makes that call? Is it Halliburton, is it BP or is it Mr. Newman's company? I assume it is either Halliburton or BP, but I am not sure.

Mr. MCKAY. What I would say is in terms of the procedure and when the procedure steps are done, the procedure is written by BP and the execution of that is generally by Transocean and other contractors. Many of these decisions are collaborative. I think it is going to be really important in the investigations to understand the timeline and every single step between when the positive and negative pressure tests were done, what happened after that, who was involved, what conversations were made, what information was available, how was it utilized. I think all of that has to be put together to put what is going to be a complicated jigsaw together.

I believe it can be, and I believe that is what has to happen.

Mr. DEFAZIO. Anything to disagree with there, Mr. Newman?

Mr. NEWMAN. As I said in my opening comments, Congressman, the process of drilling a well is a collaborative process that requires the expertise of a number of companies. Specifically with respect to the cement and the design of the cement, the formulation of the cement, the placement of the cement would have relied on the expertise of the cementing contractor.

Mr. DEFAZIO. [presiding.] That is something we will have to get to later.

Two other quick points. To Mr. Newman, there was on the 60 Minutes show we have heard a lot of, and you said you had seen it—there was apparently an employee from the rig who was on the show, appeared to be injured, and I was curious on this form where it says they were not a witness and I was not injured, was that individual required to sign this form since he was clearly injured? Because there is an allegation that basically people were kind of held hostage until they signed the form.

Mr. NEWMAN. Nobody was required to sign the form. There was no coercion. There was no force. I don't know whether Mr. Williams has signed one of those or not.

Mr. DEFAZIO. So there was no coercion whatsoever.

And finally, just an observation on Mr. Cohen, I think in looking at the—I don't think there are any small act, little mom-and-pop companies out there doing deepwater drilling. So we could have a liability cap which is more risk-oriented as opposed to one that is just a cap, which would mean the larger companies are doing perhaps more risky deepwater exploration and extraction, they have more resources, and they may be subject to a higher cap. So that may solve a mystery—I don't know how Mr. McKay would feel about that, but just a sort of a risk basis in terms of a cap.

Mr. MCKAY. To be frank, we are concentrating on dealing with this and trying to get this stopped.

Mr. OBERSTAR. [Presiding.] This will be your last series of questions. Thank you for your patience and for your capacity to endure this long without much of a break.

Mr. Newman, is the rig insured? Do you have hull insurance for construction costs?

Mr. NEWMAN. The company carries a comprehensive program of hull and marine insurance, yes. The rig was insured.

Mr. OBERSTAR. At something comparable to its $350 million construction cost?

Mr. NEWMAN. No. Similar to the kind of decision you and I would make about insuring a home. We don't insure our homes at the original construction cost; we ensure our homes at the market value. And the rig was insured at the market value.

Mr. OBERSTAR. And what was that market value?

Mr. NEWMAN. Five hundred sixty million.

Mr. OBERSTAR. Five hundred sixty million.

Can you explain to us why you are now in district court seeking to limit your liability under an 1851 law to $27 million?

Mr. NEWMAN. Two reasons behind the company's filing of the limitation of liability action. First and foremost, we were instructed to file by our insurance underwriters. In the immediate aftermath of this event, they instructed us to file that limitation of liability action, and so we did that to respond to their request and preserve the company's insurance program.

And secondly, with the number of lawsuits that have been filed against the company in various jurisdictions at the Federal level, at the State level, the limitation of liability action serves to consolidate all of those actions into one venue.

Mr. OBERSTAR. I will say it is appalling, having been in New Orleans over a 3-day period and seen the number of ads on TV, about every 20 minutes there is an ad from a law firm. Mr. Cao said there are numbers moving into Louisiana to file and pay people to sign up for legal services. So I can understand you are willing. But on the one hand, you have insured your rig to cover the company's costs; on the other hand you move to protect yourself against those who wouldn't be compensated anywhere near what the company would be under its insurance.

Mr. NEWMAN. Believe me, Chairman, if I could have the rig back and the 11 people back, that is clearly the decision I would make.

Mr. OBERSTAR. I understand. I understand. I just want to make that clear.

Mr. McKay, you said we couldn't have predicted—that is not exactly your words—the gas would escape, that the blowout preventer would fail, and we will learn from this, and we want you to learn from this. But in aviation, when an aircraft is operating at 5, 7 miles altitude, there is no curb to pull over, look under the hood and see what is wrong. It has to be right before it leaves the ground. At 5,000-foot depth, it's a comparable situation. You don't have the ability to send someone down in a rig to look at what is going wrong and fix it. You operate it with remote vehicles. You know that. You had the experience.

The Norwegians operate in similar depths. Their rigs are verified by a third-party entity that makes sure that all those safeguards are put in place. When an aircraft comes down from 35,000 feet to land at an airport, it is operating at roughly 165 miles per hour, very little margin for error. That is why the flaps are deployed, and the thrust reverser is activated, and then the brakes are applied. And if any one of those fails, or two of the three fail, the other is supposed to protect that aircraft and bring that aircraft to a halt.

It seems to me from my years of experience in safety investigations that there is not this kind of backup and redundancy at those depths in the ocean with those enormous pressures, with the temperature at roughly 30 degrees, which at freshwater would freeze, but saltwater can sustain that kind of temperature; that there is not the kind of safety mindset in underwater drilling that there is in aviation. Now, if you have a takeaway from this experience is that there needs to be, you need to have redundancy in those operations.

There is, I said it earlier, half of the seafood shellfish production of the United States in these 660,000 square miles of gulf. There are wave actions on the surface that I observed in the overflight. I have photos that were taken of it. There are underwater currents that often go in the opposite direction of the air currents. There is movement of the dispersant and of the oil, and its contamination of the sea life. It may be—in some cases it may be irreversible.

If you had, and your industry, and the American Petroleum Institute, and the Minerals Management Services and the Coast Guard had all been thinking about constructively how we operate safely at those depths under those pressures at those temperatures, we might have installed the protections.

Those are photos on the screen there that I took from Coast Guard aircraft. This is sobering and stunning, and, as Mrs. Miller said, takes your breath away to see the effects.

So I want to understand—I will just ask this one question—whether you have, you and Transocean together, have worked out a scenario of the redundancy of the blowout preventers at that depth and those temperatures, and if not, why not? And if you did and rejected it, why?

Mr. MCKAY. We have recommended or at least provided some ideas to the Department of the Interior Minerals Management Service that we would suggest: to recertify blowout preventers; to test in some additional ways and different ways; to relook at the design and see if redundancy, extra redundancy, should be built in. And a fourth thing is subsea capability and intervention capability for the industry and how that should be assembled. And that is what I would say that we think, right now, are improvement areas that could be looked at quickly.

Mr. OBERSTAR. Mr. Newman.

Mr. NEWMAN. I agree with Mr. McKay's assessment of actions that can be taken in the interim, but the real answer to the question is only going to be discovered when we complete all of the investigations.

Mr. OBERSTAR. We will leave it at that.

Those photos you saw passing on the screen were in the impact area in the gulf. Quite sobering.

Thank you very much for your testimony. Members will have follow-up questions. We expect your responses to them. Thank you.

Mr. OBERSTAR. Our next panel includes Lisa Jackson, Administrator of the Environmental Protection Agency; Dr. Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmospheric and NOAA Administrator; Elizabeth Birnbaum, Director of Minerals Management Service; Rear Admiral Brian Salerno, Assistant Commandant for Marine Safety, Security and Stewardship, accompanied by Rear Admiral Peter Neffenger; and Dr. Sylvia Earle, Explorer-in-Residence at the National Geographic Society. I have added her to this panel because she has a plane to catch, and I want to be sure we have her testimony.

Dr. Earle, you may take your seat at the end of the table.

I will ask this panel, as the previous panel, to rise.

With regard to the testimony that you provide to the Committee on Transportation and Infrastructure today and all subsequent Committee communications regarding this hearing, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

You're sworn in.

I will begin with Dr. Earle in recognition of her longstanding commitment to another event, and then she has to catch a flight, which is hard to do these days in Washington.

Dr. Earle, your testimony—I read all the testimony last night—is positively lyrical. I recall your presentation at an Aspen Institute Conference 12 years ago. I was enthralled by your love of the ocean environment, your grasp, your understanding, your intimate understanding, of it all. And there is a portion of your testimony that reminds me of Lord Byron's epic poetry in which he describes the ocean as deep, dark, heaving, mysterious and endless. Deep and dark it is; heaving when there is a powerful storm.Mysterious, we are beginning to understand the mysteries of the ocean thanks to your work and that of others. We are understanding that a calf sperm whale born at the same time of discovery of these oil wells can outlive them only if we let it. But endless, in Byron's words, it is not. You're going to describe for us the ends, the limitations. Please begin.

TESTIMONY OF LISA P. JACKSON, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY; JANE LUBCHENCO, UNDER SECRETARY OF COMMERCE FOR OCEANS AND ATMOSPHERE, AND NOAA ADMINISTRATOR, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION; S. ELIZABETH BIRNBAUM, DIRECTOR, MINERALS MANAGEMENT SERVICE; RADM BRIAN SALERNO, ASSISTANT COMMANDANT FOR MARINE SAFETY, SECURITY, AND STEWARDSHIP, U.S. COAST GUARD, ACCOMPANIED BY RADM PETER V. NEFFENGER, DEPUTY NATIONAL INCIDENT COMMANDER FOR THE DEEPWATER HORIZON OIL SPILL RESPONSE, U.S. COAST GUARD; AND SYLVIA EARLE, Ph.D., EXPLORER–IN-RESIDENCE, NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON, DC.

Ms. EARLE. Thank you, Chairman Oberstar, Members of the Committee, all assembled here.

We have seen plenty of bad news, bad news images relating to the Deepwater Horizon oil spill. With some images that will be shown while I speak, I want to illustrate that the Gulf of Mexico is not, as some believe, an industrial wasteland primarily valuable as a source of petrochemicals, a few species of ocean wildlife that humans exploit for food, for commodities and recreational fishing. There are other assets, and I hope we will soon be seeing some of them. They were documented during a 5-year project with the National Geographic, with NOAA and the Goldman Foundation, and a partnership, too, with members of about 50 organizations, industry and private institutions and others, dozens of scientists from around the country, who explored the coastline of this country from 1998 through 2003.

For more than 50 years, I have had experience on, around, under and over the Gulf of Mexico as a marine scientist and an explorer. I have started and led engineering companies devoted to the development of equipment for access to the deep sea. And I have served on a number of corporate and dozens of nonprofit boards, and, from 1990 to '92, served as the chief scientist of the National Oceanic and Atmospheric Administration and had an up-close and personal experience with the Exxon Valdez, Mega Borg spills, as well as extensive involvement with the evaluation of the environmental consequences of the 1990-'91 Persian Gulf spill. So, I really come to speak for the ocean.

The Gulf of Mexico, as a big blue body of water, is a trinational treasure better known perhaps for yielding hurricanes, petrochemicals, shrimp, and in recent years notorious dead zones than for its vital role in generating oxygen, taking and holding carbon, distributing nutrients, stabilizing temperature, yielding freshwater to the sky that returns as rain, contributing to the ocean's planetary role as Earth's life support system.

As with the ocean as a whole, the Gulf of Mexico is most valuable for those things that we tend to take for granted. At least we could take them for granted until recently. We now understand that there are limits to what we can put into or take out of this or any other part of the ocean without unfavorable consequences back to us.

Ironically fossil fuels have powered civilization to new heights of understanding, including awareness that the future of humankind depends on shifting to energy alternatives that don't generate carbon dioxide and otherwise cause planet-threatening problems. Think about it. Fossil fuels have taken us to the moon and to the universe beyond, made it possible for us to see ourselves in ways that no generation before this time could fathom, provided a backbone of the extraordinary progress we enjoyed in the 20th century and now into the 21st. But we now know that those of us alive have participated in the greatest era of discovery and technological achievement in the history of humankind largely owing to the capacity to draw on what seemed to be a cheap but by no means endless source of energy.

At the same time that we have learned more, though, we have lost more. Cheap energy, it turns out, is costing the Earth. Despite the enormous advances in knowledge, the greatest problem that we face now with respect to the Deepwater Horizon oil spill is ignorance, and with it complacency. It seems baffling that we don't know how much oil is actually being spilled. We don't know where the oil is in the water column. We can see from the surface. We don't know what is below the surface.

We haven't seen what it's actually like on the bottom at 5,000 feet in the Gulf of Mexico. We have glimpses. Some of the glimpses of what is in as much as 2,000 feet of water are being shown on the screens as I speak. But our access to the sea at this critical point in history is sorely limited.

I only have a few minutes for my remarks, so I'm going to skip through some of the testimony that I'm submitting for the written record and dive into some of the key issues that I want to focus on.

Many questions have been raised, and I will raise them again, about the use of the dispersants that really are more cosmetic than helpful in terms of solving the real problems. If I could speak for the ocean, I would say halt the use of subsurface—subsurface use of dispersants and limit surface use to strategic sites where other methods cannot safeguard critically important coastal habitats.

The headlines lament oiled birds; oiled beaches and marshes; oiled turtles, dolphins and whales, as they should. But where is the constituency concerned about oiled copepods, poisoned coccolithophorids, prochlorococcus, some of those creatures that are heavy lifters with respect to generating oxygen and driving food webs in the ocean, the diatoms, the jellies, the tetrapods, the squid, larval urchins, the eggs and the young of this year's vital offspring of tuna, shrimp and menhaden?

Not only is the unruly flow of millions of gallons of oil an issue, but also the thousands of gallons of toxic dispersants that may make the ocean look a little better on the surface where most of the people are, but make circumstances a lot worse under the surface where most of the life in the ocean actually is. Cosmetic clearers do not solve the problem. They are almost certainly making matters worse for life in the ocean.

Another issue, we should be prepared, and I gather that NOAA and others are responding to the need to deploy available subsurface technologies and sensors, as well as those at the surface, to evaluate the fate of the underwater plumes of oil as well as the finely dispersed oil and chemicals and their impact on floating surface forests of sargassum communities, life in the water column and on the sea floor.

There needs to be immediate gathering of baseline data, both broad and detailed, to measure impacts and recovery.

There must be salvage operations to restore the 40 or so species of affected large wildlife creatures and their habitats.

But perhaps at least as significantly, there must be initiatives to create large reserves in the gulf to facilitate recovery and ongoing health of the thousands of less conspicuous species and the marine ecosystems from the deepest areas to the shallow shores. It's urgent that large, permanently established areas in the Gulf of Mexico be designated for full protection from extractive activities. There are deep coral reefs as well as those such as the Flower Garden Banks, the closest shallow coral reef to where the present spill is taking place.

Protected areas are critically needed to safeguard important spawning areas for bluefin tuna, for groupers, snappers, sharks and even the wily species of shallow and deepwater shrimp. Aside from the importance of such areas for healthy ecosystems to survive, they are essential if fishing is to survive to continue as a way of life in the Gulf of Mexico. After all, is if there are no fish, there are no fisherman. And already owing to the heavy fishing pressure in the Gulf of Mexico, as in other parts of the world, the populations of fish that were around when I was a kid exploring the Gulf of Mexico are now depleted by as much as 80 percent, groupers, snappers; some species by 90 percent, such as the sharks, bluefin tuna and others.

Implementing and expanding a proposal called Islands in the Stream, a concept long ago proposed by NOAA for a network of marine protection in the gulf, would be a great place to begin.

There need to be better assessments of the economic impacts and the modes of compensation for the present oil spill and for future problems. The Harte Research Institute at Texas A&M at Corpus Christi has put a figure of known economic consequences at about $1.6 billion. That does not take into account the free services that are being affected, but for which compensation is not being proposed. But perhaps by suggesting that there be protected areas in the Gulf of Mexico as a way to restore and enable the ocean itself and life in the ocean to recover unimpeded by other impacts would be a good place to, in a sense, compensate the ocean for the problems that have occurred.

Surely we must make substantial investments in the development of technologies that can help solve the problems and assess the problems, investments in human-occupied, robotic and autonomous systems that go in the water, under the ocean, not just at the surface. There must be sensors and stations for exploration, research, monitoring and safeguarding the living ocean. When you think about it, the U.S. Coast Guard, NOAA, the EPA, and the Navy, they all have aircraft, they all have ships. But what is in the national fleet that will take us under the sea? We have already this year seen the loss of two underwater systems that are not being supported any longer by the Harbor Branch Oceanographic Institution, the Johnson-Sea-Links, that for years have provided access down to 1,000 meters, 3,000 feet or so, since the 1970's. The Alvin submersible, the workhorse of the submersibiles for scientific exploration since 1964, is about to be retired. It will be retired before its replacement is ready to go.

Meanwhile, Japan, Russia, China and France have systems, manned systems, that can go and make observations to at least half the ocean's depth. And no nation has a system that can go back to full ocean depth, a visit there to a place only once in 1960, 50 years ago, for about half an hour in the Mariana Trench.

How many systems can go to 5,000 feet with human observers? Right now it's a handful, and only the Alvin in this country really qualifies. The Pisces subs have been in that league, but we are woefully unprepared to send anybody down to just take a look to be able to evaluate with more than just a camera system, as good as they are.

And where are the facilities that you can pull off the shelf for the Coast Guard to go down, for example, to evaluate on their own, not necessarily relying on industry-provided systems? Industry does have a fleet of remotely operating systems. They need them for inspection, for monitoring, for maintenance and repair. But the ocean itself needs to have an understanding that is currently lacking for lack of the technology investment.

We put billions into what takes us into the skies above, and it is paying off handsomely. We have neglected the ocean, and it is costing us dearly. So perhaps this is a wake-up call, the mighty two-by-four, to alert us to the needs to seriously commit to the technologies for going deep into the sea.

We need to embark on expeditions to explore deepwater as well as the near shore and shallow water systems in the Gulf of Mexico and elsewhere in our coastal waters. If you look at the Nation's exclusive economic zone, it's larger than all of the rest of the United States put together. There is another whole country out there underwater, and a lot of it is in deepwater, presently inaccessible by means that we have at our disposal.

Consider back to the Coast Guard, and there is an agency that we call upon when there is an emergency, but it is not only not being provided with adequate technologies to deal with what goes on under the surface of the sea, but to see a budget cut this year, while the other agencies in the military have received boosts. It doesn't seem reasonable, especially in light of the needs that are growing.

Speaking like an ocean, speaking for the gulf, we need to encourage trinational support and collaboration among scientists and institutions around the gulf; to invest the good minds that are there; to come up with solutions that are not just divided by national borders, Mexico, Cuba and the United States, but really take into account the entire system. We need to mobilize those good minds to address solutions such as the Gulf of Mexico summit that took place 5 years ago to help launch a regional governance body of U.S. and Mexican States. A new summit is being planned by the Harte Research Institute to take place later this year to address next steps to ensure that an economically and ecologically healthy Gulf of Mexico can be developed in future years.

Cuba is a country that some of us have been worrying about with respect to the possibility of oil spills heading north as exploration and drilling are picking up in that country, and now they are faced with worries about the consequences of this major spill from the United States heading south.

And while we are investing in rapid expansion of safe energy alternatives that do not result in the release of carbon dioxide, new standards of care need to be implemented for industries extracting oil and gas from the Gulf and elsewhere in U.S. waters. Think about it. The public needs to know what actually it is like out there in the deep waters of the gulf where activities are taking place. Thorough documentation of the nature of the sea floor showing those deep coral reefs, showing the nature of life in the water column, in the whole area around where operations are taking place should be made public before operations such as drilling, establishing platforms, and laying pipeline and so on take place, and the changes in the environment measured and made publicly available. It's not that we shouldn't be doing these things, but we should know what the costs really are. The environmental issues need to be taken into account and be the basis, when necessary, for excluding operations in order to protect vital environmental concerns.

Mr. OBERSTAR. Dr. Earle, I'm going to have to limit you to 1 minute, in your own interest. So you can——

Ms. EARLE. Well, it's not enough time to touch on all the concerns, but the biggest problem boils down to complacency that comes from ignorance. We are pointing to BP, Transocean, to Cameron, to government agencies, anywhere we can for blame. But actually the blame for this and other catastrophes or costs related to our demand for cheap energy is something that all of us need to bear. We all must share the cost of those who demand cheap oil at any price.

The loss of human lives, the destruction of the life-giving gulf simply cannot be justified as an acceptable cost of doing business. But if we really do go forward with a commitment to do things differently henceforth, we will have gained something of enduring value.

We must do better about thinking like an ocean and thinking on behalf of those who will benefit or suffer from the consequences of our actions. Cheap energy is not only costly in terms of human lives lost, it's also costing the Earth, so to speak. It's clearly costing the ocean.

Thank you.

Mr. OBERSTAR. Thank you very much for a very moving and compelling testimony, the only voice for the ocean that we will hear. And I am so in harmony with your views about looking in outer space for life and water. I frequently refer to that. We spend several billion dollars looking for water on Mars. We started out looking for water on the moon, and recently I watched a Science Channel project on Europa, one of Jupiter's moons, where it is speculated to be water below the surface, and finding some sort of space vehicle that will go down and plunge into that, into that subsurface, and find there is water.

And that raises the next question of whether there is life in that water. We have got it right here on Earth. It's right in front of us, right at our doorstep in the gulf, 660,000 square miles of it, and you illuminated the bacteria, phytoplankton, zooplankton, microorganisms that make a rich life environment, but yet within that ecosystem we have lost numerous species.

What will be the effect of this spill? Much of it will be beyond our vision, beyond the human eye or even ability to detect, as you have so well described it. And your reference corrects it, the dispersant approved by EPA to make the ocean look better, but as you say, it warns—there is a warning that it's a skin and eye irritant, and it's harmful if you inhale it. It will cause injury to red blood cells, kidney or liver. There are 15 of these dispersants approved by the National Contingency Plan. To the best of your knowledge, has any of these dispersants been tested on the flora or fauna of the gulf waters?

Ms. EARLE. I'm not aware that they have or have not.

Mr. OBERSTAR. What is your best scientific guess that if these—if the organisms, those upon which higher life depends, are exposed to this substance, what happens to them?

Ms. EARLE. That is a question that should be addressed. The kinds of tests that are typically done are on specific kinds of animals. I have not seen the reports of the very list that is now been approved, but the reports on the dispersants used for the Exxon Valdez suggest that it's not good for contact with humans; it's not good for contact with creatures that live in the sea.

Mr. OBERSTAR. At the briefing in the command center, we were told that it takes roughly 4 hours for the oil to make the journey from the bottom, from the mud at the bottom of the sea floor to the surface. The dispersants are being injected at the spewing point of the well. But the dispersants take only 2 hours to get to the surface, and there is speculation by Admiral Landry and others in the command center whether the dispersants really are having an effect upon the oil column as it rises to the top if it's getting up there faster than the oil.

Ms. EARLE. I think the problem is that we are dealing with speculation. We need some real answers. And not to know is not acceptable. We need to be able to access the water column, to go out and see for ourselves both with remote systems, with cameras, if you will, and ideally to be able to go in small submersibles, go out to where the action is, go into the water column, observe what's happening, sample what's there. Right now, because of the ignorance factor, it's easy to gloss over what actually may be happening.

Mr. OBERSTAR. Very sobering thoughts. And there are other questions I would like to explore with you, but I know you have to catch a flight. I'm going the ask Mr. Cao for any comments or questions he might have.

Mr. CAO. Dr. Earle, really my concern, like yours, centers on the effect of the dispersants on the wildlife as well as on some of the species, as you said in your report. But as of right now, the only data that you actually have are the ones from the Exxon Valdez and none other?

Ms. EARLE. Other information is available. It's not available to me as I speak here, but the role of dispersants across the board is to break the oil up into smaller pieces. Some of the chemicals used for this are more toxic than others, but none of them are exactly a recipe for good health for creatures who live in the sea.

Mr. CAO. You mentioned that we have to invest in creating, inventing new deepwater submersibles.

How far are we if we were to invest money to develop such a vehicle that can go down to the deepest part of the ocean floor?

Ms. EARLE. The technology exists. Woods Hole Oceanographic Institution deployed this past year, in 2009, a remotely operated system that went to full ocean depth, 7 miles down, on nine different occasions. The cost of deploying it is expensive, and it is the only one in the world that exists. So the technology is there. There are no human-occupied systems that can go to full ocean depth, although the technology exists. It did exist 50 years ago.

Consider where we were with aviation and space technologies 50 years ago as compared to where we are today with access to the sea for us and for our instruments, for our sensors. We've come a long way. But when an issue of this nature comes up, why do we not have off-the-shelf capability for the Coast Guard, for NOAA, and for others who might be able to not just go out and help with the evaluation of what is happening, how can we not know how much oil is being released? How can we not know the size of the problem? We are dealing from the surface to try to assess what is largely a subsurface issue. And what about tracking and following the aftermath, and where is the before evidence?

Actually, investment has been made by scientists over the last half century in trying to understand how many kinds of creatures live and where they live in the Gulf of Mexico and elsewhere. A new volume just came out in 2009 that was the result of efforts by more than 100 scientists. They found well over 15,000 species of organisms living in the Gulf of Mexico. These were in a volume that is about 5 inches thick, and that has just been published by Texas A&M, and it is evidence of what's there. But we need some baseline data that very specifically looks at what was it like before the spill? What is it like now? What will it be like this time next year? This time 10 years from now? What can we learn from it? And what actions can be taken to restore health to the areas that have been affected? Not just compensation for the fishermen or for the loss of revenues to today's business operations throughout the Gulf of Mexico, but what about the loss to the gulf itself? That will be paid far down the line for future generations as well as present ones.

Mr. CAO. Thank you, and I yield back.

Mr. OBERSTAR. Mr. Cummings.

Mr. CUMMINGS. Mr. Chairman, I will be very brief.

Dr. Earle, thank you very much for your—all of your efforts and for your work over the many years. And I'm sure as I listen to you, I couldn't help but think that when you hear about these plumes and you think about this 5,000 to 70,000 barrels of oil going into the ocean on a daily basis, that must make your heart ache, I'm sure. And as I saw the pictures there, I just—I guess there is absolutely no doubt in your mind that substantial damage probably already has been done. Do you think so?

Ms. EARLE. What is amazing to me is that the gulf is as resilient as it has been in the face of thousands of wells that have been drilled, and that operations, the shipping on the surface, the heavy, large-scale fishing operations that have taken place, there is still plenty of reason for hope. The ocean is still resilient. And the Gulf of Mexico is almost a laboratory of resilience to show how some of these sophisticated operations can take place side by side with the productive kind of ocean system, not what it was 1,000 years ago or even 100 years ago, but still a viable productive system.

But there are limits to what we can get away with and still have fish prospering, still have the spawning area for the western Atlantic, in the western Gulf of Mexico. There are such things as going too far. We killed the last of the monk seals that once prospered as far north as Galveston, Texas, all gone from the Gulf of Mexico and Caribbean Sea. They were killed largely for their oil and for their meat, treated as commodities.

Mr. CUMMINGS. One other thing, and then I will be finished, Mr. Chairman.

You had spoken about the Coast Guard, and I'm Chairman of the Subcommittee that oversees the Coast Guard. And you are absolutely right. At this critical moment, there's no way that we should be cutting the Coast Guard budget, and the Chairman has been very adamant about that. And on a bipartisan basis, we have been advocating to make sure that we have those funds. But.

We are also—and I have been just pushing to try to make sure that the Coast Guard is even more a part of the process of overseeing some of these situations so that hopefully they will—this kind of thing will—if it happens, we can address it more effectively and efficiently and quickly. But I really appreciate, and I'm sure the Coast Guard appreciates, your comments.

And with that, Mr. Chairman, I will yield back.

Mr. OBERSTAR. Thank you.

Mr. Coble.

Mr. COBLE. No questions, Mr. Chairman.

Mr. OBERSTAR. Mr. Duncan.

Mr. DUNCAN. No, thank you, Mr. Chairman, but I know we need to get on to the other witnesses, so I'm fine. Thank you.

Mr. OBERSTAR. And Mr. Shuler passes.

Dr. Earle, we thank you very much for your insights, for your understanding, for your love of the ocean and for the lyricism of your presentation. You may be excused.

Ms. EARLE. Thank you.

Mr. OBERSTAR. Administrator Jackson, it is great to have you with us. Thank you for your leadership in so many arenas, the EPA, and restoring its voice and its compass in leading us toward a clean environment.

Ms. JACKSON. Thank you, Mr. Chairman. To Chairman Oberstar, Ranking Member Mica and Members of the Committee, thank you for inviting me to testify about EPA's role in responding to the BP Deepwater Horizon rig explosion.

But first let me express my condolences to the families of those who lost their lives in that explosion. We owe them our very best efforts, whether it be in the response or in the investigation.

While there is no perfect solution to the environmental disaster that the Gulf of Mexico is facing right now, EPA is committed to protecting our communities, the natural environment and human health. That commitment covers both the risks from the spill itself as well as any concerns resulting from the response to the spill.

In the last 3 weeks, EPA has dispatched more than 120 staff, scientists, engineers and contractors to Alabama, Florida, Louisiana and Mississippi to perform rigorous testing and monitoring of air and water quality. We are tracking any possible adverse impacts stemming from controlled burning of surface oil, possible chemicals rising from the oil itself and issues caused by the use of dispersants. We are working with State officials, with local university scientists and other Federal agencies to get the best available data, share that data in a timely fashion, and to ensure proper response for the Gulf Coast people and their environment.

At the President's direction I have personally traveled to the region, the region I grew up in and still consider home, twice over the past weeks to personally oversee EPA's efforts and to meet with the local community to ensure their questions and concerns are addressed.

For weeks EPA responders have been monitoring air pollutants, including particulate matter, hydrogen sulfide, and total volatile organic compounds, or VOCs, from the oil in the gulf as well as the controlled burning of that oil. These pollutants could pose a health risk to local communities, and this monitoring is essential to ensure that communities are protected as BP takes direct response actions.

EPA is also monitoring water quality by conducting surface water testing along the Gulf Coast, both in areas that have been impacted and those not yet affected. All of this information is being made public as quickly as we can compile it. We have been posting regular updates to our Web page, www.epa.gov/bpspill, which has been a critical resource since the beginning of this event.

Our primary concern is to ensure the safe application of chemical dispersants, oil dispersants or chemicals applied to the spilled oil to break down the oil into small drops below the surface. Ideally, dispersed oil mixes into the water column and is rapidly diluted. Bacteria and other microscopic organisms then act to degrade the oil within the droplets. However, in the use of dispersants, we are faced with environmental trade-offs. We know that surface use of dispersants decreases the environmental risk to shorelines and organisms at the surface. And we know that dispersants break down over weeks rather than remaining for several years as untreated oil might. But we are also deeply concerned about the things we do not know. The long-term effects on aquatic life are still unknown, and we must make sure that the dispersants that are used are as nontoxic as possible. We are working with manufacturers, with BP and with others to get less toxic dispersants to the response site as quickly as possible.

EPA has previously authorized use of several dispersant chemicals under the National Contingency Plan. In order to be placed on this list, each dispersing chemical must undergo a toxicity and effectiveness test. However, I am increasingly concerned that EPA can and should do more.

As we emerge from this immediate response, I commit to reviewing the regulations regarding dispersant registration and listing and sharing the results of that work with this Committee.

On Friday, EPA and the on-scene coordinator authorized the application of dispersant underwater at the source of the leak. The goal of this novel approach is to break up and degrade the oil before it reaches the water's surface and comes closer to our shorelines, our estuaries and our fish nurseries. Based on our testing, this can be done by using less dispersant than is necessary on the surface.

But let me be clear that EPA reserves the right to halt the usage of subsea dispersant if we conclude that at any time the impact to the environment outweighs the benefit of dispersing the oil.

As with our other monitoring initiatives, EPA and the Coast Guard have instituted a publicly available monitoring plan for the subsurface dispersant application to understand impacts to the environment. This data is coming to EPA once a day. And if the levels in the samples are elevated, EPA will reconsider the authorization of dispersants.

EPA is also preparing to support any necessary shoreline assessment and cleanup by identifying and prioritizing sensitive resources and recommending cleanup methods. EPA, in coordination with the States, will continue to provide information to both workers and the public about test results, as well as assisting communities with potential debris disposable and hazardous waste issues.

Chairman, as a native of New Orleans, I know firsthand the importance of the national environment to the health, economy and culture of the Gulf Coast. As I mentioned, since the accident I have been to the region twice. I have listened to people in numerous town halls from Venice, Louisiana, to Waveland, Mississippi, and other communities in between. I have learned in those meetings that the people of the Gulf Coast are eager to be part of this response. They want to be informed and, where possible, empowered to improve their own situation on their own.

We have a great deal of rebuilding to do both in material terms and in terms of restoring this community's trust that government can and will protect them in a time of need. This is one of those times. I urge that we do everything within our power to ensure a strong recovery and future for the Gulf Coat.

EPA will continue to fully support the U.S. Coast Guard and play a robust role in monitoring and responding to potential public health and environmental concerns. As local communities assess the impact on their economies, EPA, in partnership with other Federal, State and local agencies, will provide all assets to assist in the recovery.

At this time I will welcome any questions you have.

Mr. OBERSTAR. Thank you very much for your presentation.

And, Administrator Lubchenco, I compliment you on your presentation on the News Hour the other evening. I thought you answered the questions exceedingly well with great balance and apparent command of the subject matter. You may proceed.

Ms. LUBCHENCO. Thank you, Mr. Chairman, and thank you for the opportunity to testify before this Committee on the Department of Commerce's National Oceanic and Atmospheric Administration's role in the response to the BP Deepwater Horizon oil spill. I especially want to focus on the critical roles that NOAA serves during oil spills and the importance of maximizing our contributions to protect and restore the resources, communities and economies affected by the tragic event.

I would like to begin by expressing my condolences to the families of the 11 people who lost their lives in the explosion and sinking of the Deepwater Horizon. This is indeed a difficult time, and our thoughts are with them.

NOAA's mission is to understand and predict changes in the Earth's environment; to conserve and manage coastal and marine resources to meet our Nation's economic, social and environmental needs. NOAA is also a natural resource trustee and is one of the Federal agencies responsible for protecting and restoring the public's coastal natural resources when they are affected by oil spills or other hazardous substance releases. As such, the entire agency is deeply concerned about the immediate and long-term environmental, economic and social impacts to the Gulf Coast and the Nation as a whole as a result of the BP Deepwater Horizon oil spill.

NOAA's experts have been assisting with the response from the beginning of this spill, providing coordinated scientific, weather and biological response services. Offices throughout the agency have been mobilized, and hundreds of NOAA personnel are dedicating themselves to assist. Over the past few weeks, NOAA has provided 24/7 scientific support to the U.S. Coast Guard in its role as Federal on-scene coordinator, both on scene and through our Seattle operations center.

This NOAA-wide support includes twice-daily trajectories of spilled oil, information management, overflight observations and mapping, weather and river flow forecasts, shoreline and resource risk assessment and oceanographic modeling support.

NOAA has also been supporting the Unified Command in planning for open-water and shoreline remediation and analyses of various techniques for handling the spill, including open-water burning and surface and deepwater application of dispersants. Hundreds of miles of coastal shoreline were surveyed to support cleanup activities. NOAA's National Marine Fisheries Service is addressing issues related to marine mammals, sea turtles, seafood safety and fishery resources, which includes the closure of commercial and recreational fishing in oil-affected portions of the Federal waters in the Gulf, and updating the dimensions of the closed area as necessary to ensure fisher and consumer safety without needlessly restricting productive fisheries in areas that are not affected by the spill.

As the lead Federal trustee for many of the Nation's coastal and marine resources, the Secretary of Commerce, acting through NOAA, is authorized, pursuant to the Oil Pollution Act of 1990, to recover damages on behalf of the public to address injuries to natural resources resulting from an oil spill. The Oil Pollution Act encourages compensation in the form of restoration, and this is accomplished through the Natural Resource Damage Assessment process by assessing injury and service loss, then developing a restoration plan that appropriately compensates the public for the injured resources. NOAA is coordinating the damage assessment effort with the Department of the Interior as a Federal co-trustee, as well as the co-trustees in five States and representatives for at least one responsible party, BP.

The event is a grave reminder that spills of national significance can occur despite the many improvements that have been put in place since the passage of the Oil Pollution Act.

Although the best remedy is prevention, oil spills remain a grave concern given the offshore and onshore oil infrastructure, pipes and vessels that move huge volumes of oil through our waterways. To mitigate environmental effects of future spills, responders must be equipped with sufficient capacity and capabilities to address the challenge. Response training and exercises are essential to maintain capability. Continuous training, improvement of our capabilities, maintenance of our capacity, and investments in high-priority, response-related research and development efforts will ensure that the Nation's response to these events remains effective. Training and coordination with other Federal, State, and local agencies that might have response and restoration responsibilities is critical to success in mitigating efforts of future spills.

There are a number of improvements to our ability to quickly respond to and mitigate damage from future spills that would benefit the Nation. One such activity is increasing our response capacity. If another large spill was to occur simultaneously at another location in the U.S., NOAA would have difficulty providing the level of response expected. We would be happy to identify specific activities in research and development that would increase the effectiveness of oil spill response.

From the outset, our efforts have been aggressive, strategic, and science-based, and I would like to assure you that we will not relent in our efforts to protect the livelihoods of Gulf Coast residents and mitigate the environmental impacts of this bill.

Thank you for allowing me to testify on NOAA's response efforts, and I'm happy to answer any questions.

Mr. OBERSTAR. We really appreciate your testimony. Thank you very, very much.

Ms. Birnbaum, Minerals Management.

Ms. BIRNBAUM. Thank you, Mr. Chairman, and Members of the Committee, for the opportunity to testify about the Minerals Management Service requirements regarding oil spill response plans.

Before I begin my testimony, I want to express how saddened I and all MMS staff are over the tragedy that began with the loss of life on April 22 on board the Deepwater Horizon and continues with the oil spill as we speak.

Many of MMS's employees have worked their entire careers in an effort to prevent this kind of thing from happening, and we will not rest until we determine the causes so we can do everything possible to reduce the risk of its happening again.

All leasing operations on the Federal offshore are governed by laws and regulations designed to ensure safe and environmentally sound operations. The authority for MMS to regulate oil spill planning for offshore facilities is derived from the Oil Pollution Act of 1990 and Executive Order 1277. MMS regulations require that all ocean operators of oil's handling, storage or transportation facilities submit an Oil Spill Response Plan, or OSRP, to MMS for approval. Under the regulations, an offshore lessee is required to submit an OSRP to the MMS for approval before or at the same time as submitting an exploration plan or development plan for review.

The OSRP must outline the availability of spill containment and cleanup equipment and trained personnel. It must assure that full response capacity can be deployed during an oil spill emergency. It must also include provisions for varying degrees of response effort, depending on the severity of the spill.

MMS reviews and approves these plans every 2 years unless there is a significant change that requires that the plan be revised immediately. Changes that would trigger a review include a change to the plan that significantly reduces the ability to respond, or a change in the worst case discharge scenario.

BP's regional OSRP that covered the Deepwater Horizon was first issued in December, 2000 and last revised on June 30, 2009. This regional OSRP anticipated a worst case discharge scenario of 250,000 barrels per day. BP's estimate for the worst case discharge in the exploration plan for the well being drilled by the Deepwater Horizon was up to 162,000 barrels per day. Because that worst case discharge estimate for this particular facility fell below the levels indicated in BP's regional OSRP, BP was not required to submit a site-specific OSRP.

MMS also requires training on OSRPs to make sure that spill management team members, oil spill removal organizations, spill response operating teams and other contractors are familiar with the plan. Training includes annual training on spill reporting procedures, deployment strategies for response equipment, oil spill trajectory analysis, and any other skills needed to respond to a spill.

To test an operator's preparedness, MMS conducts unannounced exercises. MMS prepares a spill scenario using data from the operator's approved plan and then, without notification, initiates the drill by contacting the predesignated point of contact. The operator must fully mobilize its emergency response staff, making all required notifications and taking simulated real-time actions as if it were an actual event taking place.

MMS may also require the deployment and operation of major spill response equipment, such as ocean-going spill vessels or dispersion aircraft. In the Gulf of Mexico region, MMS conducts 12 to 15 such exercises annually. Since 1994, MMS has conducted six unannounced oil spill drills involving BP. The most recent drill on November 20, 2008 included deployment of a skimming vessel that is currently deployed to respond to the current spill.

MMS also maintains Ohmsett, the National Oil Spill Response, research and Renewable Energy test facility in Leonardo, New Jersey, where operators may train in oil spill recovery under varying conditions. Ohmsett is the only facility in the world where full-scale oil spill response equipment testing, research and training can be conducted ina marine environment with oil under a controlled array of wave and oil conditions. The facility provides an environmentally safe place to conduct objective testing and to develop devices and techniques for the control of oil spills.

Mr. Chairman, this concludes my prepared statement. I would be happy to respond to any questions.

Mr. RAHALL. [presiding.] Thank you for your testimony.

I understand our next two witnesses are going to split their time; is that correct?

Admiral SALERNO. We will go quickly, sir.

Mr. RAHALL. All right, Admiral. You may proceed.

Admiral SALERNO. Thank you, Mr. Chairman and distinguished Members of the Committee. I appreciate the chance to appear before you, together with my colleague, Rear Admiral Neffenger, who is the Deputy National Incident Commander. The two of us will discuss the loss of a mobile offshore drilling unit, Deepwater Horizon, and the ongoing response to the spill.

In my role at Coast Guard headquarters, I oversee the strategic integration of operational missions and the development of policy for mission execution, so it is from that perspective that I appear before you today.

This event, of course, began with a fire and explosion onboard the Deepwater Horizon. The Coast Guard is, among many other things, a life-saving service. Saving lives is at the core of who we are. And so on behalf of the Coast Guard, I would like to also express our sincere condolences to the families of the 11 workers who did not survive the event.

I would also like to acknowledge, in grateful appreciation, the swift response of the crews of the offshore supply vessels who were operating in the immediate area; in particular, the motor vessel Damon B. Bankston, an offshore supply vessel operated by Tidewater Marine who recovered the bulk of the survivors that evening.

Coast Guard aircraft and cutters conducted searches of the area lasting several days, and despite our best efforts, none of the missing crew members were recovered.

The Deepwater Horizon itself was a foreign flag mobile offshore drilling unit; however, the crew was compromised of U.S. citizens as is required for operations on the Outer Continental Shelf. It was also required to have a Certificate of Compliance issued by the Coast Guard before it was allowed to operate. The most recent Certificate of Compliance was in 2009 and was due to remain in effect until 2011, and there were no outstanding safety deficiencies.

The Coast Guard shares jurisdiction with the Minerals Management Service in the regulation of offshore activities. In essence, the Coast Guard has the lead for the rig, the vessel part of the system itself, whereas the Minerals Management Service focuses on the drilling portion and the vital equipment associated with drilling.

We have yet to establish the reasons for the casualty. To understand what has happened, the Coast Guard and MMS are jointly conducting a Marine Board of Investigation. The investigation will look into the adequacy of Federal regulations as they pertain to mobile offshore drilling units and Outer Continental Shelf activities.

With respect to the oil response, this is a spill of national significance. Since the mid-1990's, the Coast Guard and other Federal agencies have conducted exercises every 3 years based on spill-of-national-significance scenarios to make sure we have the right framework and capabilities to manage a spill that requires a whole-of-government approach.

Coincidentally, the most recent exercise occurred one month prior to the Deepwater Horizon casualty. Many of the Coast Guard and interagency personnel who participated in that exercise are now engaged in the actual response.

Nevertheless, there is much to learn from this casualty. The Coast Guard intends to charter an incident-specific preparedness review to focus on the adequacy of the contingency plans and response efforts. Such a review is common after a major incident and is used to improve preparedness for future events.

Thank you, Mr. Chairman. I look forward to your questions.

Admiral NEFFENGER. Good afternoon, Mr. Chairman, Chairman Cummings, and distinguished Members of the Committee.

As Admiral Salerno said, I am the Deputy National Incident Commander for the Deepwater Horizon Gulf oil spill to Admiral Thad Allen, who is the National Incident Commander and was appointed as such following Secretary Napolitano's designation of this as a spill of national significance.

The role of the National Incident Commander, under SONS declaration, is to coordinate national policy, ensure the provision of necessary resources, facilitate collaboration between Federal, State and local governments, and to coordinate strategic communications throughout the whole-of-government.

I have a written statement which I will submit for the record, and I will keep my comments brief in the interest of our split time.

When the Deepwater Horizon sank on April 22, it generated an ongoing event of unprecedented complexity. With the spill emanating at a depth of 5,000 feet of water, we are operating where there is no human access, and where we must depend upon remotely operated vehicles and tools for extensive efforts to stem the flow and source of the spill.

As you have heard, to meet this challenge there is a very large organization, Unified Command, which has been stood up at the local, regional and national level, and all of these initiated a massive response to this spill. That is led regionally by the Federal on-scene coordinator, Rear Admiral Mary Landry, and, as I mentioned, nationally by Admiral Thad Allen as the National Incident Commander.

The Unified Command implements the area contingency plans, which include response strategies, organizational responsibilities previously agreed upon by stakeholders, and prioritized cleanup sites and protection areas for booming and prestaging of other resources. And these resources are directed to appropriate areas, depending upon projections of the spill. Trajectory is based on forecasted winds, currents, and sea states. And of course it requires modeling and monitoring on scene, which we do with our colleagues from NOAA and the EPA.

BP is the responsible party, and they are responsible to respond with sufficient oil spill response capability. As noted, they are responsible for cleaning up the oil, remediating the damages, and restoring impacted natural resources. As the Federal on-scene coordinator, the Coast Guard ensures that BP meets their obligations by providing constant oversight and direction, and in addition, we will continue to monitor the BP claims process to ensure it is robust and fair.

The efforts on this response have been extensive and without precedent. As of today, we have recovered over 7.8 million gallons of oil-water mix, applied, as you've heard, nearly 600,000 gallons of surface dispersants, over 53,000 gallons of sub-sea dispersants, deployed nearly 1.4 million feet of boom, staged another 382,000 feet of boom, and there is another 1.4 million feet on order and arriving shortly, with over 20,000 people and some 1,000 vessels responding.

We understand the impacts of this spill on the Nation and the local communities. I have personally visited the Gulf region and spent many days over the past few weeks overflying the spill sites, meeting with local officials and local affected populations, and observing firsthand the efforts being undertaken in the various command posts to protect environmentally sensitive areas and local communities.

Through the National Incident Command we will continue coordinating the aggressive whole-of-government response to this spill while ensuring that BP meets their obligations. This includes the recent establishment of a working group of scientists and experts to determine accurately the flow rate and total volume of oil that has been spilled both to date and expected, and that will be guided by a peer review process as well.

Mr. Chairman, thank you for this opportunity, and I welcome any questions you may have.

Mr. RAHALL. The Chair wishes to thank the panel for their testimony. In a bit of housekeeping, we do have a series of votes on the House floor, but I understand you, Administrator Jackson, have to leave, so I would like to ask—you do too, Dr. Lubchenco? OK. Well, then, maybe we can do this very quickly, and then ask the other three if they would come back for Members that have left to vote but I know are coming back to ask questions.

Administrator Jackson first, thank you for having your top staff in Charles Town, West Virginia last night on the Spruce mining permit. I'm not going to ask you anything on that. I couldn't tell who they disliked more, EPA or me, but I appreciate that. It was a chance for people to have their voice heard.

Let me ask you, many of the response actions taken to date, such as the use of dispersants and surface skimming, which you have testified to already, and the placement of floating booms are essentially the same techniques that were deployed during the response to the Exxon Valdez spill over 20 years ago. We certainly don't expect our military to fight wars with weapons that are outdated and designed 20 to 30 years ago, so why should we expect our Federal agencies to respond to oil spills that use outdated techniques and equipment?

Ms. JACKSON. I couldn't agree more with the sentiment, Mr. Chairman, which is that we, as I've been putting it, our ability to extract this oil and use it has far outpaced the investments that we've made in dealing with response and preparedness.

Mr. RAHALL. Any of the panel wish to answer that question?

Ms. LUBCHENCO. Mr. Chairman, I would wholeheartedly agree with what Administrator Jackson said; it's clear that the techniques that we are using today have really not advanced significantly, and it would be well worth an investment to bring those into the modern age.

Mr. RAHALL. All right. You know, it doesn't take a rocket scientist to tell us that something went drastically wrong here in this situation. Now it may take a rocket scientist to tell us how to plug this well, but obviously something went terribly wrong. So I guess I would ask a general question to the panel: Has deepwater exploration for oil gotten too big too fast for its safety britches? How can we ensure that an oil spill of this scale and magnitude never happens again?

Ms. BIRNBAUM. I'll try responding to that. I don't think that we'll know for sure what happened here until we can actually pull the BOP stack and determine—the end of the investigation is going to rely on an engineering review of that as well as the review of witnesses, and so on, that has already begun. And until we know that, we won't really understand what's gone wrong here. We are conducting a massive safety review. The President asked Secretary Salazar to spend 30 days looking on what are interim safety measures that we can institute in order to make deepwater drilling safer. We are in the process of working on that. The Secretary will get that report to the President on May 28. In the meantime, the Secretary has suspended the issuance of new drilling permits for new wells in deep water pending the completion of that report.

And so we are examining that safety question. We believe it can be made safe. We know that the Nation relies on the oil that we get from the Gulf of Mexico. We are going to do everything possible to make it safe and reduce the risk.

Mr. RAHALL. As you know, my other hat is Chairman of the Natural Resources Committee, which we will be having our hearings next week and the Secretary will be our lead-off witness. I've requested numerous documents from you and from the Secretary and still awaiting a response from those requests as well. But that's another issue before our Committee on Natural Resources, so we'll wait until then.

As time is short, let me ask—yes, Mr. Cummings.

Mr. CUMMINGS. Mr. Chairman, I will be very brief.

First of all, thank you all for being here.

Ms. Jackson, thank you very much. I was just down in New Orleans and Port Fourchon over the weekend, and they were very complimentary of your agency's efforts. You don't usually hear those kinds of things, but I just wanted you to know that.

I completely agree with your statement that the people of the Gulf Coast want to be informed of the impact of the spill, and I applaud the commitment of the administration about openness with regard to this spill. On the last panel, questions were asked of BP on its commitment to openness, which is a real key question.

Can you provide the Committee with the assurance that you will provide and compel, as to the extent that you can, BP to provide all tests and monitoring results taken in relation to this spill?

Ms. JACKSON. Sir, I'ma bsolutely happy to. And I also suggest maybe you want to hear from the National Incident Command. Any data that EPA has, whether we compile it ourselves or it comes into our possession because we've directed BP to compile it, I've directed my staff that we are going to put it up on the Web site and make it available. We can't always do that as timely as people would like because we have to go through lab analysis and whatever, but that is our commitment.

And I have also said and believe that one of the things BP can and must do is make all of the data that it is being compelled to take publicly available. That is data it is taking as part of the response and will need to be made available.

Mr. CUMMINGS. Just one other quick question. My colleague from Maryland, Ms. Edwards, and a number of Members have asked questions about the amount of oil being spilled. And it struck me that it seems that you all have to rely to a degree on what BP is telling you. I'm just trying to figure out, I mean, do you feel like you are getting the necessary information that you have to get from BP to do your job? Because I can easily see how they could underestimate various things and go to the lower end as opposed to a higher end. And I just want to know, are you all satisfied with the kind of information you are getting from them?

Ms. JACKSON. I would say, in general—let me just say to start, EPA and estimating the flow of oil, that's not within our area of expertise. There are people on the panel who can speak to that specific issue.

I think that one of the lessons learned from this is that, in this idea of a unified command, we are directing them to do things and we are working to get a job done, but we have a different responsibility, as government agencies, to make sure we do that with transparency and that people have a right to know and understand what we know as we can give it to them.

So I don't direct BP directly, that happens through the Commander. And I have an infinite amount of respect for Admiral Neffenger and Commander Thad Allen, but I do think that we need to understand that structure better because people turn to the government and want to understand that structure.

Mr. CUMMINGS. Mr. Chairman, thank you very much. I will direct that to our other witnesses later on.

Mr. RAHALL. Mrs. Napolitano.

Mrs. NAPOLITANO. Thank you, Mr. Chairman. And it's good to see some of the people that we've met before. Thank you very much, Mr. Chair.

One of the questions that I brought up to the prior panel is something that is very bothering to me, and I understand there may be some information that you might have, Ms. Birnbaum, in regard to the number of wells that are in deep ocean, how many permits have been issued, whether they are being reviewed, checked out for any possible leaks. Have there been any incidents? How deep are they? Where are they? So that there is an ability to be able to understand much more of what's happening in the oceans that we may or may not know could have a catastrophe in the future.

Ms. BIRNBAUM. Thank you, Mrs. Napolitano.

We define deep water as anything over 1,000 feet below sea level. There are nearly 2,000 total wells in deep water at this time; I have 1,988 as of yesterday. Not all of those are exploration wells of this type. Many of those are production wells which are producing oil, which have a very different set of risks. Exploration wells are inherently a little more risky than production wells.

We have conducted, at the direction of the Secretary of the Interior, an emergency inspection of all of the drilling rigs working in deep water. We did that within 2 weeks after the Deepwater Horizon incident.

Mrs. NAPOLITANO. How deep?

Ms. BIRNBAUM. I don't know what the deepest one is drilling at; I have to say I do not know.

Mrs. NAPOLITANO. Can we get that information for the Committee?

Ms. BIRNBAUM. We will get that for you.

Our inspectors found a couple of incidents of noncompliance, which is not unusual on an inspection. We've corrected those. We have now begun a separate sweep of all the deepwater production platforms, which take longer because they're more complicated facilities and there are more of them. We expect that that will be completed in July, and we will have done a full sweep of everything operating in deep water.

Mrs. NAPOLITANO. Deep water up to—do you have any others going beyond the 5,000 range?

Ms. BIRNBAUM. Yes. They do operate deeper than 5,000. Again, I don't know the deepest facility that there is.

Mrs. NAPOLITANO. Would there be an ability to be able to identify them, where they are at and what their status is?

Ms. BIRNBAUM. Absolutely. We have huge databases of that. We'd be happy to provide that to you.

Mrs. NAPOLITANO. Well, Mr. Chair, I would certainly want to find out where they're at and what condition they're in and who's responsible for them in case anything were to happen, and then of course what we can do to be able to ensure their safety to protect our coasts and coastlines.

The Coast Guard has done a great job, and I know that for years you have operated under very difficult circumstances. I've been a number of times looking at the age of your—I want to say a yacht, but I'm not a seagoing person. To me, anything other than a rowboat is a big boat. But somehow we may be failing to ensure that our Coast Guard has the sufficient infrastructure to deal with the many issues. Is this going to be deterring from your delivery of the services for the rest of the needs that you cover?

Admiral SALERNO. Ma'am, as you mentioned correctly, a lot of our ships and aircraft are quite old, and the Coast Guard has embarked on a very aggressive recapitalization program to replace those older vessels, as alluded to by Chairman Oberstar earlier. There are new ships being built. Two new ones have joined the fleet within the last 2 years; additional ones are on the way now being built. We will go through a period of time where some capacity is coming offline and it's not a one-for-one replacement. But it is part of an overall program to replace that aging infrastructure.

The capabilities that we are using in the Gulf right now, we feel we do have the right capabilities in place to manage the current spill.

Mrs. NAPOLITANO. Is that for certain?

Admiral NEFFENGER. What I would add is that if this spill—when you surge the number of people you have to surge for a major event like this, it challenges any agency over an extended period of time. So the challenge for us would be, if this were to go for an extended period of time, is the long-term sustainability and the capacity to sustain this over a long period of time.

Mrs. NAPOLITANO. Certainly we want to hear about if there is a need for additional assistance. And Ms. Jackson, I want to thank you personally for the great work that your district in the West does for us in other areas.

So thank you, Mr. Chairman, I yield back.

Mr. RAHALL. Mr. Johnson, do you have any questions of Dr. Lubchenco or Administrator Jackson?

Mr. JOHNSON OF GEORGIA. Yes, Mr. Chairman. May I be recognized?

Mr. RAHALL. Yes. We are out of time on the floor, but we still have 152 that have not voted.

Mr. JOHNSON OF GEORGIA. Thank you.

Administrator Jackson, what is the EPA's role in understanding the deepwater oil slicks that news reports indicate may be an enormous environmental problem? And how complete is the EPA's understanding of the size and number of these oil slicks as well as their potential effect on the environment?

Ms. JACKSON. Sir, in the interest of time, I will defer to Administrator Lubchenco because EPA has a very small role in marine environments. If this spill had happened on land, EPA would actually be running the response unless the President appointed a commander, as he has done here with the Coast Guard. But in terms of the science, they are science advisers, especially on issues of where the oil is or where it might go.

Ms. LUBCHENCO. Congressman, would you like me to respond?

Mr. JOHNSON OF GEORGIA. Yes.

Ms. LUBCHENCO. I think it's fair to say that we've mobilized all of our resources to track all of the oil and understand where it is. It's much easier to do that at the surface than it is to understand where the oil is below the surface. And this is an unprecedented event in that regard. There is much less of the oil at the surface. So it's a challenging issue. And what we are doing is tackling it in three different ways. We are running a series of oceanographic models of how the water moves at different depths in the Gulf to understand where the oil is likely to go at different depths, both when it comes up from the leak as well as the oil that might have been submerged with dispersants. So models to understand where it's likely to go, number one.

Number two, we've been deploying aircraft, our P-3 NOAA aircraft to drop instruments into the ocean that take data on the way down to give us a better sense of what's happening at different depths.

And three, we've been mobilizing research ships to go out and physically take data, deploy instruments, and get a better sense. We're in the early stages of doing that, and we do not have a comprehensive understanding as yet of the full extent of where that oil is, but we are devoting all possible resources to understanding not only where it is, but what its impact might be.

Mr. JOHNSON OF GEORGIA. Does the amount of oil flowing from the breaches affect your analysis of the oil beneath the surface?

Ms. LUBCHENCO. No, Congressman, they don't. It is important for us to understand what the total volume of flow is, but both the mitigation efforts as well as our efforts to analyze where it is are not contingent upon a precise estimate. From the outset, we've assumed that the spill is significantly large, and without specific, really concrete precise estimates, we've made every effort to hope for the best, but deploy resources assuming it's a lot larger.

Mr. JOHNSON OF GEORGIA. Thank you.

Mr. RAHALL. Thank you, Administrator Jackson and Dr. Lubchenco. We appreciate you being with us.

Ms. Birnbaum and Admirals, we understand you will be back. You will hold with us, and Chairman Oberstar will be back after these votes.

The Committee stands in recess. Thank you.

[Recess.]

Mr. RAHALL. The Committee on Transportation and Infrastructure will resume its sitting. And the gentleman from North Carolina, Mr. Coble, is recognized.

Mr. COBLE. Thank you, Mr. Chairman. Good to have you all with us today.

Admiral Salerno, you are the Assistant Commandant for Marine Safety, Security, and Stewardship. This, as you know, was a position created by the Commandant in 2007 to integrate marine safety and security into everyday actions of the Coast Guard's day-to-day activity. How has this position helped, if it has helped, to facilitate the response to the incident before us?

Admiral SALERNO. Good afternoon, Congressman Coble.

I would say, sir, that when we moved away from our previous organizational construct where we had a Chief of Operations and Chief of Marine Safety, we really broke down some longstanding stovepipes within our organization. We now have better mission integration, and I think one of the tangible results of that is our ability to manage large incidents. We have really spread out knowledge and awareness of the incident command system throughout the Coast Guard. We have people from different specialties within the Coast Guard who can contribute in a coordinated way to a large whole-of-government approach which 10 years ago would have been far more difficult to do. So I think there has been a tangible increase in our competency to do that as a result of this reorganization.

Mr. COBLE. And I don't believe, Admiral, I elevated you to your proper standing. I think you have been promoted since I last talked to you, were you not?

Admiral SALERNO. Actually, my position has changed, sir. I still have the same rank, but as of last week I moved out of the Assistant Commandant for Marine Safety, Security, and Stewardship; I am now the Deputy Commandant for Operations.

Mr. COBLE. Congratulations to you.

Admiral SALERNO. Thank you, sir.

Mr. COBLE. Admiral, is the Coast Guard adequately funded through the Oil Spill Liability Trust Fund to conduct oil spill response, research and development?

Admiral SALERNO. Well, sir, we do receive some funding on an annual basis from the Oil Spill Liability Trust Fund. For 2010, that amount—I have the number here—was $500,000. That is a reduction of what has been appropriated and passed. However, we are not limited by that amount; we can use other sources of funding from internal sources to help fund oil spill research.

In addition, we do chair an interagency Committee on oil spill research, and there are 13 other Federal agencies that participate in that Committee. It's called ICCOPR, the Interagency Coordinating Committee on Oil Pollution Research. And so some funding is available from other agencies.

Mr. COBLE. I got you.

Rear Admiral Neffenger, I'm not meaning to omit you, you feel free to weigh into this as well.

I have two more questions, Mr. Chairman, if I may.

Admiral, when do you expect the original $100 million transfer from the trust fund to be exhausted?

Admiral NEFFENGER. Well, as you know, speaking of the emergency fund provisions, we had $50 million that was originally available to us, we asked for the one-time authorization for the $100 million transfer, we received that. At the current burn rate, we expect to exhaust that in the next 16 days.

Mr. COBLE. Sixteen days?

Admiral NEFFENGER. Yes, sir.

Mr. COBLE. Finally, do you have financial resources in place to adequately carry out the Federal response?

Admiral NEFFENGER. Well, I think we have a legislative proposal that the administration has submitted to the Hill which would seek to allow for additional $100 million transfers for purposes of Federal response operations during an oil spill. Barring that being approved or barring the legislation allowing for that, we would have to turn to our operating expenses for our own costs.

Mr. COBLE. I thank you, gentlemen. Ms. Birnbaum, I didn't mean to ignore you, I had the Coast Guard questions in mind.

Thank you, Mr. Chairman. I yield back.

Mr. RAHALL. The gentleman from North Carolina, Mr. Shuler.

Mr. SHULER. Thank you, Mr. Chairman.

Director Birnbaum, under NEPA, if you look at how it's structured, and specific to the oversight and the challenges we now face in the Gulf, should we revisit some of the drilling permits that maybe coming forth in the Arctic based upon the disaster that has happened in the Gulf?

Ms. BIRNBAUM. Under the National Environmental Policy Act, we are required to examine the environmental impacts of any major Federal action; certainly, oil and gas leasing is a major Federal action. We have conducted many environmental impact statements before we get to the point of an individual well drilling decision. We conducted an EIS on the full 5-year plan for oil and gas drilling; we have conducted EIS on lease sales in the Gulf and then separately in Alaska. We also conducted some separate environmental impact reviews on drilling in a particular area—the Mississippi Canyon here in the Gulf.

When we get to the point of deciding on an exploration plan for a particular permit, we are under a statutory obligation, under the Outer Continental Shelf Land Act, to make a decision within 30 days. That very much limits our ability to conduct environmental reviews. Many of our environmental reviews are categorical exclusions. We review that to determine whether there is some trigger for us to do a full environmental assessment, which we did, actually, on exploration plans for Arctic drilling. But we are still limited to that 30-day decision, and we have to still make a decision on whether or not to go forward with an exploration plan within 30 days, which limits the amount of environmental review we can conduct.

In the package that the administration sent up to provide additional appropriations, we also asked to lift that limit in the Outer Continental Shelf Lands Act to allow 90 days or more to provide a more full analysis of exploration plans before drilling.

Mr. SHULER. Considering what has happened in the Gulf and the mistakes that were made, will that impact your decision to allow the permitted drilling in the Arctic to continue, do you feel?

Ms. BIRNBAUM. The administration, at this point, is not issuing any permits to drill new wells while we reexamine safety overall in light of this accident and provide a report to the President, actually, on what additional safety measures might be required.

Conditions in the Arctic are different from the Gulf in many different ways, but we certainly will be looking at all of that before making any decisions on further permits to drill.

Mr. SHULER. Commandant, do you feel that because of what has happened in the Gulf, and obviously having the services of the Coast Guard readily available, if this would have happened in the Arctic, the Alaska region, would you be able to have the same type of response time and the manpower that is needed to be able to take care of a disaster such as this one in the Gulf?

Admiral SALERNO. Well, sir, the Arctic poses some unique challenges. It logistically would be far more difficult to mount a response on this scale. Also, some of the techniques that are being used in the Gulf really need to be evaluated for their effectiveness in the Arctic. That is in fact one of the focal points of our interagency R&D effort.

We have been in consultations with the Arctic Council on that, and this summer we intend to deploy our icebreaker, the Polar Sea, for a joint pollution response exercise with Canada to test equipment and command and control capabilities in the Arctic. But the bottom line, it would be extremely difficult and far more challenging than in the Gulf of Mexico, where a lot of that oil field capability and response capability already resides.

Mr. SHULER. Thank you.

Mr. Chairman, I will yield back.

Mr. RAHALL. Ms. Birnbaum, may I ask you a couple of questions? The MMS policy is to inspect an oil rig at least once per month?

Ms. BIRNBAUM. That is correct.

Mr. RAHALL. And according to press reports, the MMS conducted 16 fewer inspections since January, 2005 than that policy requires?

Ms. BIRNBAUM. I believe that that's a report that was describing the number of inspections we've conducted on the Deepwater Horizon itself since 2005. Inspections don't take place when a rig is not on a well, if they are moving between or if they are constructing maintenance, or whatever. So you wouldn't expect to see monthly inspections at those times.

In addition, it's a policy, but we occasionally don't manage to make a monthly inspection because of weather. Our inspectors have to fly out to rigs in helicopters, and weather can prevent that if you're up to the end of the month and there is bad weather for a week. And I believe that actually last winter there may have been one or two inspections missed because of bad weather during the winter.

Mr. RAHALL. So there are rigs that are not being inspected by MMS, and you're saying because they're not on a well?

Ms. BIRNBAUM. There are times when they're not on a well, and there are times, again, on occasional inspection, although we certainly get people out to them as soon as we can when weather clears.

Mr. RAHALL. Do you have information as to how many are not being inspected?

Ms. BIRNBAUM. It depends on whether or not they're currently drilling. We know at all times what rigs are currently drilling wells. At the time when they are currently drilling a well, we will inspect them once a month. At any given time, there may be more than one rig that is not. For example, right now, actually, there are a couple of them tied up with the support for the response to Deepwater Horizon that wouldn't be inspected until they were there.

Now, we have definitely inspected the DD2, which is going to begin drilling the next relief well, but while it was moving, that would not be.

Mr. RAHALL. But for those rigs that are on wells in which inspections are not conducted due to weather, as you've just suggested, you would have account of that.

Ms. BIRNBAUM. We would have account of that, and we would get out to them as soon as we could when weather cleared.

Mr. RAHALL. OK. According to the International Regulators Forum, a group of offshore regulatory bodies, the U.S. reported five major loss of well control incidents in 2007 and 2008. Five other countries—Great Britain, Norway, Australia, Canada and the Netherlands—had no such incidents. What is different about their method of regulating safety of offshore drilling than the way safety is conducted by MMS?

Ms. BIRNBAUM. We work with other countries and we consult on safety measures on offshore drilling. We have established MOUs with several other countries, including Norway, to discuss safety methodology. I don't know the particular incidents and I can't describe what happened in them, so it's very difficult for me to say, but we are currently reviewing all of our safety policies. We're determined to make the United States the safest place in the world in offshore drilling. And we will be reviewing all such incidents to determine what we can do to prevent such things from happening in the future.

Mr. RAHALL. Over the past 5 years, for example, an offshore oil well worker in the United States has been four times more likely to be killed than a worker in Europe and 23 percent more likely to beinjured. Why is this, and what more needs to be done to protect workers?

Ms. BIRNBAUM. We actually conducted an extensive analysis of all offshore accidents, including loss of well control, including, actually, all the incidents of noncompliance we found with our regulations, and so on, for the last 10 years. That work culminated in the draft of a new safety management rule that we published as a draft rule last June. What we discovered was that most of the accidents were not the result of technological shortfalls in our regulations but actually were the result of accidents and sort of human process safety practices.

So this is a new regulation that will require all offshore drilling to have safety and environmental management systems in place that would be audited that would ensure that those kinds of human errors were less likely to occur because of safety systems. That rule was published in draft last June. Comment period closed in September. We believe that that rule, once it was in place, would eliminate, we estimated, approximately two-thirds of all accidents offshore.

Mr. RAHALL. Just before I recognize Mr. Taylor, you see what we're trying to do here, as I'm sure you would agree, we all recognize that all forms of energy production, such as coal mining in my area, where we just lost 29 coal miners, has inherent risk, but that does not mean we're going to cut off mining coal any more than it means we're going to cut off drilling for oil, nor does it mean we're going to be 1,000 percent effective in stopping any accidents in the future—that's impossible—just as we're not going to be 1,000 percent effective in stopping all terrorist attacks—but we must do a better job, bottom line.

Ms. BIRNBAUM. I agree with you completely, Mr. Chairman.

Mr. RAHALL. And we must do the best we can to protect life.

Ms. BIRNBAUM. We are determined to find every way we can to reduce risk offshore.

Mr. RAHALL. Thank you.

The gentleman from Louisiana.

Mr. CAO. Thank you very much, Mr. Chairman.

Ms. Birnbaum, a couple weeks ago the President said he wants to stop the cozy relationship between Federal agencies and the oil industry. Was there a cozy relationship between MMS and the oil industry?

Ms. BIRNBAUM. There was a report from the last year of the Bush administration that indicated that there had been some serious ethical breaches at the Minerals Management Service Royalty Management Group, not actually the group that does offshore regulation. We have taken every step to improve ethics at MMS since then. The people who were found to have an ethics problem were disciplined and dismissed. We've established stronger ethics standards at MMS. We require every employee to take ethics training now. And we are determined to find any other problems out there.

The Secretary, however, has also identified what I think is an inherent tension in the Outer Continental Shelf Lands Act which requires us both to promote the orderly development of our offshore oil and gas resources and at the same time guarantee environmental and safety systems. And so he has determined that a proper way to avoid the problems that might be created by that tension in the law is to split the organization. Actually, this afternoon he just announced that he will be splitting the offshore management into two separate bureaus in order to eliminate any potential for conflict there.

So I believe that we have addressed this potential conflict, although I have to say that I believe that almost all of MMS's 1,700 employees are in fact ethical.

Mr. CAO. Were any of the ethical issues related to the Deepwater Horizon?

Ms. BIRNBAUM. No. None of the ethical issues that were found were related to Deepwater Horizon. They were all related to the royalty-in-kind program, which is part of the royalty management system which collects funds from both offshore and onshore oil and gas. The Secretary also completely eliminated the royalty-in-kind program due in part to the excessive involvement with industry practices that were involved in the operations of the royalty-in-kind program.

Mr. CAO. What procedures have you implemented since the Deepwater Horizon to better inspect oil rigs in the Gulf and other areas?

Ms. BIRNBAUM. The Secretary immediately ordered us to conduct a full safety inspection of all deepwater drilling rigs with a special emphasis on inspection of the blowout preventers. We conducted that inspection within about 2 weeks after the incident. At this time, we are now conducting a further full inspection of all deepwater production platforms. That will take us longer because they are more complicated and there are more of them. So we anticipate that that full inspection will be completed in July.

Mr. CAO. I know that a moratorium was put on new permits for leases for 30 days, and that has negatively impacted the people who are not involved in deepwater drilling. Is there any way to revisit the moratorium?

Ms. BIRNBAUM. The Secretary has ordered that we not issue any further permits to drill new wells pending the delivery to the President of his interim report on additional safety measures that might be taken. That will be completed on May 28. In the meantime, I believe there may be some minor disruptions, but that is for a short period until we determine what the right path forward is at this time.

Mr. CAO. I know that many of the oil companies who drill in shallow waters where they are using different equipment, where they can access the blowout preventer are saying that the moratorium is putting them out of business.

Ms. BIRNBAUM. I'm sorry, I haven't heard that. I'm sorry to hear that.

Mr. CAO. Can you look into that issue, if you don't mind?

Ms. BIRNBAUM. Certainly will. It's a short-term measure then to simply put a pause button until we can figure out what the right next steps are, but I will certainly look into that.

Mr. CAO. Because what they were telling me is that they have to drill wells in order to keep the cash flow going. And if they cannot do that because of the moratorium, that obviously going to put them into a tremendous economic risk. Not to say that they should not be also—to do it very safely.

Ms. BIRNBAUM. I will look into it.

Mr. CAO. My question to the admirals is, you were here when Dr. Earle from National Geographic was talking about deep sea submersibles. Do you believe that the Coast Guard needs deep sea submersibles to address future oil spills?

Admiral SALERNO. Sir, just as a general statement, I think the capabilities that are really needed for a spill of this magnitude and this depth really reside within the private sector. We have nothing in our inventory that would allow us to do anything differently or better than what the private sector can bring to bear.

As to the use of ROVs, we do have some limited ROV capability within the Coast Guard inventory. We have used them for forensic evidence.

Mr. CAO. Let me ask you a quick question; if, based on retrospect, based on the oil spill in the Gulf that occurred from the Deepwater Horizon, was there a time when you said, gosh, I wish I had this, I wish I had that because if we were to have it, we would have been able to do something about it? What would be your wish list?

Admiral SALERNO. Well, I think that's something we really need to delve into. I will tell you, sir, that in looking throughout the Federal inventory, we are in direct communications with the Department of Defense and looked at what capabilities they may bring to bear. And quite honestly, they did not have anything with the unique characteristics necessary to address this spill that would have been better than what was resident within the private sector. So we did look far and wide for what was in the private sector. If there were a capability within the Federal Government, we certainly would have used it.

Mr. CAO. And I'm sorry, my time is up, but if you would allow me just one very quick question.

What would be that capability? What is that capability you are looking for?

Admiral SALERNO. Well, again, in this case, sir, we needed a capability that could perform operations on a blowout preventer. The Federal Government isn't in the business of drilling. We don't operate blowout preventers. We really needed to rely on the private sector for that very precise capability in this case.

Mr. CAO. Thank you, and I yield back.

Mr. RAHALL. The gentleman from Mississippi, Mr. Taylor.

Mr. TAYLOR. Thank you, Mr. Chairman. And thank you all for sticking around. We've had the Armed Services markup today.

Admiral, it really struck me—number one, let me commend Captain Ed Stanton for the work that he has done in trying to make the best of a terrible situation, between the booms, the disbursements—he was handed a really bad situation and has tried to make something that's really terrible less bad. But one of the things that the average citizen would really be surprised at—and has been surprised at—is they thought of booms, both the containment booms, the assortment booms, and even the collection booms, it took a while for it to sink into the general public that they're only good to about one knot of current and about three-foot seas. Going back to 1971, that technology really hasn't changed much in 40 years. I think those were the same numbers 40 years ago when you ran me through Yorktown.

So my question is, I realize that the Oil Pollution Act of 1990 was passed and a lot of things that were in place then, a lot of the technologies that were in place then are still being used. What I think is missing—and I understand that there will always be those who said if we forced you to upgrade the booms in the absence of a spill, somebody would scream foul, that why are you making them spend money in the absence of a spill? But now that it has happened, has the Coast Guard looked around to NOAA or the Navy or anyone in the private sector and identified a better boom? Because, again, you can't collect—less than one knot of current with three-foot seas, you can't collect it and burn it unless you have less than one knot of current and three-foot seas. And you can't contain it unless it's one knot of current and three-foot seas. And all of those things are not the norm in the Gulf of Mexico, nor would they be the norm off the Atlantic or Pacific Coast.

So have there been advances in boom technology that we have not taken advantage of or mandated to those companies that are in the business of responding to a spill?

Admiral SALERNO. Sir, I am not aware of any technology that hasn't been taken advantage of. I would agree with you that the technology really hasn't changed all that much. There is, as Ms. Birnbaum indicated, a test facility in Leonardo, New Jersey that looks at new capabilities. I think there may have been some minor, incremental changes, but nothing of an order of magnitude that we would all like to see.

Mr. TAYLOR. Ms. Birnbaum, at the hearing in New Orleans Captain Wynn had a really profound statement when he said, referring to the blowout preventer, it was designed to industry, manufactured by the industry, and installed by the industry, with no government witnessing or oversight of the construction or installation. I don't mind the private sector designing it, I have no problem with the private sector building it, I have no problem with the private sector installing it. What I do have a problem with, if that is true, is that no one from your agency really has the expertise to see if it's going to work. Is that true? Because Captain Wynn sure implied that in his statement.

Ms. BIRNBAUM. I do not believe that that is correct.

Mr. TAYLOR. OK. Why don't you correct it for the record?

Ms. BIRNBAUM. We have more than five pages of regulations actually covering what a blowout preventer must do. In addition, we do inspect them. We don't inspect them at every time that the operator tests them—we require them to test them every 14 days when they are in operation—but we do inspect them when they are visible on the rig deck, and we do have people with capacity to inspect them and determine whether they're in working order. Our inspectors also review the logs of the tests that go on in between their visits to the rigs.

Mr. TAYLOR. The questions that were raised by Congressman Stupak as far as either the dead or missing battery, the leaking hydraulics, would you address those at this time? Because it doesn't sound to me, if that is true, that you folks were doing your job.

Ms. BIRNBAUM. I really cannot speak to those matters because those are matters that are subject to the current investigation. There are a lot of rumors going on. There is that information, there is the information that everybody saw on 60 Minutes, or I read the transcript of. All of that information is part of the ongoing investigation, and we don't yet know what happened. We don't yet know exactly what was wrong with the blowout preventer. And I have to say that I have personally stayed away from the details of the outcome of the investigation because it is required to be an independent investigation.

So I can't tell you what has been discovered and what is determined to be true or false. We won't really know until that stack is pulled and is basically reverse engineered, is examined to determine what's going on with it.

Mr. TAYLOR. Ma'am, for the record, if you can't do it now, how do you check a battery being there or being alive or dead when it's 5,000 feet down? And I appreciate that all hydraulics leak a little bit, so it's the degree of the leak and how much it affected the ram. How do you test that at 5,000 feet down?

Ms. BIRNBAUM. We do require testing, as I said, every 14 days while it's on the sea floor, and they are required to pressure it up. That should indicate if it's operational. However, we are also looking at the question of whether there ought to be additional test procedures that we would require, and we are examining all of that, as I said, in addition to safety precautions that we will consider, and the Secretary may recommend further testing as part of his recommendations to the President. We are looking at all of that.

Mr. TAYLOR. Do any countries require two blow-out preventers? Do any mandate a redundancy?

Ms. BIRNBAUM. Not that I know of.

There has actually been some information about what other countries require, and just to clarify, we don't know of any nation that actually requires an acoustic trigger, which a lot of people have suggested that Norway or Brazil or Canada requires. We've inquired with their regulatory bodies because we didn't think that they did, and the regulatory bodies have informed us that their policies are very similar to ours, that they do require a secondary backup mechanism. That may be an acoustic trigger. That may be a backup trigger using an ROV, as it was tried in this case, which was the backup mechanism for this blowout preventer. But we are looking at everything that might serve as more safety measures to require on blowout preventers. I don't know of anybody who requires two.

Mr. TAYLOR. Mr. Chairman, you have been very generous.

Admiral, for the record, because I know Mr. Cummings deserves his turn—for the record, I would like you, side by side, to compare what sort of inspections you had on that foreign-flagged drill ship as opposed to had that been an American-flagged vessel.

Admiral SALERNO. Sir, this is a foreign flag—it is flagged in the Marshall Islands—and so what we do is essentially is a Port State Control-type inspection, although it is very extensive. We seek to—just as a general statement, we look for parity. We want to make sure that that rig, when it's operating on our Outer Continental Shelf, meets a level of safety and equipment standards and environmental protection equivalent to a U.S.-flagged rig of the same type.

For a U.S.-flagged rig, of course, it's Coast Guard-inspected. We go through it from the design phase all the way through its life cycle. There are periodic inspections that are required. The Coast Guard people go out and visit it. We visit the rig to perform structural examinations as well, or drydock surveys. Typically they're done while the rig is floating. We make sure that it's adequately manned. All of the safety systems are checked on a regular basis, including drills for firefighting, lifesaving. We take very close attention to hazardous conditions.

On a foreign rig, we look at all of that same equipment, but we also—there are some differences because, on a foreign rig, a lot of the work—for example, the hull structural surveys—would be performed by a recognized organization, authorized by the flagged state. Typically it's a classification society. We would make sure that they are current, in compliance with all international requirements and with our requirements for operations on the Outer Continental Shelf. We also pay—firsthand, look at all of their firefighting, lifesaving, and hazardous conditions on a rig, just as we would on a U.S. rig, to make sure that there are no obvious safety hazards for that ship operating.

So we approach it somewhat differently between U.S. and foreign, but we make sure that all of the same types of checks have been performed, either directly by us or by a recognized authority for a foreign-flagged vessel, and so that there is parity for the safety levels whether it's U.S. or foreign, if that answers your question.

Mr. TAYLOR. No, but my time is up. I'll get back to you.

Mr. RAHALL. The gentleman from Maryland.

Mr. CUMMINGS. I want to follow up on what the gentleman was just asking you.

So you would rely—therefore, on a foreign-flagged vessel, you would rely on an agency like the American Bureau of Shipping; is that right?

Admiral SALERNO. The recognized organization empowered by the flag state for certain things, yes, sir, but not entirely. We perform our own checks as well, and we satisfy ourselves that that rig is in full compliance.

Mr. CUMMINGS. Well, you just said—I'm getting confused. You just said a moment ago that there were certain things that you—and correct me if I'm wrong—you went to, I guess, an agency like the American Bureau of Shipping, and they would do certain things, and then, because they are bona fide and up to date, and their licenses, I guess, are up to date, then you say, OK, we're fine. They've done that piece. That is the impression I got. Then you go on and do some other types of things, and that differs from an

American ship, an American vessel, where you would just do everything. You wouldn't necessarily rely on the American Bureau of Shipping, a similar agency; is that accurate? Is that pretty close?

Admiral SALERNO. It's close, sir. It's the difference between our responsibilities as a flag state for vessels flying our flag and our responsibilities as a port state and coastal state. We're looking at another country's vessel, but verifying that it complies with international standards and with our requirements for operation on——

Mr. CUMMINGS. So you're trying to tell us that the inspection for a foreign-flagged ship would be—the vessel—would be just as rigorous as for an American?

Admiral SALERNO. Well, I would say that the time that we spend on a U.S.-flagged rig or ship would be far greater than on a foreign-flagged vessel because we're relying on an international system for some of the—for the foreign vessels to demonstrate compliance. We will satisfy ourselves that there is meat behind those certifications, that it's not just a paperwork exercise. We'll spend enough time to be sure that everything is functioning. But there is a difference. We do spend more time on a U.S. flag than on a foreign flag.

Mr. CUMMINGS. So you're familiar with Captain Vern Gifford?

Admiral SALERNO. Yes, sir.

Mr. CUMMINGS. And when he—the Houston Chronicle summarized some of his testimony by stating that Captain Gifford indicated that inspections conducted of foreign-flagged MODUs by the Coast Guard are less rigorous than those conducted by U.S.-flagged MODUs. He reportedly said that the Coast Guard inspections of foreign-flagged vessels can last for 4 to 8 hours and are intended to verify more thorough inspections by nongovernmental certification societies; whereas, inspections of U.S.-flagged vessels can take several weeks.

Is that an accurate statement?

Admiral SALERNO. The "several weeks" would imply some things—for example, a full hull exam or an initial exam. A 2-year recertification typically would not take that long, but the difference is, for a U.S.-flagged vessel, we are providing the certification that it meets all requirements. For a foreign-flagged vessel, it's already been inspected by the flag government. We are verifying that inspection has been done properly.

Mr. CUMMINGS. I've got it. OK. I'll follow up with some written questions, but I really want to get to this.

Does the Coast Guard personnel review the oil spill response plans for offshore facilities approved by the MMS?

Admiral SALERNO. Not necessarily, no, sir.

There is a requirement for that oil spill plan. It's an MMS requirement. It's by agreement with MMS. That plan is designed to be compatible with our area contingency plans that are developed through our Captain of the Ports.

Mr. CUMMINGS. And is that happening?

Admiral SALERNO. We know that—it's a requirement. I cannot say that they are cross-checked, and, in fact, I think that may be something——

Mr. CUMMINGS. No. I want you to hear my question. I'm asking you—you just said something is required. I'm asking you: Does that happen the way it's supposed to happen, and did it happen in this instance?

Admiral SALERNO. The requirement is that they submit a plan to MMS for operations on the Outer Continental Shelf. That is happening.

Mr. CUMMINGS. OK. Now, c'mon. C'mon now. You know exactly what I'm asking you.

Admiral SALERNO. What I think—there is a disconnect, and that's what I'm trying to get to.

Mr. CUMMINGS. Yes. Tell us what the disconnect is, because maybe that disconnect is what we need to connect.

Admiral SALERNO. The disconnect is there is no formal mechanism to reconcile the plans submitted to MMS and the plans held by the Coast Guard. They are supposed to be compatible, but there is no built-in verification process to make sure that they are compatible, and I think that is emerging as something that needs to be addressed.

Mr. CUMMINGS. That is exactly right, and that's what—I just need 30 seconds, Mr. Chairman.

That is what I was talking about earlier in my opening statement, that we have got to get the Coast Guard more involved in this process. I mean, MMS is fine, but I have a lot of faith in the Coast Guard, and I think that—you know, I don't think that you should be at the tail end of something. I think you need to be at the beginning so that if something goes wrong, you've already been an intricate part of what was going on before, and you can follow through.

Is that a reasonable—does that make sense?

Admiral SALERNO. Yes, sir. I think there is a lot of room for improvement in reconciling——

Mr. CUMMINGS. Well, I hope that you'll work with us to try to make those improvements.

Admiral SALERNO. Yes, sir.

Mr. CUMMINGS. Thank you.

Thank you, Mr. Chairman.

Mr. RAHALL. Ms. Birnbaum, let me ask you about OMB's requirements that exhaustive cost-benefit ratios be done before safety regulations can be prescribed, and, of course, that affects not only your agency, but many others as well. However, this review process may fail to adequately consider the type of situation we face today: low-probability events that produce high consequences. In other words, the chance that such a major disaster is going to happen is low, but yet when it does, the consequences are tremendous, as we are seeing this very day.

What challenges do MMS and the Coast Guard as well face when trying to get safety regulations through the regulatory review process and the cost-benefit test that is imposed by OMB?

Ms. BIRNBAUM. I, personally, don't know an occasion where OMB has interfered with our ability to adopt a safety regulation.

Mr. RAHALL. Really?

Ms. BIRNBAUM. Not in my experience. I've been here for 10 months, but not in my experience.

Mr. RAHALL. All right. Coast Guard.

Admiral SALERNO. Well, sir, we do have the obligation to conduct that cost-benefit analysis, part of an overall economic analysis, and that's very challenging and very rigorous. I would not say that they have held up regulations. I'm sure we can cite an example of that. I can't think of one offhand, but it does require a lot of in-depth analysis. It is a very time-consuming part of the process, yes, sir.

Mr. RAHALL. Ms. Birnbaum, let me ask you—granted, you've only been there 10 months. What's your knowledge of the previous administration or your previous—your predecessors?

Ms. BIRNBAUM. I am actually not familiar with any occasion when OMB has held up safety regulations, but I do not know whether that might have occurred in a previous administration. I simply don't know.

Mr. RAHALL. OK. Although the Deepwater Horizon was registered in the Republic of the Marshall Islands, Captain Thomas Heinan, the Deputy Commissioner of Maritime Affairs with the Republic of the Marshall Islands, is reported to have testified before the joint MMS–Coast Guard panel examining this accident that the RMI, as the flag state, did not inspect the drilling equipment and systems—I believe we've gone over this—on the Deepwater Horizon. He reportedly indicated that such inspections are left up to MMS.

How often does MMS inspect these drilling operations on MODUs? How long do such inspections take? How many MMS personnel are involved?

Ms. BIRNBAUM. MMS conducts inspections on drilling rigs on a monthly basis. There's generally two inspectors on an inspection. The inspections take several hours. They first conduct a flyover. Then they review, as I mentioned previously, all the documentation of tests and practices that are required to go on on the rigs in between inspections, and then they conduct a physical inspection of the rig to determine if there are any dangerous conditions. If there is at that time, one of the tests—whether it's a safety drill or whether it's a test of the blowout preventer, they will observe that as well.

Mr. RAHALL. OK. That concludes my questions.

Does the gentleman from Maryland have further questions?

Mr. CUMMINGS. I don't have anything else, Mr. Chairman.

Mr. RAHALL. OK. Well, except for one last—maybe this is a comment, but I'll ask you anyway, Ms. Birnbaum.

Given this disaster in the gulf—and we're all aware of the Secretary's recommendations—actually, the Executive Order as of this afternoon—to break up your agency, is it a legitimate question to ask whether leasing and safety policing are kind of like oil and water; they just simply don't go together?

Ms. BIRNBAUM. As I said previously, I think the Secretary has identified a real tension within the Outer Continental Shelf Lands Act, and his conclusion that they should be split up seems to be an appropriate one to avoid that problem.

Mr. RAHALL. I'm sure we'll be going into that more next week before my Committee.

Ms. BIRNBAUM. Thank you.

Admiral NEFFENGER. Mr. Chairman, may I make one correction to an earlier statement?

Mr. RAHALL. Sure.

Admiral NEFFENGER. I was asked by Mr. Coble how much longer the emergency fund would last. It's actually 17 June at our current rate of expenditure, so it's approximately 30 days, not the 16 days I mentioned earlier.

Mr. RAHALL. We appreciate that correction.

Mr. Cummings, do you have any further questions or comments?

Mr. CUMMINGS. I have nothing else. Thank you, Mr. Chairman.

Mr. RAHALL. All right. If not, we thank you for your patience and for the long afternoon with us.

Mr. RAHALL. The Chair will call panel number 3 forward: Mr. Larry Schweiger, president and CEO, National Wildlife Federation, Reston, Virginia; Mr. Peter Gerica, Gerica Seafood, New Orleans, Louisiana; Ms. Carys L. Mitchelmore, Ph.D., associate professor at the University of Maryland Center for Environmental Science, Chesapeake Biological Laboratory, Solomons, Maryland; and Ms. Nancy E. Kinner, Ph.D., codirector, Coastal Response Research Center, University of New Hampshire, Durham, New Hampshire.

Ladies and gentlemen, we do have your prepared testimony, and it will be made part of the record as if actually read, and you may proceed as you desire under Chairman Oberstar now.

Mr. OBERSTAR. [presiding.] Thank you, Chairman Rahall, for substituting and carrying on the hearing while I was conducting other Committee business.

I ask the witnesses to rise. Raise your right hand.

With regard to the testimony that you provide to the Committee on Transportation and Infrastructure today and all subsequent Committee communications regarding this hearing, do you solemnly swear that you will tell the truth, the whole truth and nothing but the truth, so help you God?

Thank you. You are sworn in.

We will now, as Mr. Rahall said, take your testimony, and except for one witness for this panel who had to leave, that testimony will be included in the record in full.

TESTIMONY OF LARRY SCHWEIGER, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NATIONAL WILDLIFE FEDERATION, RESTON, VIRGINIA; PETE GERICA, GERICA SEAFOOD, NEW ORLEANS, LOUISIANA; CARYS L. MITCHELMORE, Ph.D., ASSOCIATE PROFESSOR, UNIVERSITY OF MARYLAND CENTER FOR ENVIRONMENTAL SCIENCE, CHESAPEAKE BIOLOGICAL LABORATORY, SOLOMONS, MARYLAND; AND NANCY E. KINNER, Ph.D., CODIRECTOR, COASTAL RESPONSE RESEARCH CENTER, UNIVERSITY OF NEW HAMPSHIRE, DURHAM, NEW HAMPSHIRE

Mr. SCHWEIGER. Thank you, Mr. Chairman, and a very special thanks for the opportunity to speak today on behalf of the 4 million members and supporters of the National Wildlife Federation.

First, let me extend my condolences to the families who have lost loved ones and to those affected by this disaster. Our thoughts and prayers are with them this day.

I recently spent 9 days in Venice, Louisiana, observing the spill from the air and also from the water and visiting with local fishermen and others. Last summer I visited the site of the Exxon

Valdez spill, and spent time in Prince William Sound with scientists there.

I want to point out that today's circumstances show that the spill in the Exxon Valdez continues to haunt the Prince William Sound. About two-thirds of the species that were monitored after the spill have not fully recovered, including orca whales and the once abundant herring populations in the Prince William Sound area.

By some scientific estimates today, BP has already spewed more than twice the crude spilled by the Exxon Valdez. Yet BP is treating the public estate with, I think, a cavalier attitude by refusing to do proper testing to determine the size of the underwater spread of the spill.

We appreciate today Lisa Jackson's comments, taking steps to get better information to the public, and would urge more of that approach in the days ahead.

The Gulf of Mexico is a crime scene, and the perpetrator cannot be left to be in charge of assessing the damage or controlling the data that flows to the public. In contrast to the sudden impacts of the Exxon spill, the BP blowout is a slow-motion catastrophe, gushing oil from the very depths of the ocean floor beyond view of most cameras.

Make no mistake about this. This spill has the potential to be far more devastating. The BP spill has created a toxic stew that is spreading rapidly, and robbing the life-giving oxygen from one of the world's most abundant fisheries, and contaminating the home for an amazing array of marine life. Yet yesterday Mr. Hayward claimed the overall environmental impact of this will be very, very modest. I, frankly, believe that Tony Hayward's grasp of the truth is very, very modest on this point. He is choosing sound bites over sound science.

The gulf has more than 400 marine and coastal fisheries and wildlife species at risk. An example of the threat they face: Five species of sea turtles found in the gulf are federally listed as endangered or threatened. Sea turtles are currently encountering polluted waters. Oil imperils these turtles at every stage of their life cycle. The Gulf Coast communities will also be impacted for years to come. Crabs, oysters and other seafood pump about $2.4 billion a year into the Gulf Coast economy.

Already Federal authorities have temporarily banned commercial and recreational fishing to 19 percent of the gulf waters most affected by the spill, citing health concerns. In Hopedale, Louisiana, where people are normally making their living from the bounty of the sea, they are now standing in unemployment lines.

The most significant damage will be to the ocean depths. To date, BP has used nearly a half million gallons of chemical dispersants that commingle and distribute throughout the water column.

Birds are affected by this toxic stew because it accumulates over time; it moves through the entire food chain, and has an impact starting with the phytoplankton and zooplankton to the top-level predators, such as fish-eating birds.

Some laboratory studies have shown that dispersed oil is more dangerous to marine life than is untreated oil. The National Academy of Sciences warned 5 years ago that we don't know the impact of mixing oil with chemical dispersants on a wide scale, but testing that the Academy has suggested at the time has never been completed. Now one of America's greatest marine ecosystems has been turned into a vast chemical experiment.

Today, the National Wildlife Federation joins with 10 other conservation groups in writing President Obama to urge that the Federal Government immediately take over environmental monitoring, testing and public safety protection from BP. Too much information is now in the hands of BP's many lawyers, and too little is being disclosed to the affected public.

Congress, too, must act. The $75 million cap on liability and the cap on punitive damages should be lifted. The government must ensure that BP and other liable parties fulfill their full legal and financial obligations to both the ecosystem and to the communities damaged by this spill.

The BP spill is jeopardizing a region already on the brink of collapse. The 3.4 million acres of marsh, swamps, forests, and barrier islands in coastal Louisiana constitute the largest wetland complex in the continental United States. However, neglect and poor management by the Federal Government and channels dug for oil and gas extraction have devastated the Mississippi River Delta. We must invest in the restoration of the Mississippi River Delta to restore the resilience to this damaged fishery.

America is taking a greater and greater ecological risk and is getting less and less oil. This disaster should make it clear that Congress must pass real energy reform now that will cut our dependence on oil in half. We must hold oil companies and other corporations accountable for spills and also for their carbon pollution, and create a path that takes us truly beyond petroleum. This crisis in the gulf is not just about making offshore oil platforms safer; it's about creating a safer energy platform for America.

Thank you.

Mr. OBERSTAR. Thank you very much. I think your last comment of making a safer energy platform really characterizes what we are in pursuit of in this hearing, among other things.

Dr. Mitchelmore.

Ms. MITCHELMORE. Good afternoon, Chairman Oberstar and Members of the Committee.

I am Carys Mitchelmore. Thank you for inviting me to discuss scientific issues concerning dispersant use. I am an aquatic toxicologist, and have been researching the impacts of pollutants, including oil and dispersants, on organisms for over 15 years.

Unfortunate recent events in the gulf have brought to the forefront issues pertaining to the impacts of oil. My testimony today will focus on some effects and uncertainties regarding dispersant use. Related to this, I'd like to stress two major points: First, significant data gaps in understanding the toxicity, the fate of dispersants and chemically dispersed oil exist. Second, there are numerous reasons why the impact of chemically dispersed oil in the environment may be underestimated.

Dispersants containing solvents, surfactants and other additives are used to redirect an oil slick. They do not remove oil; they simply alter its chemical and physical properties, changing where it goes, where it ends up and its potential effects. They are used to protect organisms which contact the surface slick and to protect sensitive shorelines from the slick coming ashore. This protection is at the expense of organisms residing in the water column and potentially those on the sea floor. Dispersants break up oil into small droplets that move down into the water, spreading in three dimensions instead of two. Water column organisms normally exposed to only dissolved oil constituents now face additional exposure to dispersant and dispersed oil droplets.

Toxicological data feeds into the complex decisions regarding the application of dispersants; however, limited toxicological information exists to fully assess the risks to organisms. Toxicity data, based on short-duration exposures and the risk of death to organisms, are those that are most often used to assess how toxic a chemical is and which species are most at risk. Even using these simple tests, there is conflicting scientific evidence on whether chemically dispersed oil is more, equally or less toxic than oil.

Organisms can also be affected in ways other than death. Dispersants and chemically dispersed oil can cause many sublethal impacts, including reduced growth, reduced reproduction, cardiac and metabolic problems, developmental deformities, cancer, and changes in behavior. These subtle endpoints can have huge consequences for populations, and delayed effects may occur long after brief exposures. Some species, like corals, are more sensitive than others.

Trade-off decisions between species are difficult if toxicity data is not available for these or closely related species. Data may also not be available for the vulnerable early life stages of organisms. This is of concern as larval life stages often inhabit the near-surface waters during reproductive seasons where dispersed plumes are at their highest concentration. Furthermore, traditional laboratory tests can underestimate the toxicity of fish larvae and other translucent organisms like corals. Natural sunlight can interact with the oil taken up into organisms, thereby increasing toxicity up to 50,000 times. This photo-enhanced toxicity mechanism will increase the footprint of dispersed oil effects.

Dispersants change how organisms are exposed to oil and may facilitate the outtake and bioaccumulation of oil. It is what dispersants do to the oil that often drives toxicity rather than the inherent toxicity of the dispersant itself. Small oil droplets are taken up by suspension feeders, such as mussels and oysters. Zooplankton can mistake oil droplets for food.

Current models that predict oil spill effects often do not take into account droplet exposure pathways. Phytoplankton and zooplankton reside in surface waters where the plume is most concentrated. These are essential components at the very base of the food web. If these organisms are impacted, then higher trophic-level organisms simply will not have enough food, and will suffer reduced growth, reproductive output and eventually death.

Little is known about the impact of dispersant application near coral reefs. My recent experiments demonstrated that corals were sensitive to low levels of dispersant and dispersed oil. They displayed sublethal behavioral effects. There was a narcotic response, resulting in the cessation of coral pulsing. The corals bleached; ulcers were formed, and the tissues simply started to break down. A month after low-dose, short-term exposures, delayed effects and significant reductions in growth were seen. They accumulated large amounts of oil, including from the droplet phase.

In summary, Chairman Oberstar and fellow Representatives, we face huge challenges to protect the health of our coastal and oceanic ecosystems. With oil spills, this involves making difficult trade-off decisions on what species to protect at the expense of others. By using dispersants, we change how organisms are exposed to oil; yet we do not fully understand the implications of this. How are organisms exposed, and how do we identify sensitive species sublethal effects and its impact to the food webs?

The recent spill in the gulf has brought us into uncharted territories, given the sheer volumes and duration of dispersant used and its novel application of the seabed. Are the shoreline habitats still the most at risk? With more information, we can be better prepared to deal with such disasters. Increased knowledge translates to better solutions. We need that knowledge now.

Thank you.

Mr. OBERSTAR. Thank you very, very much—a very thoughtful, well-prepared presentation.

Dr. Kinner.

Ms. KINNER. Thank you.

Chairman Oberstar and distinguished Members of the Transportation and Infrastructure Committee, thank you for giving me the opportunity to appear before you today. My name is Nancy E. Kinner, and I am a professor of civil and environmental engineering at the University of New Hampshire, and am the UNH codirector of the Coastal Response Research Center.

The center is a partnership between NOAA's Office of Response and Restoration and the University of New Hampshire, and acts as an independent, honest broker to oversee research on oil spill response and restoration. It serves as a hub for the oil spill response community, and educates the next generation of oil spill researchers.

The center has developed several tools that are currently being used in the Deepwater Horizon spill. One of those is the Environmental Response Management Application, or ERMA, which is being used to brief out all of the different parties affiliated with the spill about the oil spill trajectories, the realtime data, et cetera.

It is well documented that, throughout history, accidents and failures lead to significant changes in engineering design and public policy. The Exxon Valdez oil spill in 1989 was no exception. It resulted in tough regulations aimed at reducing the frequency and impact of oil spills, and prompted Congress to pass the landmark Oil Pollution Act of 1990. Despite advances in spill response made since the Exxon Valdez, a major gap in our knowledge is understanding the link between the fate of the oil and its biological and ecological effects.

The overarching goal of any oil spill response is to protect organisms and to minimize damage to habitats and the human activities associated with them. When oil surfaced after the Deepwater Horizon blowout, many experts predicted that when it reached the salt marshes, there would be an unprecedented environmental disaster. The goal of the response became keeping the oil offshore, using booms, skimmers and in situ burning. However, wind and waves have necessitated the use of greater than 600,000 gallons of dispersant on the water's surface and now at a depth of 5,000 feet. That is four times the amount of dispersant ever used in past history.

This response has prevented the images associated with the Exxon Valdez spill of oiled animals and blackened shorelines; however, questions abound about the impact of this approach. I do not believe that anyone knows the answers to those questions. There have been some scientific studies about dispersant use, but there is relatively limited data, and some of that does not withstand the rigors of peer review. None of it addresses the magnitude and exposure of the Deepwater Horizon spill.

Further compounding this is our incomplete knowledge of deepwater ecosystems. Without this information it is impossible to predict the potential recovery and how to do adequate restoration. Only time and research will tell what the impacts are to the natural resources, and how long it will take for the gulf to recover.

When an oil spill occurs, we must be able to make difficult decisions and trade-offs in a timely fashion to minimize the impact. My fear is that, as in the wake of the Exxon Valdez, the Deepwater Horizon spill will prompt a flurry of Federal authorizations of research and oversight committees with little actual funding appropriated to answer the fundamental questions associated with response and restoration.

To accomplish this, I recommend first that we not neglect funding fundamental scientific research. It is tempting to direct all of the funds towards offshore drilling regulation and improved oil spill clean-up technologies as if more regulation and engineering will prevent all accidents and human error. History tells us it will not. Therefore, it is imperative that funding also be directed towards research that helps us understand the fate and effects of the oil and how to do more effective response and restoration.

Second, we must fund scientific research that is peer-reviewed, transparent, scientifically robust, and environmentally realistic. It should be carried out in consultation with responders to ensure that it fits their needs. Independent academic centers are the vehicles that can best oversee the needed research so that results will be respected by all stakeholders. NOAA realized this when it created the Coastal Response Research Center, an example of the type of independent academic research center needed to address these questions.

Only by making science-based research a priority will we have a better understanding of the fate and effects of oil spills and how to respond and restore the environment to minimize damage when—not if, but when—the next oil spill occurs.

Thank you for giving me this opportunity to speak before you today. I would be happy to answer any questions.

Mr. OBERSTAR. Very, very fine, splendid testimony. It seems like we've saved the best for last.

Mr. Cummings.

Mr. CUMMINGS. I'll be very brief, Mr. Chairman.

Mr. OBERSTAR. Take your time. We've got plenty of time here. They've stayed all this time. I assume they want to answer questions.

Mr. CUMMINGS. The Environmental Protection Agency has made a statement that dispersants generally are less toxic than oil, and I was wondering, Dr. Mitchelmore, what does your research show on that issue? In other words, the—do you understand the question?

Ms. MITCHELMORE. Yes.

Mr. CUMMINGS. Oh, OK.

Ms. MITCHELMORE. Yes, thank you, Representative.

That's a very interesting question, and currently the scientific data that is out there right now is very conflicting. There are studies out there that show that the chemically dispersed oil is more, less or even equally toxic. But one thing to keep in mind is the question you asked, which is the toxicity of dispersant versus the toxicity of oil. Well, dispersants aren't put out there.You know, they're not out there by themselves.

Mr. CUMMINGS. Right.

Ms. MITCHELMORE. I mean, they're there to put on the oil, so the question should be: Is the chemically dispersed oil more toxic than the oil?

Mr. CUMMINGS. Well, then answer that one.

Ms. MITCHELMORE. OK. Well, again, there is a lot of conflicting scientific evidence out there, and it depends on the dispersant. It depends on the species that you're looking at.

Mr. CUMMINGS. I see.

Ms. MITCHELMORE. It also depends on the life stage of the species. To top all of that, it depends how long you've—the concentration and the duration that those species have had from exposure.

Mr. CUMMINGS. Dr. Kinner.

Ms. KINNER. Yes, sir.

If I might add to that, I think one of the things that you have to realize is that these studies are conflicting sometimes because they are not done on an equal basis, so one of the things that happens is that sometimes the actual concentrations will not be measured during the exposure. It's what we call a nominal exposure. You know what the concentration was at the beginning of the experiment; you don't know whether that concentration was maintained over the full, for instance, 48 to 96 hours. So that is the difficulty. When you start comparing these studies, you are not comparing apples to apples. You are comparing different concentrations over time, and you don't even know it just because of the way these studies have been conducted.

Mr. CUMMINGS. Yes, Dr. Mitchelmore.

Ms. MITCHELMORE. Yes, I'd like to add to that.

I concur with that. This is one of the difficulties in the comparisons is that often experiments—they are carried out in different ways, and there's two main types.

For example, there are ones that are comparing based on the same amount of oil between your dispersed oil test and your oil test, and then there's others that will put in an equal loading of oil. So, of course, there's going to be more oil in the chemically dispersed test because it's taking that oil up from the surface into the—so the question is which should we be comparing in terms of environmental relevance.

Mr. CUMMINGS. Well, speaking of environmental relevance, the standard premise for using chemical dispersants is to reduce the likelihood that oil slicks will impact the shoreline. However, it appears that oil has begun to make landfall at numerous places in Louisiana. As a matter of fact, when I was down there this weekend, they were talking about some problems that they were beginning to see.

How does this fact impact the decisionmaking on the use of dispersants? In other words, if chemically dispersed oil makes landfall, would it have the same ecological impact as nondispersant oil? I'm just curious.

Mr. Schweiger, you are welcome to kick in if you can.

Mr. SCHWEIGER. Well, let me say, having spent 9 days on the water there—and our staff are still there, monitoring things as much as we can—that there is oil coming ashore at certain places, but certainly, if there were no dispersants used at all, we would see a lot more oil. I think, for example, on the days that I was down there, we were getting 25- and 35-knot winds off the water, and it would have pushed a lot of that oil ashore had that dispersant not been used.

It really is a tough call. It's—you know, what do you want to give up, your left arm or your right leg? Neither answer is a particularly good one.

I think the scientists have pointed out accurately that we don't have the kind of research, and that research was, in fact, recommended several years ago, and it's not been properly conducted. We don't have the information we need to have to make a more informed and scientifically sound decision.

Mr. CUMMINGS. Dr. Kinner.

Ms. KINNER. Yes, sir.

Back when the NRC released its report in 2005 questioning the efficacy and effects of oil, we convened a group of scientists representing a broad spectrum of the community, both people from the NGOs, people from the oil companies, academia, and State and Federal agencies, all primarily scientists, and we actually put together and put out, which is available on our Web site—and I have a copy here—of a whole research and development needs document for looking at dispersed oil. We also, subsequent to that, formed a dispersants working group, and we've been trying to coordinate the research that has been conducted to look at those various research topics.

About half of those topics have been looked at. Primarily they've been looked at with respect to the efficacy of dispersants; in other words, how much energy do you have to put in to get them mixed in? How do you spray them on better? And much less has gone into the issues of effects of those dispersants, and that's primarily because the agencies that would be interested in those kinds of questions don't have the R&D funding.

Mr. CUMMINGS. Mr. Chairman, just one last question.

Mr. OBERSTAR. Just go right ahead, please, please.

Mr. CUMMINGS. You know, one of the things that struck me down in Louisiana was I saw all the fishing boats—a lot of fishing boats and shrimp boats tied up, which meant that folks weren't doing their normal occupation, and I was saying to myself, how does—

I don't know whether this is in your purview—how do folks determine when it's safe to fish; in other words, to eat the fish? Does that come within your-all's kind of research?

Ms. KINNER. We don't do research specifically on that. NOAA does have a whole list of seafood safety guidelines that are available.

Mr. CUMMINGS. I see. OK. Because it seems to me—you know, I would venture to guess that there are people who—you know, they want to work. They want to make sure that they—they want people to be safe who get the food, but at the same time, they—you know, they want to work, and so—and they're used to working, and so they may look out there, and they may not even see any kind of sheen, because one of the things that they were telling me is that it's not unusual for them to see tar balls from time to time in normal circumstances. So I was just wondering.

Ms. KINNER. Yes, sir. That is a really difficult question even to judge how clean is clean——

Mr. CUMMINGS. Yes.

Ms. KINNER. —just on a normal basis.

So, for example, there is a mussel watch program that has been funded for many years, and one of the things they're looking at when this question has come up about baseline data, they are looking at the mussels now to see if the concentrations of some of these contaminants have changed. But you have to document that those contaminant concentrations have changed in reference to this spill, and there is a lot of baseline contamination there normally, so it is very difficult to do, sir.

Mr. CUMMINGS. Thank you very much, Mr. Chairman, for your indulgence.

Mr. OBERSTAR. Very, very thoughtful questions, as always. You always come well prepared.

Ms. Brown has arrived.

If you're ready, I'll acknowledge you at this time unless you want to wait and gather your thoughts a little bit.

Ms. BROWN OF FLORIDA. That's all right. I'm waiting for someone.

Mr. OBERSTAR. I have a number of questions.

First, Dr. Kinner, I am in full agreement with your point—several points about the funding of fundamental scientific research, research that helps us understand the fate, behavior and effects of emulsified, dispersed and submerged oil, and to better predict spill models. Those things we need to do. It's exactly right on; peer-reviewed, transparent, scientific research and consultation with responders, developing—what we need, I think, is a baseline of natural resource damage information.

The real question is: How do you collect it? Who should be the entities that collect this information?

I harken back to Exxon Valdez. A good deal of information was, indeed, collected, gathered in house, and not shared with the scientific community, so I don't want to see that situation repeated. I think we could create a scientific panel—we, that is, the responsible Federal Government agencies—and fund it out of the Oil Spill Liability Trust Fund, which then could be billed back to BP, and they would—under the law, they'd be required to cover that cost by paying into the trust fund.

How would you envision creating—or what type of commission—what would be its constituents and its mission?

Ms. KINNER. Yes, sir.

Let me just tell you what I was doing when this spill occurred. Our center was hosting a workshop in Anchorage, Alaska, and that workshop, which had been in the planning for many months, was actually a workshop to look at how natural resource damage assessment should be conducted in the Arctic, because we know, again, that it's when a spill occurs, not if it's going to occur.

So what we did, sir, is typical of the way we approach these things. The University of New Hampshire does not actually conduct the research. We are basically an honest broker. So if money is given to us, we run a National Science Foundation-like, open research type of process, and then we hold these working groups and workshops, and what we try to do is bring all the stakeholders together, because when you have an NRDA, a Natural Resource Damage Assessment, you've got to have all the parties at the table. By law you have to have the responsible party. You have to have the States. You have to have the Federal agencies.

So what we did was we had this workshop up there where we had breakout groups, et cetera, thinking about what kind of data is it that we need to collect to have a successful NRDA.

Of course, the problem is legion in the Arctic, because we don't even understand the basic ecosystems there, and it's very difficult to collect the data, but we are thinking about how to do it and came up with a bunch of guidelines that would help us try to form that initial database.

One of the things you can do, sir, if I might just add one other thing, is that if you don't have a baseline, you can try and get—though it's not the best, you can try and get a background site that you can use as a control—OK—versus the site where the contamination exists. That's not desirable, but in some cases it's the method that has to be approached. Fortunately, in the case of the gulf, we have a lot of data that has been ongoing and being taken there by many of the existing universities and agencies.

Mr. OBERSTAR. Well, thank you for those thoughts.

Dr. Mitchelmore and Mr. Schweiger, could you comment on that approach and on the general question of how to create such a scientific panel and of whom it would be composed?

Ms. MITCHELMORE. I think Dr. Kinner eloquently explained it. I would agree with all of those comments.

The main issue is we are lacking a lot of basic knowledge on the fate and the effects of oil and oil spill dispersants.

Mr. SCHWEIGER. Let me say that last summer I was in Cordova and witnessed the loss of the canneries now 20-plus years after that spill. We need to determine adequately the actual damage done to the natural resources and its impact on existing communities and find a way to properly quantify that over time so that the responsible parties might actually help reimburse that loss.

I think one of the great lessons out of the Exxon Valdez spill is that the fishermen there were paid 7 to, I think, 12 percent on the dollar that they lost, and their lives were ruined, their communities were disrupted. And we should not have that happen again, particularly to the people in the gulf and whatever other places this might eventually affect before it's over.

Mr. OBERSTAR. Congressman Young was very forceful in stating that very case, that the fishermen in the end got very little out of the settlement.

Mr. SCHWEIGER. Exactly. Part of it was we did not have the information to make the stronger case that they needed. So I think the scientific information that underpins any case going forward to create a clear painting of what they are actually responsible for—we heard today that they are willing to pay for legitimate claims, but if you don't have scientific documentation, you can't have a legitimate claim.

Mr. OBERSTAR. A "legitimate claim" is a matter that I felt the BP and Transocean didn't adequately define, so I spelled it out from the provisions of the act.

Is there any information on whether the oil is better left, from an environmental standpoint, in the open water than washing ashore in the marshlands where there might be ecosystems there and microorganisms, bacteria, that could work on it and devour it? Is there any information in the scientific literature on that?

Associated with it, will oil in time, after it agglomerates with other particles in the ocean water—will it settle to the bottom? Will it just continue to float?

I remember in that context Thor Heyerdahl testifying in this Committee room—that seems like 40 years ago—about crossing the Pacific in Ra II and noting that they were going at about 3 to 4 miles an hour on that raft to imitate or to replicate what the Polynesians might have done to move from one place in the Pacific to another. He said, we were moving just slightly ahead of the tar balls from oil discharge and diesel discharges from oceangoing vessels.

So, one, does this eventually settle to the ground? Does it float interminably in the ocean? Are we better off in the water, or at some point does it all come ashore? Does it settle to the bottom?

Ms. KINNER. Mr. Chairman, I think, in answer to your first question, the difference here that we are seeing is that the flow keeps coming. So, when one makes an assessment about dispersant use and the trade-off of dispersant use versus impacting a salt marsh, one is usually making a finite decision. In other words, there is a finite amount of oil coming out of a ship. It's going to be stopped, et cetera. We're trying to keep it off the shoreline.

I think the difference here is that we are talking about a very large amount of oil coming continuously out of the source, and so we have added—or in this particular case there has been a very large amount of dispersant added. We have never seen this not only in the U.S., but worldwide, in a very restricted area.

So, if you look, for instance, at the loop current that is supposed to come up in there, and you look at what's happening to the currents in that general area, a lot of material is potentially staying in that area. That makes for a very different kind of a long-term potential risk to those organisms that I don't think anybody can assess.

Mr. SCHWEIGER. The other side of that, if I might add—the coastal wetlands of the Mississippi Delta are rather unique in that they are very young. They are continuing to settle over time. Added to that is the sea-level rise that we are experiencing from climate change. These systems are in a race for survival, and that race for survival involves two factors. One is the sedimentation load that comes down the Mississippi River that is deposited in these coastal areas, and the other is the vegetative growth each year from the plant material that is in those wetlands.

If we would allow—or if the oil would be allowed to flow into these marshes and kill off the vegetative growth, I suspect that you would see the loss of large numbers of wetlands, and they would not reoccur because that loss of vegetative growth may, in fact, cause the collapse of the systems as we've seen in so many other areas throughout the gulf region. So this is a different kind of thing because of the need for the continual growth and rebuilding of those wetlands in order to stay paced with the changes that are going on in that region. So I'll just point that out as one of the factors involved here.

Mr. OBERSTAR. Thank you.

Dr. Mitchelmore.

Ms. MITCHELMORE. Mr. Chairman, as a toxicologist, the things that we would need to know to assess risk would be the basic concept of concentration. How much of the oil is there? And the other factor would be duration. How long and how concentrated is that, and for how big a spatial area?

The decision to use dispersants on an open ocean spill to protect coastal shorelines, as Dr. Kinner mentioned, is normally a surface oil slick. It's normally a one-time event, and the dispersed oil plume does move down into three dimensions, and at depths and at distances it dilutes to very low concentrations. So immediately underneath that spill, there's going to be pretty high concentrations which are detrimental to those organisms, but that's a relatively constrained area.

The issue with this is it's a continued plume. It's a continued application of dispersants. We don't know the sheer area, the concentration and duration the organisms are being exposed to.

We also need to keep into mind that protecting the shoreline organisms from oil by having these dispersants, we could indirectly be affecting those organisms because we are removing the food sources. I mean, there is a lot of zooplankton, phytoplankton, a lot of food sources, out there in the coastal and oceanic systems. If you are impacting a great proportion of those, that is potentially reducing the food sources for the coastal environment.

Thank you.

Mr. OBERSTAR. This thing gets more complicated and more mystifying as we dig deeper.

The loop current, are there models of the movement of the loop current? Has it been studied sufficiently so that we know what it does? Does it move constantly in a direction? Does it reverse course? And in that context, I just wonder whether any studies are done, any attention is paid by the MMS and the Coast Guard in licensing, permitting, approving these drill rigs and the effect of a leak underwater that would get into this current and where the current would take that oil. There is no evidence that anyone has ever studied this issue.

Can you respond to that?

Mr. SCHWEIGER. I am not aware of any study that would give us any sense at this moment where this is going. I think there is a lot of conjecture, how far it is going to reach and what impacts it may have, for example, in Florida and other places. It certainly is a huge concern for those of us who care about nature.

Mr. OBERSTAR. The concern would be can it reach to the Gulf Stream?

Mr. SCHWEIGER. That is the expectation at this moment. But I don't think that is based on any particular study or science, it is based on what currently is unfolding before our eyes.

Mr. OBERSTAR. If so, then it becomes an international global tragedy or disaster, whatever it comes out to be. The Gulf Stream is going to take whatever is in it at three to four miles an hour all the way to Iceland.

Ms. KINNER. Mr. Chairman, I think actually there is quite a bit of modeling that goes on with respect to the loop current, and actually the Gulf is one of the areas in the U.S. that we have a lot of buoys that are out there giving information, real-time information, as to what the currents are at different depths, et cetera. Now, it isn't completely instrumented, but there are quite a number of those, and there are three-dimensional models that have been set up.

So there is the loop current. And if you have actually been monitoring it, sir, you can actually see that the loop current has been moving. And so there are some people that actually study this quite a bit.

So the question I think is genuine about when will the oil and how does the oil interact with the loop current. But there are the modelers that are looking at this. I think what we need are better and three-dimensional models that actually go right from the physical oceanography concepts to the biological endpoints. You have got to link those up, because that is where the rubber hits the road, sir.

Mr. OBERSTAR. That is right on. There is an underlying assumption that the oil comes from the pipe and it all surges to the surface, but in our overflight of the spill area with the Coast Guard aircraft, it seemed to me that there is a stratification at various levels. There is oil contained at various levels within the water column, and given the temperature, 30 degrees or so at 5,000-foot depth, it is entirely reasonable that that cold water would retain oil in some fashion at some stratification, although if it then gets caught in the loop current then who knows where its ultimate distribution will be. There has been no research on it. We just don't know those things.

Ms. KINNER. Yes, sir, I think that is a problem. When you look at the water column, there is basically an upper layer, which the distance of that upper mixed layer is a function of wind and all sorts of things, and that can go anywhere from maybe 400 to 900 feet down. Below that, from about 900 or 1,000 feet down to the bottom, that is an area that is very, very different in its nature, as you pointed out, sir, and there is evidence to suggest that not all that oil is rising to the surface. And its fate in that deepwater ecosystem is something that we don't understand the deepwater ecosystems all that well, and its fate at the colder temperatures, et cetera, is problematic. We don't really know, sir. And we certainly don't know when we are adding dispersants to it.

Mr. OBERSTAR. And further, and then I will call on Ms. Brown, the dispersants, there are at least 15 different types that are listed with the Environmental Protection Agency. Corexit, which I discussed with Dr. Earle, is a kerosene-based substance, and Dispersit, a different commercial name, is water-based.

The Dispersit, from information provided by EPA, is less toxic, more effective in its absorbency and is lower cost, whereas the kerosene-based is considerably higher cost and has less effect on the oil. There are three columns; average crude oil, South Louisiana crude, and the third is Prudhoe Bay crude oil. It is less effective compared to Dispersit.

Further questions: Have there been any toxicological studies, Dr. Mitchelmore, on ocean organisms, microorganisms, a higher level of biota and fauna? What are the known effects of these dispersants? And one of those I cited earlier was toxic to your skin, to your breathing, to red blood cells in humans. What is the effect on water-borne organisms?

Ms. MITCHELMORE. Yes, Mr. Chairman, you just brought up a huge can of worms there for a toxicologist.

One of the first points I would like to make is that in the table that you are referring to there, dispersants, I mean the first thing you look at with a dispersant is its effectiveness. You are not going to put it out there if it is not effective to some extent. And you brought up that Dispersit is 100 percent effective, compared to the Corexits, which are less effective.

The question is though for the sub-surface plume is that this is a different temperature than the temperatures that you would test its effectiveness at. I am not sure what that table is, but it is probably around 20 degrees. If you were to test that at 4 degrees, you might get a different answer.

Indeed, for the Corexit 9500 formulation, that was formulated to be able to work much more better than its predecessor, the 9527, at these low temperatures because of the Exxon Valdez.

So getting back to your question on toxicity, also keep in mind these are just two standard test organisms that are used in toxicity test. There is the lava fish and there is the mysid shrimp. Even looking in that table you can see there are a lot of differences with the dispersants.

For example, with the Corexit 9500, it is indeed the most toxic on that list to the fish, but it is the seventh toxic to the shrimp. And then if you look at the Corexit 9527, it is fourth for the fish and 10th for the shrimp. And, again, these are just two species. It is an acute toxicity test, you get very limited data with that.

The question is, the Corexits are the most studied, and there is even limited information with those when you are looking at chronic sublethal effects. And the Dispersit literature is even more limited. There is very little data out there looking at the sublethal effects through a range of species and also their life stages to these dispersants.

Mr. OBERSTAR. Well, thank you very much. That is very thorough, and I am sure much more could be added to your answer. Ms. Brown.

Ms. BROWN OF FLORIDA. Mr. Chairman, I want to thank you so much for having this timely hearing, and I am looking forward to the field hearings, because I think this is a situation where we need to take our Committee on the road.

I don't think in the 18 years I have been in Congress that a situation, and would you please put back up my beautiful State of Florida, the map. I want to see it up there.

I don't think that anything has happened—yes, that is Florida—that will deal with destroying our sensitive environment, our economy. Just a shift in the wind could devastate not only Florida, but the entire United States, just a shift in the wind.

Florida tourism, I just recently met with the people from the fishing industry and they are very concerned about not just the fish, the oysters, and this is the spawning season.

Can you give me some input, Mr. Schweiger, as to what is our plan of action, what can we do at this point?

Recently, as late as yesterday, British Petroleum released the following statement saying that wildlife activity, one additional report of impact on wildlife was received, bringing the total to 36. I think that is ludicrous. Can you respond to that?

Mr. SCHWEIGER. Yes. Unfortunately, if much more serious prior planning was conducted about the potential of a spill, I think there was a general assumption that such large spills were so low in their probability that there wasn't a lot of prior planning. For example, having 1 million feet of boom material that frankly doesn't do the job is not adequate for a spill of this magnitude.

I witnessed BP trying to train fishermen to go out and place boom and to clean up toxic materials 2 weeks after the spill had occurred. It is like having your house on fire and organizing a volunteer fire department while your house is burning. This is not good planning, and I think it is a pattern of what has happened in this region. So, at this stage there is not a lot of clear answers because we don't have good underpinning, we don't have a good plan in place. So we are more or less going to have to deal with the circumstances as we know them.

I would also suggest that the more we know about how much oil is actually coming out of that pipe today and how much has come out over the last many days, the better handle we will have on knowing what we are going to have to deal with in the future. We don't have a good number right now. I don't trust the numbers we have.

Ms. BROWN OF FLORIDA. The numbers, they are saying between 5,000 and maybe 100,000 per day, five times as much in 5 days as what happened until Alaska. So we don't have a handle on how much oil, we don't have a handle on what it is going to cost the wildlife, the ecosystem.

Mr. SCHWEIGER. We also don't know, to my knowledge, at this point how dispersed this oil is and its possible course, how much of it is going to get, for example, into the Keys. I think there are some projections coming out today about where it might land.

But I think a lot of this information should have been thought out in the past, you know, what happens if oil gets into the loop current, how does that play over time. We are just learning that as we go, I think. While the modeling is there for the loop itself, it is not there for oil of this scale and scope. And we are going to have to make some decisions—I mean, I think the government has to make some decisions on the fly. I would urge them to be more in control, and not depend on BP for calling the shots in some of these decisions that are being made, and to take whatever corrective action that we possibly can.

Ms. BROWN OF FLORIDA. I guess the Congress has a responsibility, and obviously we have not had the leadership in this area as far as ensuring that the system was in place. I understand that Norway and some of the other European countries, Canada, have other systems that would have had another device that would have cost a little bit more, but it would have been another safety mechanism.

Mr. SCHWEIGER. Can I respond to that? I think that one of the most important things Congress can do is take the cap off the liability. By doing that, you are going to bring the full effect of the problem back to the company that caused it, and I think you see put in place more effective prevention measures, more effective response measures. Because if you don't have a limit, you are going to understand the cost in a very different framework than you do today. I suspect that by capping the liability we are allowing activities and decisions to be made in a very different way.

Ms. BROWN OF FLORIDA. I agree with you. I understand the cap is what, $79 million. But, of course, they made $3 billion in the first quarter. So I just know that we as Members of Congress are not going to let the taxpayers get stuck with this bill. So I do know that regardless of what we need to do, whether making it retroactive, but the taxpayers should not have to foot this bill. There is no question in my mind.

Anyone else want to respond?

Ms. KINNER. Yes, Representative Brown. I think it is important to understand that if we went back just 3 months ago and you were considering your budget priorities, I suspect that your budget priorities would not have been to support the Coast Guard any more in its budget for oil spill response than they had had in the past. And I suspect that the reason that you wouldn't have done that is because we haven't had a major spill in this country of this magnitude in 20 years, and in fact you have to go back even further to find a blowout.

So I know that it is a difficult climate for finances, and I am not trying to justify whether BP should be doing more or less. But I think that there is some complicity in all of this on all of our parts for lulling ourselves into thinking that this couldn't happen. But I submit to you that it can happen, and that it will happen again, because it is impossible to make it not happen with human error, et cetera.

Ms. BROWN OF FLORIDA. Well, I have been one of the advocates in the past of not—you know, the Coast Guard was the first agency to respond after 9/11, and they are on the ground. I have a problem that we have not given them the resources they need to do the job.

But it shouldn't be the resources afterwards, you are correct. It should be the resources not just to, for example, when they explain how they were doing the testing, there was no one there to verify. So you say you test, but who is there for verification? If you are the person that is responsible and then there is no one checking you, then the checks and balances is not there.

Ronald Reagan said trust but verify. So I would agree with former President Reagan on that. But we definitely made need to make sure that the Coast Guard has the resources not just to verify, but also we need more supervision. We cannot leave it just to the industry.

And I agree, we need to take the cap off. In this one case, I am sure that this company will have to pay the entire cost. But the cost for how long? Because this cleanup will go on for years and regardless of what the Congressman said earlier today, Alaska has not been cleaned up 20-plus years later. The last time I went there it was not cleaned up. And, you know, it seems to be like a foregone conclusion that we are going to drill, baby, drill.

Well, this has been a disaster, but it has also been a wake-up call for Members of Congress and for the public. They have an opportunity to weigh in.

Mr. Chairman, I want to thank you again for this hearing, and I am looking forward to the field hearing, because so much of my beautiful State is at risk as we speak here today.

Mr. OBERSTAR. Thank you very much for your passionate, engaged, committed participation, as always. We are grateful for your contribution to the work of the Committee in a very forceful way.

You said, Dr. Kinner, that there was sort of a lulling effect. I find that that happens when we have agencies in the private sector that are doing permitting and have responsibility for oversight and we leave it to them and expect them to do their job. In this case, they clearly weren't doing their job.

We allowed the private sector to establish standards by the Petroleum Institute, to build to those standards, to certify that they have done the right job, and then to operate the systems without intervening oversight. We found that was a mistake in aviation, we found it was a mistake in the Coast Guard contracting program, and it is a mistake in this oil production sector. That is a structural failure of our governmental system.

We found that there was much too cozy a relationship between the FAA and the airlines whose maintenance it is charged with overseeing. We found that it was a failure of the Coast Guard to oversee the construction of vessels to contract specifications, to the designs of naval architects. They did not do it. They allowed the private sector to self-certify, and on the first vessel put out to sea, the Matagorda, of these extended Coast Guard cutters, it cracked in exactly the three places that a naval architect of the U.S. Navy said it would crack.

So, we have had to go back and refocus the FAA on its safety responsibility, refocus the Coast Guard on its safety responsibility. Now the Mineral Management Service, they have to separate promotion and regulation. And then we have to find a way to join the Coast Guard and Minerals Management Service so that they are either together doing the above-water rig and the below water drilling operation, or one or the other is doing it. But you can't have it bifurcated and nobody overseeing the process.

There are a great many lessons to be learned, and high on that list of lessons to be learned are those about the water environment. So we don't know, as Dr. Earle said earlier, what is happening on the bottom of the Gulf. There hasn't been any exploration of it. We know more about what is happening on the Moon and on Mars than in the Challenger Deep in the Marianas Trench. That is unacceptable.

Ms. KINNER. Mr. Chairman, I agree with you 100 percent. What I was referring to with Representative Brown is the amount of funding that is put into research and development with respect to oil spill response, sir, not with response to regulation and the relationship——

Mr. OBERSTAR. That too.

Ms. KINNER. That has been sorely lacking. So the reason we don't know much about dispersants is NOAA has had virtually no money to put into that research.

Ms. MITCHELMORE. I would like to add to that. I was one of the coauthors on the NLC 2005 oil spill, I think it is the FX book, and that was funded by many of the agencies that you have been talking about.

What was interesting in carrying out the review of the available literature in dispersant efficacy and effects, was many of the recommendations we came up with were those recommendations that were made in the previous NLC report in 1989. Within 16 years, still very little progress had been made to address some of those basic, fundamental questions that were missing concerning the fate and effects of dispersants. Many of those recommendations have been made again and again, very limited information has come out since that report, and it is simply the lack of resources available to look at some of these fundamental and basic questions regarding dispersant effects and efficacy and its fate.

Mr. OBERSTAR. Thank you. Complimentary thoughts. Our Committee colleague, Congressman Young, asks whether this panel would support legislation to set aside an annual amount from the Oil Spill Liability Trust Fund to support research under the Oil Pollution Act. Do you think that would be a good idea?

Mr. SCHWEIGER. We would certainly support that. I think that is absolutely appropriate. The lack of basic science in this matter is just quite disturbing to all of us who are looking at these questions and trying to understand today what we may be facing tomorrow. We just simply don't have enough factual information to make prudent decisions.

Mr. OBERSTAR. I think the idea is a very intriguing one. We have a dedicated revenue stream to apply to the research, which gets its funding by fits and starts, by this year's budget cutbacks or next year's budget largesse, and a continuing revenue stream, as we have with the Highway Trust Fund and the Aviation Trust Fund would be—let me ask the other members of the panel, Dr. Mitchelmore, Dr. Kinner.

Ms. MITCHELMORE. Mr. Chairman, I think that would be very appropriate. Resources do need to be made available to understand some of these very basic fundamental questions. Some of the decisions that dispersant application revolve around are some that really conflicting scientific data still exists for.

For example, is the dispersed oil droplets, those droplets with the increased surface volume ratio are said to be more biodegradable. But there is research out there, and again this could be experimentally designed differences as well, but there are some showing that dispersants are toxic to bacteria, some that are showing that it doesn't biodegrade as fast. Then some other basic concepts are we are protecting the birds from going through the oil slick. Well, there were some studies suggesting that dispersed oil can also affect the wetability of fur and feathers. So, again, we are basing some of these just very basic concepts on areas that still lack adequate research.

Ms. KINNER. Yes, Mr. Chairman, I think that is a great idea. Of course, MMS and Coast Guard already get money out of the Oil Spill Liability Trust Fund, some of which does go to research. NOAA does not get any money out of the Liability Trust Fund, so that is problematic.

But I do think, sir, that if that happens, one of the issues that has to be clear to OMB is they don't get scored on that money. So, in other words, if that money comes in for R&D, does their regular budget at OR&R, for example, get cut back to actually have responders.

Mr. OBERSTAR. Very good thoughts. Very important. Well, there are a number of issues which this panel raised on which we need further information, the duration of dispersants in the water column, their toxicity on the biota of the Gulf, the longevity of those dispersants in the water column, the effect of oil on the marshlands, the water column, the ocean bottom itself.

If you think of other things, send those in to us, and we will be sure that they are entered into the record and into the further deliberations that will continue on this issue.

This will conclude our hearing. I want to thank this panel and all of the preceding panelists for their contributions, for the enlightenment, but also for the further questions raised. There is so much yet to be known, more that we do not know and do not understand. With your guidance, we will continue this inquiry.

Thank you very much. The Committee is adjourned.

[Whereupon, at 7:00 p.m., the committee was adjourned.]

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Opening Statement May 19, 2010

Thank you Mr. Chairman and Ranking Member Mica, for holding today's important hearing. I appreciate the opportunity learn about the Deep Water Horizon Oil Spill and join my colleagues in expressing condolence to the friends and family members of the crew, who passed away.

Today, the Deepwater Horizon Tanker is sitting at the bottom of the Gulf of Mexico. Rather than pointing fingers at each other to determine who is responsible, it is important that we conduct a thorough investigation into the root cause of this explosion. We must also find out if poor enforcement of existing laws allowed the Deepwater Horizon to spill. Given the catastrophic nature of this disaster, it would seem that errors were made on both sides and they need to be investigated thoroughly.

Congress, too, must not rush to pass judgment on off-shore drilling. I represent an energy producing state; West Virginia produces much of the nation's coal and natural gas. Like the men and women who work on the off-shore drilling rigs, these workers are some of the most dedicated and hard working people in the country. Preemptively passing blanket regulations on any industry is less likely to prevent future accidents, and will more than likely cause job loss, and industry stagnation. When accidents like this occur, it is vital that we respond appropriately and address the root causes.

I would like to thank today's witnesses for joining us today, and I look forward to their testimony. I thank the chairman and I yield back.

Shelley Moore Capito

OPENING STATEMENT OF
THE HONORABLE RUSS CARNAHAN (MO-03)
HOUSE TRANSPORTATION AND INFRASTRUCTURE COMMITTEE

Hearing on
Deepwater Horizon: Oil Spill Prevention and Response Measures and Natural Resource Impacts

May 19, 2010

Chairman Oberstar and Ranking Member Mica, thank for holding this hearing to review the explosion and sinking of the offshore drilling unit, Deepwater Horizon.

The BP Deepwater Horizon oil spill has created an environmental catastrophe. I would like to extend my sympathy and support to the families of the eleven individuals who have died as a result of this tragic accident. I offer my since condolences to you. Additionally, thousands of families and businesses in coastal communities along the Gulf shoreline are, unfortunately, bracing for the worst. Many are concerned their livelihood will be wiped away by this catastrophe.

The lack of regard for safety on BP's part is troubling to me. When BP obtained its approval for safety and response plan for drilling, they indicated if there was a spill there would not be an environmental impact because they would rely on industry wide standards and technology to respond to any potential spill. Almost a month later, it is clear their Response Plan has failed to stop the continuing oil discharge or contain the oil that has already discharged. A great deal of effort and energy has been devoted to developing new methods to drill at greater depths under the sea, but as has been made clear by this spill similar time and effort has not been invested in developing technology available to stop and clean up a potential oil spill.

All the blame does not lie on BP however. Of grave concern to me are reports that the Minerals and Management Service (MMS), which is charged with ensuring the safety of offshore drilling, is overly reliant on industry to police itself. It is truly troubling to me that BP had not submitted proof to the MMS that the blowout preventer it was going to use had a functioning ram to seal the pipes in the case of an emergency. Also, troubling are reports that MMS allows for self-certification by industry of the safety and effectiveness of blowout preventers. The Deepwater Horizon oil spill makes clear that self-certification is not an effective means of regulation.

For these reasons, I was very happy to hear Interior Secretary Salazar announce his intention to split MMS into two independent entities, one charged with licensing and collecting fees and the second changed with enforcing Federal safety and environmental requirements. It is well past time to split the competing rolls of promoting the government's financial relationship with the drilling industry at the same time they are responsible for regulating its safety. These two are not compatible with one another.

As BP continues to address the ongoing oil spill I have concerns that BP has been overly reliant on one type of chemical dispersant, COREXIT, which could potentially have a greater adverse impact on both the short- and long-term threat to the Gulf of Mexico and on the natural habitat of the region. Of concern to me are scientific reports that have indicated the use of chemical dispersants transfer the oil from the surface of the water to the water column where it may actually have greater harm to plants and animals living in the region. Finally, BP has relied on chemical dispersants in its cleanup efforts to a far greater extent than we have ever seen in previous oil spills. As a result, I am concerned that we do not fully understand the impact these chemicals could have on the natural habitat in the long term.

In closing, I want to thank our witnesses for joining us today and I look forward to their testimony.

OPENING STATEMENT OF REP. STEVE COHEN

Transportation and Infrastructure Full Committee

"*Deepwater Horizon*: Oil Spill Prevention and Response Measures and Natural Resource Impacts"

April 14, 2010

I am saddened to be here today to hear testimony from our guests about the Deepwater Horizon tragedy and the subsequent response.

I have been pleased to see that President Obama and his administration are taking the Deepwater Horizon Oil Spill in the Gulf of Mexico very seriously and have responded swiftly to this tragic event. However, I am deeply concerned about how prepared we are as a nation to respond to such major catastrophes. Clearly our regulations need to be strengthened and we need to take serious steps to overhaul our response plans.

That being said, I pray that we never have to worry about such horrific events in the future, but sadly I believe that is just wishful thinking. This tragedy shines a light on an important issue that we often forget as we progress further into the technology age. As our technology rapidly improves, we develop the false notion that it is flawless and perfect. However, no matter how advanced our technology becomes, it will never be perfect and there will be always be room for human era. We must remember this important fact as we unfortunately turn to even more dangerous energy forms like nuclear power as well as expanded offshore and tar sands drilling. The cavalier, arrogant notion that we can safely extract and utilize these resources is reckless and endangers all Americans and our environment. If we learn anything from this catastrophe, it is that when it comes to dangerous and dirty energy we need to proceed with extreme caution.

I would like to thank the witnesses for attending this important hearing today.

SENIOR DEMOCRATIC WHIP

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STATEMENT OF
THE HONORABLE EDDIE BERNICE JOHNSON, CHAIRWOMAN
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
HEARING ON "DEEPWATER HORIZON OIL SPILL PREVENTION AND RESPONSE MEASURES AND NATURAL RESOURCE IMPACTS"
MAY 19, 2010

Thank you, Mr. Chairman, for holding today's hearing on the BP oil spill disaster that continues to play out in the Gulf of Mexico.

If I may, Mr. Chairman, I would like to start by recognizing the 11 victims of the *Deepwater Horizon* explosion and fire in the Gulf of Mexico last month.

As we continue this Committee's investigation into the events surrounding this ongoing ecological disaster, we should not lose sight of the fact that 11 individuals lost their lives by simply showing-up for work on a daily basis.

I offer my condolences to the families of the first victims to this tragedy.

I also applaud the fine work of the U.S. Coast Guard and others for their valiant efforts to locate those lost in the hours following the initial explosion. I only wish the outcome were different, but their valiant efforts are worth noting.

Today's hearing focuses on the factors that lead up to the *Deepwater Horizon* explosion, as well as the ongoing response actions of both British Petroleum and the Federal and State resource agencies.

Today, this Committee will investigate whether actions of the previous administration to "look the other way" on regulating Big Oil were a significant factor in the *Deepwater Horizon* explosion.

We will also examine why British Petroleum was allowed to undertake oil exploration activities with a substandard oil spill response plan, and what actions are being taken to strengthen response plans at other offshore facilities.

However, today's hearing compels us to ask broader questions about the wisdom of oil exploration policies that push the envelope of drilling technologies without any assurance that these exploratory wells can be shut down if something goes wrong.

This past weekend, the *New York Times* reprinted an editorial cartoon that contrasted the technological innovations for oil extraction with those for cleanup. While it may seem funny that the photo for cleanup was simply a roll of paper towels, it is unfortunate that the reality is not much different.

Last week, the *Washington Post* ran a story on how we are using the very same techniques and technologies for addressing oil spills today as were used in 1969 – over 41 years ago.

Yet, what has become evident is the potential adverse impacts of a "worst case scenario" from modern exploration sites, such as the *Deepwater Horizon* site, are very different from those of four decades ago. For example, weeks after the initial explosion and release of oil, we are still waiting for the responsible party to control the release.

Every day for the past month, somewhere between 5,000 and 80,000 barrels of oil are being released into the Gulf – contaminating local fish and shellfish beds, killing untold numbers of fish and wildlife, and damaging the overall health of the ecosystem for decades to come.

While I am pleased that some of the emerging solutions to slow the release are being implemented, I can only wonder why these solutions were not developed and put "at-the-ready" before this incident.

To use an analogy, why did we wait to test our ability to stop the bleeding until after the surgery began?

Another troubling question for today's hearing is whether some of the techniques used to address the ongoing spill are potentially creating more harm than good, including the use of oil dispersants that are, themselves, petroleum-based.

To date, British Petroleum has released more oil dispersants into the Gulf of Mexico than are in the possession of several major oil producing nations, but questions on both their short-term and long-term implications are unknown.

While I understand the use of dispersants as a tool to avoid excessive amounts of oil washing on the shoreline, what I cannot understand is why British Petroleum has chosen to use one of the least effective, and most toxic chemical dispersants listed on the National Contingency Plan list.

Is it simply because this dispersant is manufactured through a joint partnership with another Big Oil company, or are there other reasons?

Also, I cannot understand why, given the volume of dispersant used in this situation, the manufacturer of this dispersant does not publicly disclose its entire formula so that Federal and State agencies know what chemicals are being added to the Gulf environment in historic quantities and their potential impacts.

Mr. Chairman, I applaud the overall effort undertaken by President Obama and his administration to respond to the *Deepwater Horizon* spill, and its impact on the lives and livelihoods of the Gulf Coast.

For many of the families in the region, they were just starting recover from both Hurricanes Katrina and Rita, and to return to a sense of normalcy in their everyday lives. This spill has renewed many of the fears about how these families will continue to survive and prosper in an area that has seen its share of disasters.

However, a significant difference between Hurricanes Katrina and Rita and the *Deepwater Horizon* spill is that, with a little common-sense and proper preparation, the spill could have been prevented.

To the families affected by this oil spill, you have the right to know what is going on, and the right to demand answers on when this spill will be controlled and will be cleaned up.

It is my hope that a hearing such as today's will help start answering some of these questions.

While the entire story of this disaster may not be told for decades, we have an obligation to see those responsible for this spill held accountable for their actions – not only to the people of the Gulf Coast, but to the American people.

Yet, we also have an obligation to learn from this disaster to ensure we are never again caught unprepared for a similar release in the future.

I shudder to even entertain the idea that companies have become so greed-oriented that people and the environment simply do not matter. Tell me this isn't so. Convince me this isn't so.

Thank you, Mr. Chairman.

Rep. Rick Larsen
Opening Statement
House Transportation and Infrastructure Committee Hearing
"*Deepwater Horizon:* Oil Spill Prevention and Response Measures and Natural Resource Impacts"

Mr. Chairman, thank you for holding this hearing. As federal agencies work to contain and clean up this spill, we must also begin to examine the environmental, economic and legal issues arising from this tragedy.

The *Deepwater Horizon* oil spill is a major human and environmental disaster of potentially unprecedented proportions. If this disaster was a bad 1960's sci-fi movie, it would be the equivalent of Godzilla, Rodan, Gamera and Monster X teaming up to destroy the Gulf of Mexico.

As a representative from the Puget Sound, I understand how devastating an oil spill would be to a coastal region. I want to do everything possible to prevent an oil spill from occurring in Puget Sound and other areas of the country.

Results from the Washington State Oil Spill Advisory Council report outlined challenges facing a modest oil spill in the Puget Sound. Among its findings, the Council determined:

- Only 20-40 percent of a modest spill would be recoverable within two days of the spill;
- There is a shortage of booming equipment and response personnel in the Puget Sound; and
- The ability to track a spill at night or in fog (the latter being a specific problem to the Puget Sound) is severely limited by available technology.

The *Deepwater Horizon* spill raises significant concerns regarding the future of offshore drilling in the United States. I propose that the country take a step back to ensure that any future offshore drilling in the Gulf will live up to oil companies' claims of safety and reliability.

First, future offshore drilling must occur within a legal framework that leaves no doubt that companies are fully responsible for any spills or leaks they cause. Congress must act to lift the liability caps in the Oil Pollution Act in order to match the potential magnitude of spills and leaks.

Second, the Oil Spill Liability Trust Fund must be replenished and the per barrel fee raised to match the increased hazard of deep sea drilling.

Third, it seems clear that the tested technology to facilitate deep sea drilling and provide fail-safe response to disasters failed. When the fail-safe fails, we all suffer. I find it very difficult to see how deep sea drilling can survive without a more thorough public-driven testing and certification of drilling methods and response measures.

While the final impacts of this potentially massive environmental disaster remain unknown, the situation has raised a number of troubling questions. I look forward to investigating these questions and examining the best ways to strengthen our nation's oil spill response and prevention laws.

Finally, I join my Washington state colleagues in sponsoring legislation to ban drilling off the coast of our state and other states on the Pacific Coast. The "drill here, drill now" mantra should not apply to the Washington state coast or the Puget Sound. The *Deepwater Horizon* disaster has made the waters of the Gulf murkier and need for a ban on West Coast drilling clearer.

Harry E. Mitchell

Statement of Rep. Harry Mitchell
House Transportation and Infrastructure Committee
5/18/10

Thank you, Mr. Chairman, and thank you for calling this important hearing.

Today we will discuss an urgent and pressing issue facing our country—the ongoing spill of crude oil from the well site in the Gulf of Mexico from the *Deepwater Horizon*.

As you know, the leak has yet to be successfully contained, and according to recent news reports the oil continues to leak at rates estimated to be between 5,000 barrels and 80,000 barrels each day.

This disaster raises several important questions that we will examine today including the potential environmental effects from the oil spill, the long-term cleanup challenges, and the potential natural resource damages.

We will also discuss the safety functions of mobile offshore drilling units (MODUs) as well as the liability responsibilities incurred by the owners and operators of MODUs that spill oil.

I look forward to hearing more from our witnesses on these critical issues.

At this time, I yield back.

OPENING REMARKS OF U.S. REP. NICK J. RAHALL, II
Before the Committee on Transportation and Infrastructure
Hearing on "Deepwater Horizon"
May 19, 2010

On April 5th, an explosion in the Upper Big Branch Mine in my Congressional District tragically claimed the lives of 29 brave souls. It was the worst coal mine disaster in 40 years.

Just 20 days later, 11 men lost their lives as a result of the explosion of the Deepwater Horizon rig in the Gulf of Mexico. What has ensued is the worst oil spill from a drilling platform in 41 years.

As we begin today's hearing, I think we must recognize the human toll from energy development.

While efforts continue to find the cause of the blast at the Deepwater Horizon rig, to contain the spill, and to combat an environmental disaster, let us –

– just as both the President and the House of Representatives did for those 29 coal miners –

– take a moment to honor the 11 men who perished on April 25th.

Jason Anderson, age 35, Bay City, Texas.

Aaron Dale Burkeen, age 37, Philadelphia, Mississippi.

Donald Clark, age 49, Newellton, Louisiana.

Stephen Curtis, age 39, Georgetown, Louisiana.

Roy Wyatt Kemp, age 27, Jonesville, Louisiana.

Karl Kleppinger, age 38, Natchez, Mississippi.

Gordon Jones, age 28, Baton Rouge, Louisiana.

Blair Manuel, age 56, Eunice, Louisiana.

Dewey Revette, age 48, State Line, Mississippi.

Shane Roshto, age 22, Liberty, Mississippi.

Adam Weise, age 24, Yorktown, Texas.

Psalm 23:4 – "Yea, thou I walk through the valley of the shadow of death, I will fear no evil; for thou art with me; Thy rod and thy staff, they comfort me."

In recent years, the frontiers of energy development have seemed limitless. The industry continued to push the envelope and reached depths that had heretofore been unfathomable.

in the Gulf in So. Wha.

Two miles of water. Five miles of rock. Incredible numbers, and incredible barriers, all surmounted to feed our undying thirst for more energy.

And as we continued to tackle new frontiers, we became convinced of our own superiority over nature. After all, we were told, there had not been an uncontrollable blowout since 1969.

Human ingenuity had triumphed, and safety was a foregone conclusion. Nothing, it seemed, could stop us now.

Ick arus

But this hubris contained the seeds of our downfall. Like the Greek mythological character, Icarus, who made himself wings so he might fly higher and higher, oblivious to his own impending doom, we have dug further and further into the earth, convinced that nothing could possibly go wrong.

Ick arus

In both cases, Icarus and the Deepwater Horizon – the tragic reminder of our own imperfections ended up littering the ocean.

Thank you, Mr. Chairman, for holding this hearing. Next week, the committee which I chair, Natural Resources, will examine the Deepwater Horizon disaster in terms of not only what happened at this particular rig, but the meaning of this disaster as it relates to the future of oil and gas leasing off the coasts of the United States.

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Grace F. Napolitano

Congress of the United States
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May 28, 2010

The Honorable James L. Oberstar
Chairman
Committee on Transportation and Infrastructure
2165 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Oberstar:

I write to respectfully request that you add the attached letter from Professor Robert Bea of the University of California at Berkeley to the record of the hearing regarding the Deepwater Horizon oil spill.

Thank you for your consideration.

Sincerely,

Grace F. Napolitano

Grace F. Napolitano
Member of Congress

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May 24, 2010

Failures of the Deepwater Horizon Semi-Submersible Drilling Unit

The following are preliminary insights into the failures of the Deepwater Horizon Drilling Unit on and after April 20, 2010. The insights are based upon more than 500 hours of analyses of currently available data provided by approximately 60 informants.

Statement of Robert Bea, Professor, UC Berkeley Department of Civil and Environmental Engineering

Based upon the evidence I have been able to gather, develop and analyze, this disaster was preventable had existing progressive guidelines and practices been followed. Some of these guidelines are implemented internationally where the same industry players, including BP PLC, operate. Moreover, other existing U.S. guidelines that were simply waived by the responsible regulatory authority could have prevented this incident.

The information available to me so far indicates that BP PLC and the Department of Interior's Minerals Management Service (MMS) failed to properly assess and manage the natural hazards and human fallibilities in a prudent manner. Consequently, the public, resources and environment were and are being severely punished.

Lessee – BP PLC

As the lessee, BP PLC bears the primary responsibilities for operational Quality (serviceability, safety, compatibility, durability), Reliability (likelihood of realizing desirable Quality) and Stewardship of the exploration of these public resources vis-à-vis the public trust, as well as for the protection of the environment in relation to its operations. Under the terms of these public trust obligations assumed from DOI MMS, BP PLC assure it would live up to the conditions contained its environmental permits and abide by the clear expressions of Congress' laws; conditions it clearly failed to properly address.

Regulatory – DOI MMS

As the Congressionally appointed trustee of the federal – public resources subject of this incident, the DOI MMS bears the primary responsibility for stewardship and regulatory oversight of the operations of BP PLC. This responsibility primarily includes assuring that adequate Quality and Reliability (e.g. acceptable probabilities and consequences of failures – Pfs and Cfs) for the subject development are implemented. Furthermore, the same adequate and acceptable Quality and Reliability attributes need to be implemented, maintained and inspected for the life-cycle of the developments used in the subject operations (concept, design, construction, operation, maintenance, decommissioning).

How Did This Happen?

The environment in which the oil drilling took place – 5,000 feet below the ocean's surface – is extremely hazardous. The hazards are comparable to that of exploration on the Moon and Mars. USCG Admiral Thad Allen described this underwater environment as the "Tyranny of Depth and Distance." I would add "Darkness." These are the natural hazards presented by the pressures, forces and movements of the water and the seafloor, and by the extremely low and high temperatures of the deep ocean environment.

Previous studies of more than 600 catastrophic failures – costing more than US $1 billion – have led to a simple equation to describe these catastrophes: A + B = C. "A" represents natural hazards. "B" represents human fallibilities, such as acquiescence, indifference, ignorance, hubris, arrogance, greed and sloth. "C" is catastrophe, which will happen sooner or later.

These studies show that approximately 80% of the failures are rooted in Extrinsic Uncertainties (human and organizational performance, knowledge acquisition and utilization). The remaining 20% of the failures are rooted in Intrinsic Uncertainties (natural variability and analytical model limitations). Approximately 80% of these failures develop during the system operating and maintenance phases. The studies show that more than 60% develop during the design phase, including concept development. Based on the information currently available to me, the failures of the Deepwater Horizon drilling unit is an excellent example of these findings.

The evidence I have collected to date shows that BP PLC and the DOI MMS failed to:

- properly or effectively evaluate and manage the Risks (Pfs and Cfs) associated with development of the previous and vital public resources. Pfs and Cfs were not acceptable to the U.S. publics, governments, and the environment; his appears to be a violation of the public trust held by the DOI MMS and the corresponding assurances of the industry,
- satisfy the legal Standards of Care (SOC) established by law and by the Best and Safest Available Technology (BAST) in design, construction, operation, and maintenance of a state-of-the-art deepwater drilling and development system; due diligence was not demonstrated ,
- meet the requirements of, iter alia, the Clean Water Act, Oil Pollution Act, the National Environmental Protection Act (NEPA), and the Outer Continental Shelf Lands Act ()OCSLA), and
- act in the best interest of the public, which might be categorized as an issue submect to the "Public Trust Doctrine."

This catastrophic failure appears to have resulted from multiple violations of the laws of public resource development , and its proper regulatory oversight.

Seven Steps Leading to Containment Failure, Pf (Blowout Prevention)

Based on the information available to me thus far, I believe the Deepwater Horizon failure developed due to:

- improper well design (configuration of well tubulars),
- improper cement design and placement (segmented discontinuous cement sheath, minimal volume placed adjacent to lost circulation zone),
- flawed Quality Assurance and Quality Control (QA / QC) – no cement bond logs, ineffective oversight of
- operations,
- bad decision making – removing the pressure barrier – displacing the drilling mud with sea water 8,000 feet below the drill deck,
- loss of situational awareness – early warning signs not properly detected, analyzed or corrected (repeated major gas kicks, lost drilling tools, including evidence of damaged parts of the Blow Out Preventer [BOP] during drilling and/or cementing, lost circulation, changes in mud volume and drill string weight),
- improper operating procedures – premature off-loading of the drilling mud (weight material not available at critical time),
- flawed design and maintenance of the final line of defense – including the shear rams of the Blow Out Preventer (BOP) and the associated electrical and hydraulic equipment.

From the information I have analyzed, the failures by BP PLC and DOI MMS can be characterized as follows:

- drilling and well completion operations did not meet industry standards,
- operations were "Faster" and "Cheaper," but not "Better" – the operation records clearly show excessive economic and schedule pressures resulting in compromises in the Quality and Reliability of this high-end deepwater oil and gas development system, and thus ignoring the Pfs' and
- the involved parties did not anticipate a blowout and, accordingly, did not develop effective, collaborative and constructive interactions, equipment and procedures to ensure that the methods needed to control and mitigate Cfs in case of a blowout would be available.

Three Steps to the Failure to Respond (Containment, Clean-up, Secure, Cf)

My analysis of the facts developed to date show that BP PLC and the DOI MMS did not develop or implement effective measures for:

- well control after loss of containment – blowout ,
- capturing the loss of control materials (gases, oil, high salinity water at the sea surface and within the water column),
- clean-up of the loss of control materials in the open ocean, and adjacent marshes and beaches (booms, skimmers, burning, dispersants).

Because BP PLC and the DOI MMS believed that the potential consequences were "insignificant," they were not prepared for the failures (Cfs) associated with the Deepwater Horizon operations, both in prevention and containment. The consequences of these deeply flawed assessments and decisions were catastrophic to life, property, resources, the industry, and the environment. As this incident continues to unfold, it is clear that BP PLC and the DOI MMS had no effective plans, measures or preparations for mitigating the Cfs.

The developing record shows that BP PLC and the DOI MMS had ineffective QA/QC of BP PLC plans, operations and maintenance. Diligent and effective efforts are required to correctly detect, analyze and rectify important flaws during the life-cycle of "cutting edge" systems and operations.

How Can This Be Prevented?

The likelihood of such failures as the Deepwater Horizon blowout and the subsequent containment and clean-up operations can be reduced to desirable and acceptable levels by developing and implementing a leading, collaborative, and diligent Life-Cycle Risk Based Management (LC RBM) government and industrial regime to explore and develop a precious and vital public resource – offshore oil and gas reserves (life-cycle Safety Case regime).

The industrial LC RBM should be based on Pfs and Cfs assessed using qualitative and quantitative methods that develop and maintain Pfs and Cfs that are acceptable to the public and government, and that comply with the legal SOC, NEPA, OCSLA and the Public Trust Doctrine. Proactive, Reactive, and Interactive methods must be used to assure development of acceptable and desirable Pfs and Cfs during the life-cycle of the activities. Definition of the acceptable and desirable Pfs and Cfs is a social process that involves informed and respectful deliberations involving the affected publics, the governments, the industry, and environmental advocates. Of particular importance are laws promulgated by the administrative branches, enacted by the legislative branches, and interpreted – applied by the legal branches of government to help assure that acceptable and desirable Pfs and Cfs are incorporated and maintained in the systems used to explore for and develop public resources in very hazardous environments. These methods are founded on continuous effective efforts to reduce the likelihood and severity of malfunctions, and increase the likelihood of effective detection, analysis, and correction of malfunctions.

The OCS Lessees and the DOI MMS should develop and sustain:

- a technically superior, challenging, collaborative, and diligent program of life-cycle QA/QC based on effective and timely detection, analysis and correction of defects and flaws,
- High Reliability Organizations that effectively practice High Reliability Management (planning, organizing, leading, controlling) in all segments of the operations. This will require organizational Commitment (to develop acceptable P_f and C_f throughout the life-cycle), Capabilities (technical and managerial superiority), Cognizance (awareness of hazards and uncertainties that threaten acceptable P_f and C_f through the life-cycle), Culture (balancing production and protection), and Counting (development of acceptable costs, benefits, and profitability),
- programs of international industry – government – academia collaborative Research and Development projects and Public Outreach to help educate the public,
- long-term collaborations with international regulatory agencies to enable realization of continuous improvements and implementation of best practices in regulations of deepwater oil and gas exploration and production, and
- effective deepwater oil and gas development Technology Delivery System (TDS) that effectively engages the public interests, the responsibilities of the governments (of, by, and for the people), the technology of industry and commerce, and the stewardship of the environment.

These recommendations do not address the hardware, equipment, procedure, and structural elements associated with ultra deepwater exploration and production developments – the 'engineering technical' elements associated with these systems. These recommendations are based on analyses of the performance of previous systems summarized earlier. The primary challenge that must be properly addressed as a first priority are the human and organizational aspects. Experience clearly shows that if we are able to develop the 'right stuff' – High Reliability Organizations and Management, then systems (comprised of hardware, structures, operating personnel, operating and oversight organizations, procedures, cultures, and interfaces among the foregoing) that have acceptable reliability and quality characteristics will be realized. We must have the right stuff to realize the right things.

Professor Robert Bea, PhD, PE

Deepwater Horizon Study Group
Center for Catastrophic Risk Management
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Statement of
S. Elizabeth Birnbaum, Director
Minerals Management Service
Department of the Interior
Before the
House Committee on Transportation and Infrastructure
U.S. House of Representatives

May 19, 2010

Thank you, Mr. Chairman and members of the Committee, for the opportunity to testify about the U.S. Minerals Management Service (MMS) requirements regarding oil spill response plans. Before I begin my testimony, I want to express how saddened I and all MMS staff are over the tragedy that occurred on April 20, 2010, on board the Deepwater Horizon. Many MMS staff have worked their entire careers in an effort to prevent this kind of thing from happening, and we will not rest until we determine the causes so that we do everything possible to reduce the risk of its happening again.

The Deepwater Horizon oil spill has been declared a "spill of national significance" by the Department of Homeland Security and is of grave concern to the Minerals Management Service and the Department of the Interior. The Obama Administration and the Department are dedicating every available resource to ensure that BP and other responsible parties meet their responsibility to stop the flow of oil and clean up the pollution, and to comprehensively and thoroughly investigate these events.

At the Department Level, The Departments of the Interior (DOI) and Homeland Security are both members of the National Response Team, (NRT), and DOI is participating in the

Unified Area Command of which Admiral Landry is the Federal On Scene Coordinator, (FOSC), and the National Incident Commander is Admiral Allen, Commandant of the USCG. We have also begun a joint investigation between the Coast Guard and MMS to discover the causes. In addition, Secretary Salazar has established a new Outer Continental Shelf (OCS) Safety Oversight Board to conduct a full review of offshore drilling safety and technology issues. And, at the request of the Secretary, the National Academy of Engineering, a highly regarded organization affiliated with the National Academy of Sciences, will conduct an independent, science-based analysis of the causes of the Deepwater Horizon oil spill so that corrective steps can be taken to address any engineering or mechanical shortcomings that may be uncovered.

Overview

All leasing and drilling operations on the Federal offshore are governed by laws and regulations that strive to ensure safe operations and preservation of the environment. The MMS enforces compliance with these regulations and periodically updates rules to reflect advances in technology and new information. Changes in MMS regulations may result from outside recommendations or from MMS's ongoing review of technology and investigation of incidents in offshore operations.

The authority for MMS to regulate oil spill planning for affected facilities is derived from the Oil Pollution Act of 1990 (OPA-90) and Executive Order 12777. Direction to lessees regarding federal oil spill planning, preparedness, and response requirements is found at 30 CFR Part 254 (Oil Spill Response Requirements for Facilities Located Seaward of the

Coastline). These regulations became effective on June 23, 1997, and require that all designated operators of oil handling, storage or transportation facilities located seaward of the coastline submit an Oil Spill Response Plan (OSRP) to MMS for approval.

Each OSRP must be consistent with the National Oil and Hazardous Substances Pollution Contingency Plan, which falls under the jurisdiction of the National Response Team (the interagency body given oversight responsibility under the Oil Pollution Act), and with the appropriate Regional Contingency Plan. The national plan provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants. Regional Contingency plans fall under the National Response Team through the appropriate Regional Response Team. Nothing in this regulation relieves an operator of the responsibility to take all actions necessary to immediately abate the source of a spill and remove any spills of oil.

Pursuant to 30 CFR 254, a lessee is required to submit an OSRP to the MMS for approval before or concurrent with submitting an exploration plan or Development Operations Coordination Document (DOCD). The OSRP outlines the availability of spill containment and cleanup equipment and trained personnel. It must ensure that full response capability can be deployed during an oil-spill emergency. The Plan must include specifications for appropriate equipment and materials, their availability, and the time needed for deployment. The Plan must also include provisions for varying degrees of response effort, depending on the severity of a spill. The Oil Pollution Act requires that the OSRP identify and ensure the availability of private personnel and equipment necessary to respond to a worst-case discharge. A Regional OSRP covers multiple facilities or leases of a lessee or operator that are located in close enough proximity to be served by the same response equipment and personnel, have similar modeled spill trajectories and worst-case discharge scenarios, or have the potential to affect the same ecological or socioeconomic resources.

MMS reviews and approves these plans every two years unless there is a significant change that requires that the plan be revised immediately. Types of changes that would trigger a review include a change to the plan that significantly reduces the ability to respond to a spill, a change in the worst-case discharge scenario, or a change in oil spill removal organizations cited in the plan.

An OSRP must demonstrate that an operator can respond quickly and effectively whenever oil is discharged from its facility. The operator must immediately carry out the provisions of the plan whenever there is a release of oil from a facility. An owner or operator must also carry out the training, equipment testing, and periodic drills described in the plan, and these measures must be sufficient to ensure the safety of the facility and to mitigate or prevent a discharge or a substantial threat of a discharge.

BP's Regional OSRP that covered the Deepwater Horizon was first issued on December 1, 2000, and last revised on June 30, 2009. This Regional ORSP anticipated a worst-case discharge scenario of 250,000 barrels per day. BP's estimate for a worst-case discharge in their exploration plan for the well being drilled by the Deepwater Horizon was 160,000 to 162,000 barrels per day. Because the worst-case discharge estimate for this particular facility fell below the levels indicated in BP's Regional OSRP, BP was not required to submit a site-specific OSRP.

Functionally, an OSRP can be broken down into two parts. The first portion of the plan discusses what actions must be taken when a spill from a facility occurs and is referred to as the "Emergency Response Action Plan". This portion of the OSRP is the core of the overall plan; it describes how the operator will respond, who will be responding and what actions will be taken. This section provides details on the teams that will be responding to a spill, location for command center(s) for the response, and procedures for responding to and notifying the necessary Federal, State and local government agencies.

The second portion of the OSRP includes information that supports the Emergency Response Action Plan. This includes contractual agreements, a worst-case discharge scenario, plans for the use of dispersants and in-situ burning, and details on how the lessee or operator will conduct training on the plan and drill their personnel on the plan. The contractual agreements incorporated in this section are agreements between the lessee and companies that provide oil spill cleanup or other support services during a spill response, including oil spill cleanup organizations and oil spill cooperatives.

Personnel are trained on the procedures established by an OSRP during annual classroom instruction and through participation in tabletop exercises. The annual exercises expose personnel to the components of their OSRP and help them form an integrated understanding of how the various players in spill response work together. At a minimum, the exercise must test the Spill Management Team's organization, communication, and decision making in managing a response.

Members of the spill response operating teams that will operate oil spill response equipment are required to undergo annual hands-on training. The field training is focused on the safe deployment and operation of the various types of equipment that are listed in MMS-approved OSRPs such as the fast response unit, various skimmers, boom, and oil spill response vessels. During a triennial period, all of the various types of oil spill response equipment must be deployed during at least one of the deployment exercises. Those who are responsible for managing the operating team must also complete training on spill-reporting procedures, analysis of oil spill trajectories and predicting spill movement, and use and deployment strategies of oil spill response equipment.

In addition to the operating team training requirements, MMS also conducts both announced and unannounced oil spill drills to determine preparedness. On an annual basis, MMS conducts over 30 unannounced oil spill drills to verify that operators are prepared to quickly and efficiently respond to spills from their facilities. MMS also maintains a test tank in Leonardo, New Jersey, where operators may train in oil spill recovery under varying conditions.

The worst-case discharge scenario section of the OSRP calculates how much oil can be spilled from the facility and how the lessee would respond to such a spill. In the case of a well blowout, the owner or operator must describe how they would respond to the spill for thirty days. Regional OSRPs list the highest worst-case discharge for all facilities listed in the plan. If a facility covered by a regional OSRP has a larger worst-case discharge than that currently listed in the OSRP, then the plan must be revised with this new worst-case discharge scenario, or a new site-specific plan must be prepared.

Additionally, separate dispersant and in-situ burning plans describe how the operator would apply dispersants or burn the oil if a spill occurs from their facility and must be consistent with existing National and Regional Contingency Plans. The dispersant and in-situ burning plans include information on locations of dispersants and the equipment needed to disperse or burn the oil. Dispersants must be listed on the Environmental Protection Agency list of approved products before they can be considered for use in U.S. waters. The information required in an OSRP is described in detail in a Notice to Lessees, MMS NTL 2006-G21, along with the required format for submission.

Generally, an OSRP must be approved before a lessee may use that facility. There are conditions, however, where a lessee may operate their facility after a plan has been submitted and is awaiting approval. To operate a facility during that period, a lessee must certify in writing to the MMS Regional Supervisor that it has the capability to respond, to the maximum extent practicable, to a worst case discharge or a substantial threat of such a discharge. Further it must verify that it has a contract in place for the necessary private personnel and equipment to respond to the discharge.

In the Gulf of Mexico OCS Region, a lessee may submit a regional plan covering all of its Gulf of Mexico OCS operations. The approved regional OSRP is then referenced when exploration plans or DOCDs are submitted. All regional and site-specific OSRPs are required to be reviewed and updated annually, and all modifications of an OSRP are submitted to MMS for approval. MMS Regulations at 30 CFR 254 require lessees and operators of facilities in State waters with plans approved by the State to submit to MMS a copy of the plan and information pertaining to the State approval.

There are various review, update and amendment requirements for OSRPs. Following the initial submittal when a lessee starts operations within MMS jurisdiction, the OSRP must be updated every two years. As stated previously, an amendment must be submitted when: (1) A change occurs that significantly reduces spill response capabilities; (2) A significant change occurs in the worst-case discharge scenario or in the type of oil being handled, stored, or transported at the facility; (3) There is a change in the name(s) or capabilities of the oil spill removal organizations cited in the plan; or (4) There is a significant change to the Area Contingency Plan(s). Further, the MMS regional supervisor has discretion to require a modification if warranted. These modifications range from correcting telephone numbers to addressing significant shortfalls in the plan.

While MMS determines compliance with 30 CFR 254 and approval, other agencies and states have access to and may provide input to OSRP reviews. In the Gulf of Mexico, for example, digital copies of the MMS-approved OSRPs are maintained at the MMS office in New Orleans, Louisiana, are available for review by request, and would be sent to any state entitled to review for CZMA purposes as allowed by 15 CFR 930.58 as part of the proposed EP. Various Memoranda of Understanding/Memoranda of Agreement allow for Gulf coast states and the U.S. Coast Guard to review OSRPs; presently, Florida is the only state that has chosen to review the OSRPs in detail. Other states have limited their reviews to the worst-case discharge comparison in exploration plans and DOCDs.

Mr. Chairman, that concludes my prepared statement. I am also submitting for the record an MMS statement from a June 4, 2009 hearing before the House Science and Technology Subcommittee on Energy and Environment, because it contains information about MMS Oil Spill Research and Development efforts. Thank you for the opportunity to present an overview of the MMS's requirements for oil spill response plans associated with oil and gas activities on the OCS. I would be happy to respond to questions you or Members of the Committee have.

Statement of
Minerals Management Service
Department of the Interior
Before the
Committee on Science and Technology
Subcommittee on Energy and Environment
U.S. House of Representatives

"A New Direction for Federal Oil Spill Research and Development"

June 4, 2009

The Minerals Management Service (MMS) is the bureau within the Department of the Interior responsible for the management of the Nation's renewable energy, oil, natural gas, and other mineral resources on the Outer Continental Shelf (OCS) as well as the energy and mineral revenues from the OCS and from Federal onshore and American Indian lands. From the gasoline that powers our cars, the natural gas that heats our homes, and the benefits obtained through the disbursement of collected mineral revenues, the Nation and its citizens benefit from the efforts of the MMS.

The MMS has jurisdiction over approximately 1.7 billion acres of the OCS, on which there are about 8,100 active oil and gas leases. We work with other federal agencies, state and local governments, industry, and academia to achieve a common objective to maintain high standards for safety and the environment and to meet national economic, security and energy policy goals. The OCS is a significant source of oil and natural gas for the Nation's energy supply, providing about 14 percent of domestic natural gas production and 27 percent of domestic oil production.

MMS recently published the final rulemaking that provides the framework to grant leases, easements and rights of way for the orderly, safe, and environmentally responsible development of renewable energy resources on the OCS such as wind, wave, and ocean current.

The MMS has a robust regulatory system designed to prevent accidents and oil spills associated with OCS oil and gas exploration and production. However, whenever oil is being handled - whether in tankers, pipelines, or production facilities, whether onshore or offshore, and whether in the US or abroad - spills are a possibility. For that reason it is imperative that US and international agencies work together to prepare for oil spills in a comprehensive manner. This preparation includes continued improvement in response technology and procedures.

MMS is pleased to have the opportunity to present the Committee with information on the MMS Oil Spill Response Research Program and the operation of Ohmsett – The National Oil Spill Response Test Facility.

Overview

For more than 25 years, the Minerals Management Service (MMS) has maintained a comprehensive, long-term research program to improve oil spill response technologies. The major focus of the program is to improve the knowledge, technologies and methodologies used for the detection, containment and cleanup of oil spills that may occur on the OCS and disseminate findings through a variety of public forums such as workshops, conferences, peer-reviewed publications and the internet. The intent is to make this information widely available to oil spill response personnel and organizations world wide. The activities undertaken by the MMS oil spill response research (OSRR) program comply with the research and development provisions of Title VII in the Oil Pollution Act of 1990 (OPA-90).

The OSRR program provides research leadership to improve the capabilities for detecting and responding to an oil spill in the marine environment. In the past decade the OSRR program has been making progress in developing technological advances to improve the ability to clean up oil spills in Arctic environments. This includes development of systems, equipment and methodologies that can be used in extremely cold temperatures and in broken ice conditions. These advancements have allowed oil and gas exploration and development activities to move forward in Arctic offshore environments and will produce real cost savings.

The OSRR program is a cooperative effort bringing together funding and expertise from research partners in government agencies, industry, and the international community to collaborate on oil spill research and development (R&D) projects. The OSRR program operates through contracts with universities, government agencies and laboratories and private industry to assess safety-related technologies and to perform necessary applied research.

Funding for the OSRR program activities is appropriated from the Oil Spill Liability Trust Fund (OSLTF). MMS plans and implements OSRR projects that have multiple phases in a stepwise approach over several years, enabling the MMS to secure cooperative funding from private industry as well as countries that have offshore regulatory programs. The MMS OSRR program monitors and capitalizes on the efforts of other agencies and industry whenever possible through active partnering. More than 40 percent of the OSRR projects are Joint Industry Projects, where MMS partners with other stakeholders to maximize research dollars.

The MMS coordinates oil spill research closely with the National Oceanic and Atmospheric Administration (NOAA), the U.S. Coast Guard (USCG), and the Environmental Protection Agency (EPA) through participation on the National Response Team and on the Interagency Coordination Committee for Oil Pollution Research. This allows the MMS to foster collaborative research at the national and international level, optimize current and future research initiatives, minimize research duplication, and ensure that MMS's interests are addressed. Partnering has reinforced the MMS's oil spill response research and development and encouraged oil spill technology development efforts by academia and industry. The MMS has participated in the exchange of technological information with Canada, France, Germany, Japan, Norway and the United Kingdom through cooperative research projects, workshops and technical meetings.

Information derived from the OSRR program is directly integrated into MMS's offshore operations and is used to make regulatory decisions pertaining to permitting and approving plans, safety and pollution inspections, enforcement actions, and training requirements. The MMS as well as US and foreign government agencies and organizations worldwide utilize the results from the OSRR program and Ohmsett in making planning, regulatory, and emergency response decisions. Current OSRR projects cover a wide spectrum of oil spill response issues and include laboratory, meso-scale and full-scale field experiments.

Major topic areas include:

- Remote sensing and detection of spilled oil
- Physical and chemical properties of crude oil
- Mechanical containment and recovery
- Chemical treating agents and dispersants
- In situ burning

MMS Oil Spill Response Research

Success from the MMS OSRR program comes from a step-wise research approach to solve specific research needs that includes formation of joint industry projects to expand the scope and leverage program funds. Many significant technical advances in oil spill response can be attributed to successful multi-phase research projects that involve scientists worldwide. Applied research and the development of response strategies traditionally involve a combination of laboratory small-scale tests, meso-scale tank and basin experiments, and full-scale field trials. The MMS has used this approach to develop, initiate, and conduct more than 200 successful oil spill research projects.

Once the MMS has identified a research need or data gap in spill response we initiate and conduct a scoping project to define the current state-of-the-art for this technology or methodology. The results from these scoping projects are used to develop a systematic approach required to successfully address the data need. Communicating the results from these projects to government agencies and private industry is the next step to build consensus on the future research direction. A carefully focused work plan or agenda encompassing a priority list of projects is developed. It is generally beyond the capabilities of any one organization to fund these projects in their entirety. International cooperation, including governmental and industry participants, is needed to make substantial progress in the most important research and development areas. Given the specialized nature and limited number of researchers actively working on oil spill response, it is essential to involve different centers of expertise on a global scale. The MMS has initiated many successful joint industry projects (national or international) to leverage our program funds and expand the scope of the project to develop innovative or new technological advancements to detect, contain, and cleanup oil spills in the marine environment.

Ohmsett – The National Oil Spill Response Test Facility

The passage of the Oil Pollution Act of 1990 (OPA-90) significantly expanded MMS's role in oil spill research. Title VII of OPA-90 mandated the reactivation of Ohmsett – The National Oil Spill Response Test Facility located in Leonardo, NJ. The Interagency Coordinating Committee on Oil Pollution Research (created by OPA-90) delegated this responsibility to the MMS. Ohmsett is the only facility in the world where full-sized oil spill response equipment can be tested and training of first responders can be conducted with a variety of oils in a simulated marine environment under controlled conditions. The primary feature of Ohmsett is a large outdoor, above ground concrete test tank which measures 667 feet long (the approximate length of two football fields) by 65 feet wide, by 11 feet deep. It is filled with 2.6 million gallons of crystal clear salt water. Ohmsett is also the premier training site for spill response personnel from state and federal government agencies, private industry and foreign countries. This includes the U.S. Coast Guard Strike Team personnel. MMS now manages Ohmsett as part of its mandated requirements to ensure that the best and safest technologies are used in offshore oil and gas operations. On July 22, 2009, Ohmsett celebrated its 17th anniversary under MMS management and to date 24 countries have made use of the facility.

The facility provides an environmentally safe place to conduct objective, independent testing of oil spill response equipment as well as training responders. Many of today's commercially available oil spill cleanup products and services have been tested at Ohmsett either as off-the-shelf commercially available equipment, or as equipment or technology still under development. In North America, a large portion of existing independent performance data and information on containment booms and skimmers has been obtained through testing at Ohmsett. The MMS has expanded the capabilities of Ohmsett to test all types of oil spill response equipment and techniques. The testing capabilities of Ohmsett were recently upgraded to provide a simulated Arctic environment for cold water testing and training. This capability will allow Ohmsett to remain operational year round, offering testing, training and research. We now have the ability to test and evaluate fire resistant containment booms using an air-injected propane burner system that realistically simulates in situ burning at sea. We have added the capability to conduct effectiveness testing on a variety of chemical treating agents, dispersants, emulsion breakers, and sorbent products.

The use of chemical dispersants is another important option in oil spill response. The Ohmsett facility is a world leader in realistic dispersant effectiveness testing through the design and development of a calibrated, referenced and realistic test protocol and subsequent testing under cold and temperate conditions using fresh and weathered crude and fuel oils. The National Research Council strongly supported the use of wave tank testing in their recent review of chemical dispersants. Ohmsett is the world's largest wave-tank complex presently conducting such research, and is the logical venue for bridging the gap between laboratory and field testing.

The Ohmsett facility is developing the capability to conduct independent and objective performance testing of emerging marine renewable energy devices. The objective is to provide as realistic conditions in the model scale as possible including realistic parameters for wave heights, wave periods, and directional spreading water depth. The program includes the development of standard test protocols both nationally and internationally.

Ohmsett is an integral part of the MMS oil spill research program and is essential for fulfilling the agency's regulatory responsibilities under OPA-90. The facility directly supports MMS's mission of ensuring safe and environmentally sound oil and gas development on the OCS. Ohmsett is not only an important component of the MMS oil spill research, it is also a national asset where government agencies, private industry and academia can conduct full-scale oil spill research and development programs in a controlled environment with real oil. Ohmsett allows research, testing and evaluation of equipment, systems and methodologies, and responder training to take place in a controlled environment.

Significant Accomplishments of the MMS Oil Spill Response Research Program

Following are some examples of the significant accomplishments of the MMS OSRR Program and how these new technological advances are currently being operationally used worldwide to respond to oil spills in the marine environment.

1. Detection of Oil In, On, and Under Ice

The ability to detect reliably and map oil trapped in, under, on, or among ice is critical to mounting an effective response in Arctic waters. In the past, the only successful method for detecting the presence of oil in or under ice involved drilling holes through the ice sheet or by sending divers down under the ice to delineate the extent of a spill. This method is expensive, labor intensive, and exposes personnel to the vagaries of extreme weather.

In 1999, the MMS initiated a project to evaluate potential remote sensing techniques to detect oil trapped within and under ice. Of the many technologies recently reviewed, only ground penetrating radar (GPR) showed potential. Between 2003 and 2008 the MMS initiated four international joint industry projects to develop GPR into a functional remote monitoring sensor. Two of these projects conducted offshore Svalbard, Norway involved a permitted, intentional oil release for research purposes.

2. Oil Spill Thickness Sensor

One of the most important initial steps in response to an oil spill at sea is the assessment of the extent of the oil slick and the quantity (i.e. thickness) distribution of oil within it.

A critical gap in spill response is the lack of capability to measure and map accurately the thickness of oil on water and to rapidly send this information to response personnel in the command post.

In testimony given before the Subcommittee, Mr. Doug Helton of NOAA, cited the need for remote sensing technologies during the *Cosco Busan* oil spill to detect oil effectively, determine areas of the thickest amounts of oil, and then use this information to direct skimming operations to increase the recovery of spilled oil.

In November 2005, the MMS initiated a research project that would enable the measurement of oil slick thicknesses using multispectral aerial imagery. The California Department of Fish and Game, Oil Spill Prevention and Response (DFG/OSPR) partnered with MMS on this project and provided technical expertise with the Geographic Information System component of this project. Over a three-year period (2005-2008) the aerial mapping system was developed through a systematic approach which included many overflights of the Coal Oil Point, CA natural oil seeps. In November 2007, remote aerial sensing of the *Cosco Busan* oil spill was performed using the prototype thickness sensor mounted to a small plane and flown over the spill area to test the system under actual field conditions. The sensor performed as expected and could effectively identify the extent and high density areas of the spill. Under commercial application this aerial thickness sensor could have been used to prioritize clean-up activities. The full system integration flight of the aerial thickness mapping system was successfully completed in November 2008.

On December 7, 2008, there was an oil spill from Platform A in the Santa Barbara channel due to a ruptured tank. The California Department of Fish and Game, Oil Spill Prevention and Response used the aerial thickness mapping system to acquire image data. The data was immediately processed and made available to the Unified Command center for guiding response operations. The data was used to recover successfully the spilled oil over a five day period and none of the oil hit the shoreline.

3. Mechanical Containment and Recovery in Arctic Ice Environments
More than a decade of MMS research has focused on methods to improve the effectiveness of equipment and techniques for the mechanical recovery of oil spills in ice-infested waters. This research has substantially improved mechanical recovery of oil spills in Arctic environments. In October 2004, the MMS initiated a research project with the University of California, Santa Barbara (UCSB) to study the process of oil adhesion to the surface of oil skimmers and to identify parameters to improve their efficiency. Over a three year period (2004-2007), numerous laboratory, small and large scale tank tests were conducted to improve the mechanical recovery of oil. Research results demonstrated that changing the surface pattern of the drum will improve recovery efficiency by over 200%. The results from this research project were patented by UCSB and the principal investigator (PI). The PI was awarded her doctoral degree as a result of her research. There are at least six types of grooved skimmers being commercially sold around the world that resulted from this research.

4. In Situ Burn Research
MMS was designated as the lead agency for in situ burn research (ISB) in the Oil Pollution Research and Technology Plan prepared under the authority of Title VII of the OPA-90. The use of ISB as a spill response technique is not new, having been researched and employed in one form or another at a variety of oil spills since the 1960's. Burning as a response tool for oil spills in broken ice has been researched since the early 1980's using both tank tests and medium to large-sized experimental spills. Many scientists and responders believe this technique is among the best option for oil spill response in the Arctic, especially with a high degree of ice coverage. Between 1995 and 2003, the MMS partnered with the National Institute of Standards and Technology to conduct more than ten different ISB research projects.

To disseminate results of eight years of intensive ISB research, the MMS assembled a comprehensive compendium of scientific literature on the role of in situ burning as a response option for the control, removal and mitigation of marine oil spills. All operational aspects of burning are covered in detail. It contains more than 350 documents with over 13,000 pages and nearly one hour of video. The MMS has distributed more than 2,000 ISB-CD sets worldwide.

In situ burning is now considered a viable countermeasure for offshore oil spills. Regional Response Teams (RRT) and Area Committees are integrating the use of in situ burning into their response protocols and contingency plans. Overall the opportunity for use, growing inventory of equipment resources and the trend for Federal On Scene Coordinators (FOSC's) and RRT's to seriously consider and more readily approve its use indicate an expanded role for in situ burning in the Arctic.

5. Dispersants in Cold Water/Broken Ice Environments
The use of chemical dispersants in is another important option in oil spill response. The Ohmsett facility is rapidly becoming a world leader in realistic dispersant testing through the design and development of a calibrated, referenced and realistic test protocol and subsequent testing under cold and temperate conditions using a variety of crude and fuel oils. Ohmsett is the world's largest wave-tank complex presently conducting dispersant research and is a logical venue for bridging the gap between laboratory and field testing. The National Research Council strongly supported the use of wave tank testing in their recent review of chemical dispersants. In the past seven years there have been fourteen major dispersant research projects conducted at Ohmsett. Experiments at Ohmsett have demonstrated that dispersants are effective in near-freezing water temperatures but this is highly dependent on the properties of the crude oil. Dispersants can be effective in broken ice if there is some mixing energy present (wind, waves, movement of ice floes caused by wind, waves, and currents). Dispersants can potentially provide an invaluable third response option when strong winds and sea conditions make mechanical cleanup and in situ burn techniques unsafe and/or ineffective.

Results from dispersant testing at Ohmsett are being used by local, state and federal regional response teams and regulators to support the use of dispersants as an oil spill response tool in their jurisdictions. Results from dispersant testing in cold water/broken ice conditions at Ohmsett have been used by industry to gain regulatory approval for the use of this countermeasure for the Sakhalin Island project in Russia and for planned projects in the Canadian Beaufort Sea.

6. Chemical Herders

Spilled oil rapidly spreads on the waters' surface into very thin slicks. Chemical herders have the ability to quickly clear oil films from the waters' surface. The intention of herding is to thicken oil slicks sufficiently to allow them to be cleaned up with conventional mechanical containment systems or through the use of in situ burning or the use of dispersants.

Since 2004, the MMS and ExxonMobil have jointly funded research to evaluate using herders to extend the window of opportunity for oil spill response options in Arctic environments. Research efforts have focused on the use of herders to thicken oil slicks in broken ice to allow them to be effectively ignited and burned. Three years of laboratory, small and large scale tank tests were completed. In May 2008, two full scale burn experiments were successfully conducted during an intentional oil spill exercise offshore Svalbard, Norway. In February 2009, the MMS conducted research on the use of herders to improve the efficiency of mechanical containment and recovery systems. More than 400,000 pounds of ice was delivered to Ohmsett for these experiments. Research on the use of herders to expand the use of dispersants will be conducted at the Ohmsett facility in October 2009.

Oil Spill Response Research Outreach

The MMS collaborates with state, federal and international governmental agencies, organizations, and private industry to coordinate oil spill response research and Ohmsett testing. We also participate in international, regional and local conferences, workshops and meetings to present the results of MMS funded OSRR projects. We publish and disseminate the results of OSRR projects as widely as possible in peer reviewed scientific papers and articles, in technical journals and reports and in public information documents. The MMS sponsors and participates in Arctic related oil spill response workshops and conferences to disseminate results from the OSRR program and from Ohmsett testing, training and research activities to the public. The MMS maintains a website that contains a listing of all Arctic OSRR projects funded by the MMS as well as downloadable reports and film clips free of charge.

The Ohmsett facility also plays an important role in environmental outreach by informing the oil spill community of oil spills, environmental contamination, cleanup methods and testing. Ohmsett's recently renovated conference room enables various federal, state, academic and private organizations to conduct on-site committee meetings and conferences. Facility tours and presentations are given upon request. Regular attendance at both U.S. and international environmental conferences plays an important role in getting the information, the analysis and the results achieved from the research projects to the public.

Publication of The Ohmsett Gazette, the facility's semi-annual newsletter, keeps the oil spill community abreast of recently conducted facility activities. Ohmsett's website describes the testing that the facility conducts and gives objective results of the research conducted. Staff members also participate in environmental education projects such as school science fairs, college work study programs, and student mentorship programs. Through this type of public interaction, Ohmsett is able to increase public awareness by educating the community of the importance of marine safety and environmental protection.

The MMS Environmental Studies Program (ESP)

In addition to the Oil Spill Response Research, MMS also conducts the Environmental Studies Program which is designed to gather scientific information needed for stewardship of coastal and marine environments as we manage the development of OCS energy and minerals. A component of this broad-based program focuses on the collection and development of scientific information needed to understand and predict the fates and effects of potential oil spills from these OCS activities.

The MMS assesses oil-spill risks associated with offshore energy activities on the OCS by calculating spill trajectories and contact probabilities. These analyses address the likelihood of spill occurrences, the transport and fate of any spilled oil, and the environmental impacts that might occur as a result of the spill. The MMS Oil-Spill Risk Analysis (OSRA) Model combines the probability of spill occurrence with a statistical description of hypothetical oil-spill movement on the ocean surface. Paths of hypothetical oil spills are based on hindcasts (history) of winds, ocean currents, and ice in arctic waters, using the best available input of environmental information.

The research to support the oil-spill risk analyses includes scientific observations of the ocean surface circulation in the Gulf of Mexico, in the Santa Barbara Channel and Santa Maria Basin offshore Southern California, and in the Beaufort and Chukchi Seas off Alaska. In addition, MMS has sponsored development of ocean surface circulation models in these areas, as well as most recently in the mid-Atlantic OCS area, to provide input for OCS lease sale environmental analyses. As the oil and gas industry moved into deepwater areas of the Gulf of Mexico, we also undertook research to characterize the deepwater current movements in the Gulf of Mexico to assist our assessment of a possible release of oil from these ocean depths. In Alaska, we have sponsored research to better describe the weathering of oil on snow and ice, and we have sponsored field studies and modeling of sea ice – ocean movement and the interaction with spilled oil. The Environmental Studies Program research management philosophy always seeks out partners, and much of the research described is linked to programs in NOAA and NASA, as well as cooperative efforts with key universities in the affected States.

The MMS is committed to the continuous improvement of OSRA estimations and environmental impact statements (EIS) analyses, and uses the results of new observation and modeling to better manage OCS oil and gas development. As offshore activity expands into deeper waters and new geographic areas, MMS oil-spill modeling will be applied to pertinent risk assessments and validated with environmental observations.

Modeling results are used by MMS staff for preparation of environmental documents in accordance with the National Environmental Policy Act; other Federal and State agencies for review of EISs, environmental assessments, and endangered species consultations; and oil industry specialists preparing the oil spill response plans.

Conclusion

Mr. Chairman, this concludes MMS's prepared statement. Thank you for the opportunity to present an overview of the MMS's oil spill response research program and the Ohmsett facility. The program directly supports the MMS mission of ensuring safe and sound operations on the OCS and has made substantive technological advances in the ability to detect, respond and cleanup oil spills in the marine environment. MMS would be happy to respond to any questions.

TESTIMONY FOR THE U.S. HOUSE OF REPRESENTATIVES

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

MAY 19, 2010

TOPIC: DEEPWATER HORIZON: OIL SPILL PREVENTION AND RESPONSE MEASURES AND NATURAL RESOURCE IMPACTS

SUBMITTED BY: DR. SYLVIA A. EARLE

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To: Ianta.Summers@mail.house.gov

Chairman Oberstar, Members of the Committee:

Thank you for the opportunity to speak to you on behalf of the ocean and for people now and in the future who will be affected by the consequences of the Deepwater Horizon oil spill. That includes just about everyone on the planet, one way or another.

For more than fifty years , I have had experience on, around, above and under the Gulf of Mexico as a marine scientist and explorer, founded and led engineering companies devoted to development of equipment for access to the deep sea, served as a member of various corporate and dozens of non-profit boards and as a member of numerous state, federal and international committees concerning ocean policy. From 1990 to 1992 I was the Chief Scientist of the National Oceanic and Atmospheric Agency with up close and personal experience with the Exxon Valdez and Megaborg oil spills, as well as extensive involvement with evaluation of the environmental consequences of the 1990 – 1991 Persian Gulf spill.

As I speak, I will be showing a video of the underwater realms in the Gulf of Mexico produced by Dr. David Guggenheim taken during the five year Sustainable Seas Expeditions, a public-private partnership that I led involving the National Geographic, NOAA, the Goldman Foundation , and more than fifty industry, government, academic and other institutional partners using manned submersibles and remotely operated vehicles as well as conventional and unconventional diving methods to document the nature of the coastal waters of this country and some of our neighbors to the south with special reference to areas designated for protection as National Marine Sanctuaries --and to explore other places that, if protected, could provide urgently needed safeguards against the rapid degradation taking place in our nation's Exclusive Economic Zone owing to destructive fishing practices, pollution, climate change and other impacts. No where is this more critical than in the Gulf of Mexico, yet only the tiny Flower Garden Banks and small areas within the Florida Keys National Marine Sanctuaries is there modest sanctity for wildlife in the US Gulf waters.

Dr. Larry McKinney, who has conducted research in the Gulf of Mexico for decades remarked recently that as the present oil spill spreads, the Gulf of Mexico,the ninth largest body of water in the world, 615,000 square miles of blue, seems to be shrinking before our eyes. Threats include:

- Stress on the nation's valuable wetlands, 40% of such areas in the lower 48 states in Louisiana alone.
- Stress for the Florida west coast and the extensive seagrass meadows and marshes--nursery areas for fish, shrimp and other organisms and, given the intricate flow of the Loop Current and its many spinoffs, threats to the wetland and offshore areas of Mississippi, Alabama ,Texas, Mexico, the Florida Keys, Cuba and via the Gulfstream, the eastern seaboard of the United States – and beyond.
- Use of subsea dispersants injected at great depths , making it possible for deeper currents to move the oil's potential reach even further, and enhancing the toxic effect of oil with the toxic effect of the chemicals used to break oil into smaller droplets.
- Economic impacts, such as those assessed by scientists and economists at the Harte Research Institute -- a conservative figure of $1.6 Billion, taking into account losses including the production of ocean wildlife taken for food That does not measure threats to the billions of dollars in so-called free services provided by healthy reefs, marshes and seagrass meadows as natural filtration and shoreline protection systems. Nor does it account for impacts to the other priceless"free" services the living ocean renders to the nation's overall economy, to health, to security and ultimately, to the existence of life itself.

You have seen plenty of bad news images relating to the Deepwater Horizon oil spill. I want to illustrate here that the Gulf of Mexico is not, as some believe, an industrial wasteland, valuable primarily as a source of petrochemicals and a few species of ocean wildlife that humans exploit for food, commodities, and recreational fishing. These are assets worth protecting as if our lives depend on them, because in no small measure, they do.

In 2009, Volume I of the 8 volume series on the *Gulf of Mexico Origin, Waters and Biota* lists 15,419 species within 40 phyla – embracing most of the large categories of life on Earth -- covered in 79 chapters by 140 authors from 80 institutions in 15 countries. The idea for this was hatched by Drs. Wes Tunnell, Daryl Felder and myself during a conversation at the Harte Research Institute in Corpus Christi in 2001 while reflecting on the need to update the 1954 Fishery Bulletin 89, a classic reference that provides a benchmark concerning the biological, physical, chemical meterological and economic aspects of the Gulf. Biological data from the new series will appear electronically on the WEB in Gulfbase and OBIS – the Ocean Biogeographic Information System, an on-line, open access, globally distributed network of systematic, ecological, and environmental data established in 1999 by the ten year Census of Marinelife project. The Gulf of Mexico figures prominently in this year's celebration of Biodiversity of Life on Earth.

The Gulf of Mexico is a living laboratory, America's Mediterranean, a tri-national treasure better known for yielding hurricanes, petrochemicals, shrimp and, in recent years, notorious "dead zones," than for its vital role in generating oxygen, taking and holding carbon, distributing nutrients, stabilizing temperature, yielding freshwater to the skies that returns as rain – contributing to the ocean's planetary role as Earth's life support system. As with the ocean as a whole, the most important values we derive from the Gulf of Mexico are those we take for granted. We have, because at one time, we could. But that is no longer true. We now understand there are limits to what we can put into or take out of this or any other part of the ocean without unfavorable consequences – back to us.

It once seemed that -- as with the ocean as a whole – the Gulf was so big, so vast, so resilient, that nothing we could do could harm it. The benefits we believed would always be there, no matter how large the trawls, how long the nets, how numerous the hooks for catching ocean wildlife – or how many, how long or how deep the pipelines, drilling operations, seismic surveys or production rigs.

While yielding to the pressure to extract golden eggs from the golden Gulf, we have failed to take care of the Gulf itself. Destructive fishing pressure has depleted sharks, tunas, menhaden, groupers, snappers, tarpon, turtles, shrimp, crabs, lobsters. More than eighty percent of some species have been extracted in fifty years, more than 90 percent of the sharks, swordfish, marlin and most grouper species. Fewer than 10 percent of the bluefin tunas remain, and all of the monk seals that once abounded as far north as Galveston have been exterminated. Used for meat and oil, the last living one was seen in 1952.

The main excuse for killing seals and whales was for the extraction of oil to provide heat and light to enhance human societies. The shift to fossil fuels may have saved the whales and seals, but now we are killing mountains and downstream rivers and the sea beyond to extract coal. Excess carbon dioxide from burning fossil fuels – coal, oil, gas – is warming the planet and acidifying the ocean. Oil spills have become less frequent with the application of new technologies, but it doesn't take many large ones, whether during the transport or drilling, to remind us of the dire consequences of neglect.

Ironically, fossil fuels have powered civilization to new heights of understanding – including the awareness that the future of humankind depends on swiftly shifting to energy alternative that do not generate carbon dioxide and otherwise cause planet-threatening problems! Fossil fuels took us to the moon and to the universe beyond, and made it possible for us to see ourselves in ways that no generation before this time could fathom. They have provided the backbone of the extraordinary progress we enjoyed in the 20th century and now into the 21st. We now know that those of us now alive have participated in the greatest era of discovery and technological achievement in the history of humankind, largely owing to the capacity to draw on what seemed to be a cheap but by no means endless source of energy.

At the same time we have learned more, we have lost more.

Cheap energy, it turns out, is costing the Earth . . .so to speak.

Despite the enormous advance in knowledge, the greatest problem facing us now with respect to the Deepwater Horizon oil spill is ignorance, and with it, complacency.

Despite the years of research by hundreds of scientists and institutions, knowledge about the nature of Gulf of Mexico is still primitive, partly because the methods used for exploring the ocean are still primitive. Larry McKinney observes that we know more about the face of the moon than the bottom of the Gulf, and are better equipped to live and work in space than we are to explore the ocean on this planet.

We should be looking for the possibility of life in what is believed to be an ocean on one of Jupiter's moons, but why are we not at least as concerned about life in the ocean in this part of the solar system – the ocean that keeps us alive? Life in the sea, after all, supports the basic processes that we all take for granted – the water cycle, the oxygen cycle, the carbon cycle, and much more. With every breath we take, every drop of water we drink, we are dependent on the existence of Earth's living ocean.

Most of the heavy lifting concerning these benefits is accomplished by microorganisms – bacteria, phytoplankton, zooplankton. Headlines lament oiled birds, turtles, dolphins and whales, as they should, but where is the constituency concerned about oiled copepods, poisoned coccolithophorids, proclorococcus, diatoms, jellies, pteropods, squid, larval urchins, the eggs and young of this year's vital offspring of tuna, shrimp and menhaden? Not only is the unruly flow of millions of gallons of oil an issue, but also the thousands of gallons of toxic dispersants that make the ocean look a little better on the surface – where most people are – but make circumstances a lot worse under the surface, where most of the life in the ocean actually *is*.

The instructions for humans using Corexit, the dispersant approved by the EPA to make the ocean look better warn that it is an eye and skin irritant, is harmful by inhalation, in contact with skin and if swallowed, and may cause injury to red blood cells, kidney or the liver. People are warned not to take Corexit internally, but the fish, turtles, copepods and jellies have no choice. They are awash in a lethal brew of oil and butoxyethanol.

The technologies for finding, extracting and transporting oil and gas from the sea are as sophisticated as the those required to work hundreds of miles high in the sky, yet where is the comparable technology to safeguard the ocean when something goes wrong --such as when a blowout preventer malfunctions in 5000 feet of water? The technical expertise mustered to stop the flow of oil is the best in the world, but since those talented engineers were not required to focus on adequately dealing with such problems well in advance, the make-in-up-as-they-go-along solutions sound precarious, at best. Jamming a metal top hat over the leak? Threading a mile long straw into a torrent of toxic fluid? Stuffing garbage down the hole?

Human occupied, autonomous and remotely operated systems developed to support inspection, maintenance and repair have come a long way since offshore oil production began in the Gulf in 1947, but why aren't the US Coast Guard and NOAA provided with fleets of appropriate manned submersibles, ROVs, and AUVs to monitor and evaluate the oceans everyday, and be ready when needed to respond to emergencies such as the present one. Billions have been invested for ships, aircraft and spacecraft to provide these functions on and above the surface of the sea,and it has paid off mightily. But we have neglected technologies to explore, monitor and safeguard what is under the surface, and it is costing us dearly.

This year in this city, several celebrations were held to honor U. S. Navy Captain Don Walsh and Swiss explorer Jacques Piccard for their history-making descent seven miles down in the Mariana Trench, the deepest place in the sea. No one has been back since, and only two machines, the Japanese Kaiko, and the Woods Hole Oceanographic Institution's Nereus, have made successful journies there. Seven miles in the sky, meanwhile, people watch movies, take naps, eat lunch.

No one has descended to the greatest depth in the Gulf of Mexico, about three miles down in the Sigsbee Deep near Yucatan . In fact, no one knows for sure exactly where the deepest place in the Gulf is, or if they do, proving it has been an elusive goal.

Investment in new technologies to effectively explore, monitor and safeguard the ocean loom large on the short list of actions, coupled with the on-going support to keep them in operation. The fleet of U. S. submersibles, ROVs and AUVs presently available for scientific research and ocean care is more than pathetic. It is scandalous. The Alvin, after more than 40 years of productive service, is soon to be retired and her replacement is far from complete. The two Johnson-sea-link submersibles that have yielded priceless information and insights about the nature of the Gulf and the ocean beyond are no longer being supported at the Harbor Branch Oceanographic Institution. Only Japan, Russia, France, and now China have manned subs that can go to half the ocean's depth, and the new Alvin is expected to go only two and a half miles.

I could go on about the problems, but I have only a few minutes and would like to summarize with thoughts about solutions. While encouraging and supporting all-out efforts to stop the flow of oil, the following might be considered:

1. Halt the subsurface use of dispersants and limit surface use to strategic sites where other methods cannot safeguard critically important coastal habitats.

2. Immediately deploy subsurface technologies and sensors to evaluate the fate of the underwater plumes of oil, as well as the finely dispersed oil and chemicals and their impact on floating surface forests of Sargassum communities, life in the water column, and on the sea floor.

3. Immediately gather baseline data, both broad and detailed, to measure impacts and recovery.

4. Support operations to salvage and restore the 40 or so species of affected large wildlife species and their habitats.

5. Support initiatives to create large reserves in the Gulf to facilitate recovery and on-going health of the thousands of less conspicuous species and marine ecosystems, from the deepest areas to shallow shores. It is urgent that large areas of the Gulf of Mexico be designated for full protection from extractive activities. Protected areas are critically needed to safeguard important spawning areas for bluefin tuna, for grouper, snapper, sharks and even the wily species of shallow and deepwater shrimp. Aside from the importance of such areas for healthy ecosystems to survive, they are essential if fishing is to continue as a way of life in the Gulf. (No fish, no fishermen.)

Implementing and expanding the Islands in the Stream concept long proposed by NOAA for a network of marine protection in the Gulf would be a good place to begin.

6. Make substantial investments in human occupied, robotic and autonomous systems, sensors and stations for exploration, research, monitoring and

safeguarding the living ocean. The US Coast Guard, NOAA, the EPA and the USGS should have such resources available to complement ships, and air and spacecraft, and it is in the nation's best interest to support development of such facilities for use by non-federal research institutions as well.

7. Embark on expeditions to explore deep water in the Gulf of Mexico and establish permanent monitoring stations and protocols.

8. Encourage tri-national collaboration among scientists and institutions around the Gulf .

9. Mobilize good minds to address solutions such as the Gulf of Mexico Summit five years ago that helped launch a regional governance body of US and Mexican states. A new summit is being planned by the Harte Research Institute to take place later this year to address next steps to assure an economically and ecologically healthy Gulf of Mexico. Cuba, a country that some have been worrying about with respect to the possibility of oil spills heading north as exploration and drilling are picking up in that country, now is faced with worries about the consequences of a major spill from the U.S. heading south..

10. While investing in rapid expansion of safe energy alternatives, new standards of care need to be implemented for industries extracting oil and gas from the Gulf and elsewhere in US waters. Thorough documentation of the nature of the seafloor and surrounding region should be made public prior to operations such as drilling, establishing platforms and laying pipeline, and monitoring of changes to the environment measured and made publically available. Environmental issues need to be taken into account, and be the basis for excluding operations when necessary to protect vital environmental concerns. Transparency is vital.

Five minutes is time enough only to touch on a few major concerns, but I want to end by emphasizing the greatest threats, past, present and future to the Gulf, to the ocean, and to the future of humankind. That would be ignorance, and its terrible twin, complacency.

The loss of human lives, the destruction of the life-giving Gulf cannot be justified as an acceptable cost of doing business, but if we really do go forward with a commitment to do things differently henceforth, we will have gained something of enduring value. We must do better about thinking like an ocean, and thinking on behalf of those who will benefit – or suffer – from the consequences of our actions. Now, maybe for the first time, we know what to do. We still have a chance to make peace with the ocean.

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Harte Research Institute Book Series

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Gulf of Mexico Origins, Waters and Biota: Volume 1 Biodiversity (2009) .... by Darryl L. Felder and David A. Camp (eds.)

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Encyclopedia of Texas Seashells (2010).................... by John W. Tunnell, Jr. et al. (eds.)

Sea Level Changes on the Gulf of Mexico Coast (2010) by Richard A. Davis (ed.)

SYLVIA A. EARLE APRIL 2010

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Dr. Sylvia Earle is an oceanographer, explorer, author and lecturer, Explorer in Residence at the National Geographic Society, called *Her Deepness* by the New Yorker and New York Times, a *Living Legend* by the Library of Congress, and first *Hero for the Planet* by Time Magazine. She has years of experience as a field research scientist, expedition leader, government official, and director for corporate and non-profit organizations including the Kerr McGee Corporation, Dresser Industries, Oryx Energy, the Aspen Institute, the Conservation Fund, World Wildlife Fund, Conservation International, Ocean Conservancy, Ocean Futures, American Rivers, Mote Marine Laboratory, Duke University Marine Laboratory, Rutgers Institute for Marine Science and the Woods Hole Oceanographic Institution, and the National Marine Sanctuary Foundation. From 1980 to 1990 she served as Founder of Deep Ocean Engineering and from 1992 to 2007, she served as founder and chair of Deep Ocean Exploration and Research (DOER Marine) to further the development of new technologies for access to the sea.

In connection with her 2009 TED Prize, she founded Mission Blue, a non-profit organization dedicated to ocean exploration, research, and conservation aimed at developing networks of "Hope Spots," protected areas large enough to secure and restore health to the "blue heart of the planet" (www.mission-blue.org).

Formerly Chief Scientist of NOAA, Dr. Earle chairs Advisory Councils for the Harte Research Institute for Gulf of Mexico Studies; the Ocean in Google Earth; the Marine Science and Technology Foundation and the Schmidt Research Vessel Institute. She has a B.S. degree from Florida State University, M.S. and PhD. from Duke University, 19 honorary degrees and has authored more than 175 scientific, technical and popular publications, lectured in more than 80 countries, and appeared in hundreds of radio and television productions.

Dr Earle has led more than 100 expeditions and logged nearly 7000 hours underwater with a record solo dive to 1000 meters and nine saturation dives including leading the first team of women aquanauts during the Tektite Project in 1970. Her research concerns marine algae and deep water ecosystems with special reference to exploration, conservation and the development and use of new technologies for access and effective operations in the deep sea and other remote environments.

She has been awarded more than 100 national and international honors including the 2009 TED Prize, the Netherlands Order of the Golden Ark, the National Women's Hall of Fame, Academy of Achievement, and medals from the Explorers Club, the Philadelphia Academy of Sciences, Lindbergh Foundation, National Wildlife Federation, Sigma Xi, Barnard College, Society of Women Geographers, the National Parks Conservation Association, and the Natural Resources Council.

Peter Gerica Congressional Testimony May 19, 2010

-A month or so since the oil rig exploded, a cloud of uncertainty remains as to what the affects will be and are there any hidden surprises -- oil traveling in sub-tides vs. surface tides.

-There have been numerous precautionary inshore closures to prevent health risks and allow biologists to determine of oil has intruded these areas.

-Through the temporary closures and migration of fishermen, some have been able to keep working but others have not due to geographic restraints.

-In the areas that are open to harvesting there has been over crowding -- more fishermen in one area than ever before.

-The news media have been putting out reports that have confused the public to the extent that many elsewhere in the country feel as though the state is dripping with oil despite the oil spill, at the present time, being an offshore event.

-The most important thing is to stop the flow of oil so that clean up can begin and reassure the public that Louisiana seafood is still safe and available and any closures that have been made are precautionary. At this point in time no seafood has been contaminated by the oil spill.

-From Katrina, we know that public perception is key: local lakes were deemed toxic soup causing the industry to spend massive amounts of money on testing and promotion to prove otherwise.

-The Louisiana Seafood Promotion and Marketing Board worked for nearly two years to make sure that the public knew that only the highest quality of seafood was coming from our waters so that markets could be rebuilt by going to trade shows, festivals, hosting seafood cook-offs, etc.

-Similar efforts will be needed to remedy the current situation.

-Some unknown factors include:

What affect, if any, the materials used to disburse the oil will have on our seafood productions since most of our species lay their eggs offshore and depend on tidal movement to push them into nursery areas.

Shrimp and crabs are mostly annual crops. If a year class if lost to pollution or oil, will enough survive to create next year's crop.

Shrimp, crabs, and fin fish are able to move; oysters and clams are sedentary, the y can not move away from the pollution

While oysters are mostly consumed by people, species of clams in the Breton and Chandeleur areas are essential food for fin fish. Plankton and nutrients from the marshes are essential for the growth of shrimp, crabs, and juvenile fish.

-So much remains unknown:

It is too soon to draw any conclusions on how much damage the oil spill will or will not cause to the ecosystems of southern Louisiana. Not only must we worry about the leaked oil itself but also the chemicals and methods used to fight it.

With not as much seafood being produced will market shares be lost to imports, not only from elsewhere in the U.S. but to other countries?

Will fishermen, buyers, processors, retailers, etc. be able to survive another catastrophe while still recovering from Hurricanes Katrina and Rita?

TESTIMONY OF
LISA P. JACKSON
ADMINISTRATOR

U.S. ENVIRONMENTAL PROTECTION AGENCY

BEFORE THE
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES

May 19, 2010

Chairman Oberstar, Ranking Member Mica, and members of the Committee, thank you for the opportunity to testify today about oil spill prevention and response measures and natural resource impacts. The U.S. Environmental Protection Agency (EPA), in coordination with our federal, state, and local partners, is committed to protecting Gulf Coast communities from the adverse environmental effects of the Deepwater Horizon oil spill. My testimony today will provide you with an overview of EPA's role and activities in the affected Gulf Coast region following the April 20, 2010 Deepwater Horizon mobile offshore drilling unit explosion and resulting oil spill as well as a summary of our primary environmental concerns. I also want to express my condolences to the families of those who lost their lives and those injured in the explosion and sinking of the Deepwater Horizon.

BACKGROUND

EPA's Oil Spill Program focuses on activities to prevent, prepare for and respond to oil spills from a wide variety of facilities that handle, store, or use various types of oil. EPA regulates approximately 620,000 of these facilities, including oil production, bulk oil storage, and oil refinery facilities that store or use oil in above-ground and certain below-ground storage tanks. Additionally, EPA is the principal federal response agency for oil spills in the inland zone, including inland waters. Such inland zone oil spills may come from, oil pipeline ruptures, tank spills, and other sources.

EPA shares the responsibility of responding to oil spills with the U.S. Coast Guard (USCG). Further, we share the responsibility for prevention and preparedness with USCG and several other federal agencies. The USCG leads the response to spills that occur along the coast of the United States, or in the coastal zone, and EPA leads the response to spills that occur in the internal United States, or the inland zones. The exact lines between the inland and coastal zones are determined by Regional Response Teams (RRTs) and established by Memoranda of Agreement (MOAs) between regional EPA and USCG offices. EPA and USCG have a strong relationship and work closely on oil spill response activities regardless of where the spill occurs.

EPA'S OIL SPILL RESPONSE PROGRAM

Each year, billions of gallons of petroleum and other oils are transported and stored throughout the country, creating a significant potential for oil spills and serious threats to human health and the environment. Approximately 20,000 oil spills are reported each year to the federal government. While the severity of these spill reports varies widely, EPA evaluates as many as 13,000 spills to determine if its assistance is required. Usually, EPA either manages the oil spill response or oversees the response efforts of private parties at approximately 300 spills per year. After an oil spill occurs, EPA frequently provides technical assistance which may include air and water monitoring support, mobilizing our On-Scene Coordinators (OSCs) and EPA's Special Teams including the Environmental Response Team and the National Decontamination Team to assist with the response. The Special Teams are comprised of highly-skilled environmental experts and utilize modern, sophisticated, and innovative technologies for oil spill response.

EPA'S OIL SPILL RESPONSE COORDINATION WITH THE USCG

The National Contingency Plan (NCP) is the federal government's blueprint for responding to both oil spills and hazardous substance releases. Additionally, it provides the federal government with a framework for notification, communication, and responsibility for oil spill response. The NCP established the National Response Team (NRT), comprised of fifteen federal agencies, to assist responders by formulating policies, providing information, technical advice, and access to resources and equipment for preparedness and response to oil spills and hazardous substance releases. EPA serves as chair of the NRT and the USCG serves as vice-chair. However, the USCG is the incident-specific Chair for the Deepwater Horizon oil spill response.

In addition to the NRT, there are thirteen RRTs, one for each of EPA's ten regional offices and one each for Alaska, the Caribbean, and the Pacific Basin. RRTs are co-chaired by each EPA Region and its USCG counterpart. The RRTs are also comprised of representatives from other federal agencies and state representation, and frequently assist the federal OSCs who lead spill response efforts. The RRTs help OSCs in their spill response decision making, and can help identify and mobilize specialized resources. For example, through the RRT, the OSC can request and receive assistance on natural resource issues from the Department of the Interior, or borrow specialized equipment from the Department of Defense. Involvement of the RRT in these response decisions and activities helps ensure efficient agency coordination while providing the OSC with the assistance necessary to conduct successful spill response actions.

Each spill has only one OSC, designated from either the USCG or the EPA. EPA is responsible for maintaining the NCP Product Schedule, which lists chemical and biological products available for federal OSCs to use in spill response and cleanup efforts. Due to the unique nature of each spill, and the potential range of impacts to natural resources, OSCs help determine which products, if any, should be used in a particular spill response. If the application of a product is pre-authorized by the RRT, then the OSC may decide to use the product in a particular response. If the product application does not have pre-authorization from the RRT, then the OSC must consult with the RRT regarding its use.

THE DEEPWATER HORIZON OIL SPILL

On April 22, 2010, the mobile offshore drilling unit (MODU) Deepwater Horizon, owned and managed by Transocean and contracted by BP P.L.C., sank after an explosion and a severe fire. Since that time, several thousand barrels per day of crude oil is being released into the Gulf of Mexico. The USCG, as the federal On-Scene Coordinator for the oil spill response, is implementing its responsibility to lead the federal environmental response actions in the coastal zone and is overseeing all response operations, including those made by BP.

The Secretary of the Department of Homeland Security has classified this oil discharge as a Spill of National Significance (SONS) and the USCG Commandant has been designated the National Incident Commander (NIC). EPA has integrated some of its staff into the Unified Area Command (UAC) as well as the local incident command posts. We have developed monitoring and assessment plans for surface and subsurface dispersant application, and we are providing technical assistance, air monitoring, and water quality sampling at several locations in Louisiana, Mississippi, and Alabama to assist in the oil spill response.

Air quality monitoring

EPA responders are monitoring for particulate matter, hydrogen sulfide, and total volatile organic compounds (VOCs) associated with the oil as well as the in situ burns. We are also monitoring ozone levels and testing for specific VOCs that are present in crude oil: benzene, toluene, ethylbenzene, xylene and napthalene. We are operating a network of fixed air quality monitoring stations in the Gulf Coast region and specially deployed monitoring and sampling equipment. In addition, EPA has deployed its twin engine aircraft, the Airborne Spectral Photometric Collection Technology (ASPECT), to detect chemical constituents associated with the oil spill, as well as to monitor for particulates over the in situ burns. We have also brought in two Trace Atmospheric Gas Analyzers (TAGA) mobile laboratory "buses" which are capable of real-time sampling and analysis, and can detect a range of chemical contaminants at very low levels. The TAGA mobile labs have specialized sampling equipment that can be used at remote locations to measure air quality. Additional response air monitoring and sampling sites have been set up by EPA response teams near Venice and Chalmette, LA, Mobile, AL and Ocean Springs, MS. In addition, we are also coordinating data collected from state monitors, and we are analyzing and tracking this information daily to note any unusual readings that might indicate changes in air quality that could trigger a call for action to protect public health.

Water quality monitoring

EPA teams are conducting surface water monitoring activities along the Gulf Coast. EPA is also collecting water quality and sediment samples in areas not yet affected by the oil release, in order to establish a data baseline. Based on the tests at the shoreline completed to date, water quality does not currently pose an increased risk to aquatic life in tested areas; however, EPA will continue to sample and test water to more fully assess water quality. We are currently developing post-impact water quality monitoring plans which will enable us to analyze water and sediment samples to detect chemicals found in oil as well as the chemical constituents of the dispersants that are being used in the oil spill response.

Use of Dispersant

When this crisis occurred, the federal OSC granted BP authorization to use approved dispersant on oil on the surface of the water in an effort to mitigate the shoreline impacts of the oil spill on fisheries, nurseries, wetlands and other sensitive environments. The OSC's authorization includes water quality monitoring and the dispersant being applied in order to ensure the protection of the environment and public health in affected areas. Dispersants contain a mixture of chemicals, that, when applied directly to the spilled oil, can break down the oil into smaller drops that can sink below the water's surface. Dispersed oil forms a "plume" or "cloud" of oil droplets suspended in the water. The dispersed oil mixes vertically and horizontally into the water column and is rapidly diluted. Naturally occurring bacteria and other microscopic organisms' biological processes can degrade the oil droplets over time. At this time, BP is authorized to continue aerial application of dispersants on the oil slick afloat on the water. Each aerial application is capable of treating a surface area of up to 250 acres. EPA is constantly monitoring air and water quality in the Gulf Coast area to ensure the health of nearby residents in protected. The results are posted on EPA's web site as it becomes available.

Because of the magnitude of the Deepwater Horizon Oil Spill, the RRT authorized BP to conduct tests of a new approach to use dispersants underwater, at the source of the oil leaks. The test data was evaluated to determine the efficacy of subsurface application and it was determined that BP can move forward with full-scale application contingent upon following an adaptive monitoring plan. An EPA/USCG joint directive specifies requirements for BP to follow for subsurface dispersant applications and includes evaluation criteria for the RRT to shut-down subsurface application. As we learn more we can adjust our criteria. We will closely monitor the data, and adjust the plan as appropriate.

Under the current directive, the RRT will evaluate the conditions above, in addition to all relevant factors including surface water data and other human health and ecological impacts, to determine whether subsurface dispersant application should be shut down. Additionally, EPA will also be conducting independent surface water and air monitoring for petroleum and dispersant constituents. Since the subsurface application was initiated, dissolved oxygen levels are within normal ranges. Initial studies indicate that the subsurface application of approximately 10,000-15,000 gallons of dispersants have the equivalent effect on the oil as the surface application of approximately 50,000 gallons of dispersant. Thus, the subsurface application of dispersants is much more efficient and could result in far less dispersants being released into the environment.

It is important to understand that the use of dispersants has environmental trade-offs. Dispersants are generally less toxic than the oils they break down. We know that surface use of dispersants decreases the environmental risks posed by oil spills to shorelines and organisms that live in surface waters. When used this way, dispersants usually break down over the course of weeks. However, the long term effects of dispersants on aquatic life are unknown, which is why EPA and the Coast Guard are requiring BP to implement a sampling and monitoring plan. The federal oil spill response ensures that dispersant operations are constantly monitored to detect any adverse environmental effects that may outweigh the expected benefits of applying dispersants to the BP oil spill.

NEXT STEPS

The Deepwater Horizon Oil Spill is a massive and potentially unprecedented environmental disaster that has already impacted the lives and the livelihoods of countless people in the Gulf Coast region. While BP is a responsible party for this oil spill, EPA has been working alongside many federal and state agencies to implement emergency oil spill response actions since day one. EPA's Headquarters Emergency Operations Center is fully operational and is monitoring the overall oil spill response operation.

EPA is also preparing for a potential support role in shoreline assessment and cleanup operations. EPA's support work may include continued sampling and analysis, identifying and prioritizing sensitive resources, and determining the need for cleanup and recommending cleanup methods and endpoints. We are working within the Unified Command to promote oil recovery and recycling and also to identify landfill locations for any collected oil, oil contaminated booms and other contaminated response materials. EPA, in coordination with the Gulf Coast states, will continue to provide information to both workers and the public about monitoring results and will help to address local community concerns.

CONCLUSION

EPA will continue to provide full support to the USCG and the UC, and will continue to take a proactive and robust role in monitoring, identifying, and responding to potential public health and environmental concerns. As local Gulf Coast communities assess the impact of the Deepwater Horizon oil spill on their economies, EPA, in partnership with other federal, state, and local agencies, as well as other community stakeholders, will devote its efforts necessary to assist in the oil spill response. At this time I welcome any questions you may have.

Enclosure

U.S. Environmental Protection Agency
Responses to Questions for the Record from the
May 19, 2010 Hearing on "Deepwater Horizon: Oil Spill Prevention and Response Measures, and Natural Resource Impacts"
Before the
House Committee on Transportation and Infrastructure

Questions submitted by Chairman James L. Oberstar:

(1) As you know, concerns have been expressed about the potential impacts of oil dispersant usage on the health and well-being of the Gulf of Mexico community. I have talked to scientists about how EPA can best understand the short- and long-term impacts of dispersant on the Gulf. They have recommended sampling the levels of chlorophyll in the water column, calculating the number of living and dead organisms in the water, and sampling for the presence of toxic chemicals from both the oil itself and the chemical dispersant. These scientists have also stressed the importance of knowing what is in the water, including the presence of spawning species that are more susceptible to toxins than adult species.

May I have your commitment to ensure that this and other necessary information is collected so that your agency can carry out its responsibilities for protecting the health of the Gulf community and its resources?

Answer:
EPA recognizes and shares your concern regarding the potential impacts, both short and long-term, of the use of large quantities of dispersants during operations to contain the spill. Dispersants serve as an important tool to keep oil from impacting sensitive wetlands, beaches, and marshes. The unprecedented nature of the continuous discharge of crude oil and the threat that oil poses to the Gulf's sensitive coastal ecosystem required the response to utilize various methods of spill management strategies, practices, and technologies including containment, mechanical removal techniques (booming and skimming operations), and *in-situ* burning, before using dispersants.

There are environmental tradeoffs and uncertainties associated with the widespread use of extraordinary quantities of dispersants. We know dispersants are generally less toxic than the oils they breakdown. We also know that surface use of dispersants decreases the environmental risks to shorelines and organisms at the surface and when used this way, dispersants breakdown over several days. Still, it is crucial to continue to monitor impacts to water quality or impacts to organisms.

On May 10, 2010, EPA and the U.S. Coast Guard (USCG) issued a Directive requiring BP to implement a monitoring and assessment plan for subsurface and surface applications of dispersants as part of the Deepwater Horizon oil spill response. To date, the toxicity data generated from this monitoring does not indicate significant effects on aquatic life. Moreover, decreased size of the oil droplets is a good indication that, so far, the dispersant is effective. We are closely watching the dissolved oxygen levels, which so far remain in the normal range. EPA is also collecting and analyzing air, water, and sediment data for dispersant constituents and has not detected any issues of concern.

(2) During the question and answer portion of the hearing, you mentioned that the country was using outdated techniques and equipment to respond to the spill, which is in glaring contrast to the technological advances corporations have made in order to extract oil and natural gas resources.

In terms of the EPA's ability to be adequately prepared and able to respond to spills in the future, what is EPA currently lacking? What items, options, or authorities does EPA need to improve its preparedness and ability to respond to oil spills in the future?

Answer:
The Gulf oil spill has revealed knowledge gaps associated with oil spills and response techniques, and their impact on human health and the environment. While it is premature to draw any conclusions or cost estimates, EPA, in collaboration with our federal partners (e.g. NOAA, US Coast Guard), should consider future research to include:

Studies and testing to assess fate, transport, and biodegradation of dispersant and dispersed oil. Research is needed to compare short- and long-term degradation of oil that is and is not dispersed, in varying conditions (temperature, salinity, pressure, etc.). Such research will address the environmental fate of the oil and dispersants, the physical transport of plumes, and the persistence of oil and dispersants in the environment.

Studies to evaluate the efficacy of dispersants. More research is needed on the short- and long-term effectiveness of dispersant use, to improve the Regional Response Team's weighing the environmental tradeoffs of dispersant use. As with the biodegradation studies, the dispersant efficacy studies should be conducted using a range of conditions such that information will be readily available to inform a variety of scenarios.

Studies to evaluate inhalation hazards. We need research on the air inhalation risks of spilled oil, spray-applied dispersants, and dispersed oil. Air pathway research on the oil and dispersant products is needed to better evaluate human exposure from inhalation of these substances.

Updated assessment methods for evaluating products. Research should be conducted to evaluate current methodologies and identify improved approaches to assess product efficacy and safety. In addition, research is also needed to develop and evaluate sustainable and "green" restoration approaches and innovative technologies.

(3) As you know, under the natural resource damages provision of the Oil Pollution Act of 1990, individuals in the Gulf of Mexico whose lives and livelihoods have been adversely affected by this disaster are required to make individual claims to BP or the Oil Spill Liability Trust Fund. However, one of the criticisms following the Exxon Valdez Spill was

that much of the information necessary for damaged parties to make a claim was withheld from the public - either by the responsible party or by the Federal government.

What are you doing to ensure that all of the information collected by BP and the Federal resources agencies is made publicly available so that affected individuals can know the true extent of the damage caused by this disaster?

Answer:
EPA is committed to keeping the public informed about its response efforts. EPA posts monitoring and sampling data and information on our website: www.epa.gov/bpspill. EPA also collaborates with its federal partners to ensure that information is made public, as it becomes available. Information is also provided to the Joint Information Center for posting on the Deepwater Horizon website. In addition, on May 20, 2010, EPA and the Department of Homeland Security (DHS) issued a joint letter directing BP to post on the internet all data and information regarding the Deepwater Horizon Spill. We will continue to monitor this process to ensure that information is released to the public in a timely fashion.

(4) As the responsible party for the Deepwater Horizon Disaster, BP has been taking the lead role in attempting to control the ongoing release of oil, as well as the containment and cleanup of millions of gallons of oil that has been released into the environment. Because of the unique nature of this spill, and the depths at which the release is occurring, it appears that the Federal response and oversight is heavily dependent up on the accuracy of information being provided by the responsible party to the Federal Agencies and to the public. However, it also seems to me that there is a perverse incentive for the responsible party to be forthcoming with information that could affect the scope of its eventual liability for the spill.

Has BP provided you with the information necessary for your agencies to do your Jobs--to protect the health and welfare of those living and working in the Gulf region? In your opinion, has BP met its fiduciary obligations to the American people to publicly disclose all it knows about the spill and the ongoing response and recovery actions?

Answer:
In response to the directive from EPA and the USCG dated May 10, 2010, BP has collected specific data to help determine the impact of the oil and dispersant released into the Gulf of Mexico. In addition, EPA has been collecting air, water and sediment samples for chemical assessment and analyzing the data independently prior to posting the information on our website. EPA and the USCG issued a joint letter on May 20, 2010 directing BP to release all data and information regarding the Deepwater Horizon Spill. To our knowledge, BP has responded to these directives. EPA will continue to monitor this process to ensure that information is released to the public in a timely fashion.

(5) As you are aware, a huge, hypoxic "dead zone" appears in the Gulf of Mexico every year, which can span up to 8,000 square miles, or roughly the size of the State of New Jersey.

Are you worried that the oil spill, including any subsurface oil plumes, will exacerbate the dead zone in years to come? How does EPA plan to mitigate the impact on the dead zone?

Answer:
The hypoxic or "dead zone" in the Gulf of Mexico is an annual temporary condition. The timing and location of low dissolved oxygen conditions in coastal waters is well documented. There are studies that link the frequency and volume of the annual oxygen depletion to increased nutrient inputs, which causes eutrophication in surface water. Due to the increase in nutrient loading, biological activity is increased, causing the consumption of available oxygen. Following the increase in biological growth, the resulting organic matter drops through the water column to the lower strata and the degradation of that material reduces oxygen levels in the lower strata.

EPA and our federal partners are monitoring the dissolved oxygen levels in the oil spill area as part of the evaluation of the use of dispersants in the Gulf. Dissolved oxygen levels are one of the key factors used in evaluating whether to curtail subsea dispersant application. Continued monitoring of dissolved oxygen levels at various depths and locations will help identify potential areas of hypoxia. To date, dissolved oxygen levels have been within acceptable levels. EPA's water quality monitoring data related to the Deepwater Horizon oil spill is available at http://www.epa.gov/bpspill/water.html#data.

The natural response of mobile organisms to low oxygen levels in the water will be to seek more oxygenated waters to inhabit. Consequently, it is important to quickly disperse the oil and to closely monitor dissolved oxygen levels in the spill area to minimize the impact on the mobile aquatic species.

(6) It appears that the oil from the spill as well as the efforts to clean up the oil using dispersants and in-situ burning could impact both water and air quality. In order to assess those impacts, testing is needed for a number of constituents on water samples, sediment samples, fish-tissue samples, and air.

Is EPA committed to completing a full suite of multi-media testing in the Gulf? Will EPA commit to making all of this data publicly available so that communities can make decisions about whether to stay or leave areas that are impacted by degraded air quality or degraded water quality as a result of the spill?

Answer:
Yes, EPA is collaborating with our federal partners on a wide range of air, water, and sediment sampling and monitoring efforts to fully understand the human health and environmental impacts associated with this spill and response efforts. To date, EPA has provided all water, air and sediment sampling data on a response website: www.epa.gov/bpspill. EPA will continue these activities throughout the emergency response and provide such assistance to our Federal partners beyond response, throughout the natural resource damage assessment and restoration stage, as needed.

Testimony to the U.S. House of Representatives
Committee on Transportation and Infrastructure
May 19th 2010
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Oil Spill Research and Development

Chairman Oberstar, Ranking Member Mica, and distinguished members of the Transportation and Infrastructure Committee, thank you for the opportunity to appear before you today on behalf of the University of New Hampshire and the Coastal Response Research Center.

Despite the significant advances in spill response made since the 1989 *Exxon Valdez* spill in Alaska, there are still significant gaps in knowledge about many aspects of oil spill response and restoration. Significant knowledge gaps exist with respect to the long-term fate and behavior and three dimensional (3D) predictive modeling of oil, especially if it is dispersed, submerged or emulsified. This lack of knowledge limits our ability to respond efficiently to spills, and increases the risk of damage to natural resources and the environment.

It is well documented that throughout history, accidents and failures lead to significant changes in engineering design and public policy. (Petroski, 1992 and 2008). The 11 million gallon *Exxon Valdez* oil spill is no exception. It resulted in some of the toughest requirements and restrictions aimed at reducing the frequency and impact of future oil releases (e.g., double hull requirements for all tankers entering U.S. waters). The U.S. congress passed the landmark Oil Pollution Act of 1990 (OPA 90) in direct response to the *Exxon Valdez* incident. This legislation fundamentally changed oil spill prevention, preparedness, response and restoration in the United States. The requirements set forth by OPA 90 are divided into five categories: (1) Prevention; (2) Preparedness; (3) Response; (4) Liability and Compensation; and (5) Research and Development (R&D). The Minerals Management Services (MMS), U.S. Coast Guard (USCG), and the National Oceanic and Atmospheric Administration (NOAA) were designated as the three key federal agencies responsible for overseeing and conducting research and development (R&D) associated with preventing and responding to oil spills, and the restoration of damaged natural resources as a result of spills. These three agencies have different R&D initiatives, each focusing on different aspects of the requirements under OPA 90.

MMS developed the Technology Assessment and Research Program (TA&R) to ensure that oil and gas exploration and production operations on the Outer Continental Shelf incorporated the use of the Best Available and Safest Technologies (BAST). This program has two categories of research activities which fall under prevention, preparedness and response: Operational Safety and Engineering Research, and Oil Spill Response Research. The Technology Assessment and Research Program, within MMS, conducts R&D on all operations associated with offshore drilling. Some examples of R&D initiatives investigating prevention include blowout preventer procedures, deepwater drilling, deepwater structure assessment, strumming of risers and subsea inspection. Response and cleanup R&D initiatives within TA&R include remote sensing and detection, physical and chemical properties of crude oil, mechanical containment and recovery, chemical treating agents and dispersants, and in situ burning.

Funding for MMS's R&D program is provided through the Oil Spill Liability Trust Fund (OSLTF) tax on imported and domestic oil, as stipulated in OPA 90. While MMS studies prevention of oil spills from a drilling, deepwater, and pipeline perspective, USCG looks at vessel design, regulations and operations. For example, by 2015 all tank vessels must be double hulled. The USCG is the lead for all tactical operations during oil spill response; therefore their R&D initiatives have included improving Area Contingency Plans, resource allocation (e.g., boom, vessels, aircraft), oil spill drills and exercises, and response and cleanup tactics (e.g., dispersant efficacy and application, skimming technology).

The Office of Response and Restoration (OR&R) within NOAA oversees scientific activities associated with oil spills. There are two divisions within OR&R, Emergency Response Division (ERD) and Assessment and Restoration Division (ARD). ERD focuses on spill response and cleanup R&D, while ARD focuses on natural resource damage assessment (NRDA) and restoration R&D. OR&R focuses on the fate, behavior and effects of oil in the environment. Some examples of specific studies include: Dispersant toxicity, biodegradation of oil in marshes and other sensitive habitats, impacts to fisheries, characteristics of submerged oil, and human dimensions relating to oil spills. OPA90 does not authorize R&D funding for NOAA, and all research must be funded by specific congressional appropriations.

The three major roadblocks that impede progress on oil spill research needs are: (1) lack of funding from the federal government and/or industry; (2) Insufficient agency and stakeholder cooperation from the oil spill community; and (3) lack of robust peer-review requirements for oil spill research.

In response to these roadblocks, The Coastal Response Research Center (CRRC) (http://www.crrc.unh.edu), a partnership between NOAA OR&R and the University of New Hampshire, was formed in 2004 to address the need for improved spill response and restoration. The center oversees and conducts independent research, hosts workshops, and leads working groups that address gaps in oil spill research in order to improve response, speed environmental recovery, and reduce the societal consequences of spills. Created by a memorandum of agreement between the University of New Hampshire and NOAA in 2004, CRRC acts as an independent, non-partisan entity to bring together members of the oil spill community, as well as those in relevant fields outside the spill community, including local stakeholders, and state, federal and international agencies to address the many technical, economic, social, environmental issues associated with oil spills in marine environments.

The Center is served by a multi-agency Advisory Board, comprised of members from U.S. EPA, NOAA, USCG, state-based R&D programs, and industry, that provides guidance on program direction. The board, in conjunction with the UNH and NOAA co-directors, developed five objectives for the CRRC: (1) funding of relevant, peer-reviewed research that is able to be developed into practical improvements in oil spill response; (2) hosting topical workshops and working groups that include representatives of all spill community stakeholders to focus research efforts, and ensure that crucial real-world experience from oil spill practitioners is considered; (3) Educating the next generation of spill responders through outreach and support of undergraduate and graduate student projects; (4) Involving members of the international oil spill community to tap into expertise from around the world; and (5) developing tools to aid responders in response to spills.

Funding of relevant, peer-reviewed research is accomplished through a periodic request for proposal (RFP) process. Proposals are reviewed by a multi-disciplinary Science Advisory Panel comprised of experts in areas of the proposed the proposal research. Proposals are ranked by their scientific validity and how well they address key research needs related to the fate, behavior and effects of oil in the environment and are likely to lead to practical improvements in oil spill response and restoration. A panel of leading scientists and practitioners then review the peer-reviewed and ranked proposals and recommend which should be funded by the CRRC. Each funded research project is assigned a NOAA liaison to ensure the research can be transformed into practice, and in addition, the CRRC's Science Advisory Panel meets annually to review progress of the research and provide feedback to improve the quality and efficacy of the research.

Since its inception in 2004, CRRC has hosted over 20 workshops on a wide variety of topics across the spectrum of oil spill R&D needs, and led working groups on: Oil Dispersants; Modeling of oil in the environment; Submerged oil; Toxicity; and Ephemeral data needs. The workshops (Table 1) have identified deficiencies in response and restoration, while the working groups (Table 2) help coordinate which agency funds specific R&D projects to avoid duplication of effort.

CRRC has provided funding for four masters students and two Ph.D. students who have conducted research topics as diverse as movement of submerged oil, human dimensions of oil spills, and biodegradation potential of oil in Arctic environments. CRRC has also helped to educate numerous undergraduate students who participated in workshops as recorders, and assisted with graduate student research projects.

Despite the large volume of oil spill research conducted internationally, there has been a reluctance to incorporate this information in U.S. spill response. CRRC, as an independent academic institute, has brought together spill responders and researchers from the U.S., Canada, Norway, Russia, Finland, Sweden, and Denmark and many more together to discuss oil spill response issues, and has funded several proposals that include international research partners.

In keeping with its mission to ensure that research is transformed into practice, CRRC has created several spill response tools that are in use today, including the Environmental Response Management Application (ERMA), the Oil Spill Toxicity Field Guide, and the Clarkson Deepwater Oil and Gas Blowout Model (CDOG). These response tools were created to address deficiencies identified at CRRC workshops, and are currently being used in the response to the Deepwater Horizon incident in the Gulf of Mexico.

Long term fate and effects of dispersed oil, submerged oil, and accurate 3D predictive modeling of spills are three areas consistently identified by practitioners that are in need of additional research, especially because they are issues at the heart of the Deepwater Horizon spill. With the unprecedented use of dispersants (580,000+ gallons as of May 18th, 2010) and the discovery of a 10 mile long submerged oil plume, these issues are key to the response to the Deepwater Horizon incident in the Gulf of Mexico.

Long Term Fate and Effects of Dispersants and Dispersed Oil

The Gulf of Mexico Contingency Plan allows dispersant use, without preauthorization, a minimum distance of 3 nautical miles from the shore and a water depth of at least 33 feet. As of May 18th, 2010 an unprecedented 580,000 gallons of chemical dispersant have been applied to the oil on the surface of the Gulf. Responders are also experimenting with injecting dispersants into the oil as it is being released from the damaged riser pipe ~5,000 feet below the surface. Beginning on May 3rd, a series of trial injections began and 3,000 gallons of dispersant were injected into the oil plume at a depth of approximately 5,000 feet. Visual observations indicate this was successful in reducing the volume of oil reaching the surface. US EPA and USCG recently approved the use of dispersants in the subsurface by the damaged riser pipe. The Deepwater Horizon blowout marks the largest volume of dispersants ever used, domestically and internationally. [N.B., 124,000 gallons of dispersant were used in the waters off the coast of Wales during the *Sea Empress* accident in 1996, making it the 2nd highest volume used]. While dispersants have proven to be a successful at reducing oiling of shorelines, numerous questions remain regarding the fate of the dispersed oil and the chemical dispersant. Application of dispersants at depth is unprecedented, and the fate and potential effects have never been investigated.

A large body of literature exists on dispersants dating back to the late 1960s. In 2008, as part of a CRRC-led Dispersants Working Group, the Louisiana University's Marine Consortium (LUMCON) created a complete bibliography of the dispersant literature. This bibliography contains hundreds of references, however, it is significant to note the majority of them were not in peer-reviewed sources. More recently, peer-reviewed research has determined that the impacts of dispersed oil and dispersants on marine organisms is a function of: (1) The length of exposure (most experiments are short

Figure 1: A sequence of 8 images showing breakup of a crude oil droplet mixed with dispersant (Katz, 2009).

duration, one time laboratory tests; (2) the life stage of the organism; (3) the type of oil; and (4) the degree of weathering of the oil and the *in situ* conditions (e.g., temperature).

When chemical dispersants are applied to oil slicks, the immediate goal is to disperse the oil into the water column. The dispersant molecules reduce the oil-water interfacial tension, and allow oil droplets to break away from slicks or sheens and move into the water. In order for dispersants to be effective, the water must be turbulent. The mixing energy provided by waves allows the oil droplets to break into a smaller size. Katz (2009) used holographic imagery to show how this occurs (Figure 1). The stretching of the droplet into a curved "dumbbell" shape is caused by turbulence and the lowered interfacial tension of the oil due to the dispersant. It is important to note that the end product is two or more droplets smaller than the original. This process generates a size distribution of droplets which is a function of the degree of turbulence, and the type and amount of dispersant applied.

Dispersants are typically applied at a dispersant-to-oil ratio between 1:10 and 1:60, and require a significant amount of mixing energy, supplied in large spills by wave energy, in order to be successful (Lee et al., 2009). Dispersants are not 100% effective because of a variety of biological, chemical and physical factors; the most common of which is inadequate wave and/or current energy. Low dispersion efficiency not only results in wasted effort and money, but can also leave significant amounts of dispersant and bulk oil in the environment.

Droplet size is a major factor dictating the fate of the dispersed oil. For example, if a dispersant is added at depth, larger droplets are more buoyant and will rise to the upper layers of the water faster than smaller droplets. Assuming the droplet size distribution reported in Lee et al., (2009), the time for droplets to rise from 5,000 feet (i.e., depth of Deepwater Horizon blowout) to the surface will range from 3,400 years to 1 – 2 days, and will be a function of droplet size. Other factors affecting the oil's fate include: current direction and velocity, wind and wave direction and magnitude, and ambient water conditions (e.g., temperature, salinity). The National Oil Spill Response and Renewable Energy Facility (OHMSETT), operated by Minerals Management Services (MMS), in Leonardo, NJ, has conducted numerous studies in its wave tank on the application of dispersants.

Little is known about the long-term fate of dispersed oil. The National Research Council (NRC) published two studies in 1989 and 2005 reviewing the state of dispersant use and knowledge in the United States. Both reports indicated there was a lack of understanding on the fate and potential impacts of large quantities of dispersed oil. CRRC established a Dispersant Working Group (DWG) in 2005 in response to the NRC's recommendation for more robust and relevant dispersants research. The goal of this working group is to facilitate an integrated approach to dispersant research and coordinate funding among the DWG members. In February 2007, the CRRC hosted a Dispersants Forum to present the results of research funded by DWG members. DWG funded research has continued since then and addressed more gaps in our knowledge of dispersed oil and dispersants.

The ultimate goal of dispersants is to dilute the oil to an extent that it represents a low risk to the environment. This is accomplished through dispersing oil droplets into the water column, where they enter the mixed layer (ML) and disperse via currents and natural diffusion. Dispersants do not decrease the quantity of oil; they force dilution of the oil droplets into a large volume of water. Once dispersed, these oil droplets can have many potential fates including: sedimentation; dissolution; biodegradation; re-coalescence; and uptake by biota, either through ingestion or absorption (i.e., via direct contact on membranes or body surfaces)(Figure 2).

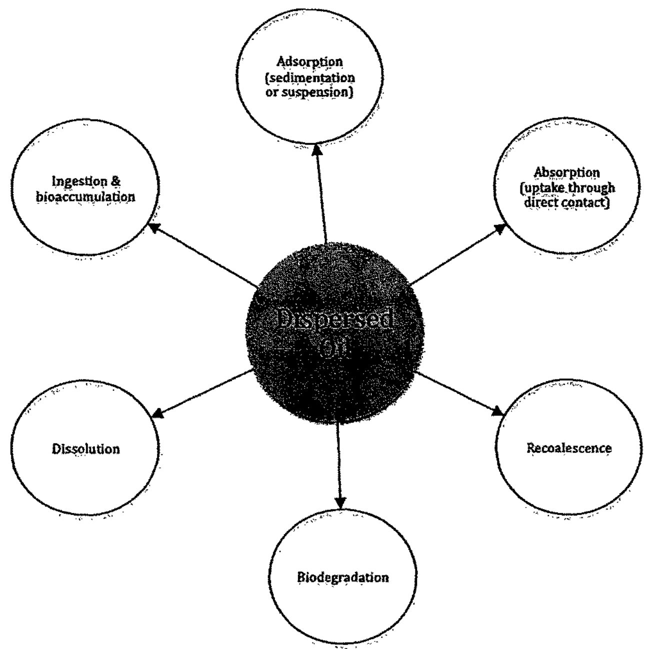

Figure 2: Fate of dispersed oil in the marine environment.

Sedimentation, where the oil becomes denser than the water and sinks to the bottom, is most likely to happen if the oil droplets adsorb (adhere) to suspended particulates such as sand, silt or clay. Adsorption is a physical process by which oil droplets attach to particulates.

Dissolution occurs when one or more of the many compounds in oil become dissolved into the ambient water. The solubility of the oil constituents in water vary greatly and can range from insoluble to concentrations in milligrams per liter. Temperature and pressure play a significant role in amount and extent of dissolution that occurs.

Biodegradation is often cited as the most likely fate of dispersed oil, however, little research has been done on the likelihood of this scenario. Biodegradation, while potentially able to completely degrade the oil, is a complex and often misunderstood process. The majority of the studies that have examined biodegradation of dispersed oil have focused on droplets in the mixed layer, and found that biodegradation was often incomplete (i.e., some compounds remained), and significant degradation took weeks to months to occur (Harayama, 2004; Stewart et al., 1993; Lindstrom et al., 1999). No research has been done on the potential for biodegradation of dispersed oil at depths approaching those of the Deepwater Horizon, and the high pressures and different microbial communities at this depth may severely restrict or prevent any biodegradation from occurring. The surface area to volume ratio of the oil droplets will likely be key to successful biodegradation, as a large surface to volume ratio (i.e., smaller droplets) allows bacteria better access to the oil. Microbial biodegradation can also strip oxygen from the water, creating zones where many organisms cannot survive. When oxygen is no longer available, some microbes can use sulfate or carbonate from seawater to degrade the oil, leaving hydrogen sulfide or methane.

While unlikely if adequate dispersion occurs, the oil droplets may re-coalesce, increasing droplet size and possibly forming a slick. Re-coalescence can only occur if two or more oil droplets come into contact, and the dispersant has degraded and is no longer effective. While in the mixed layer this is unlikely due to relatively rapid biodegradation and dispersion, the uncertainty of the fate of dispersed oil in deeper water makes re-coalescence a possibility.

Many marine biota, including copepods, shrimp, and oysters, feed on micro-plankton and other very small organisms that are similar in size to some dispersed oil droplets (0.1 to 1 mm), and it is possible that these organisms may consume smaller dispersed oil droplets (Gyllenberg, 1981; Andrews and Floodgate, 1974). These smaller organisms are the foundation of the marine food web, and reduced body weight, population, or morphology may occur. In addition, the oil can bioaccumulate, impacting larger species, including species such as tuna, shrimp and whales.

Many organisms in aquatic environments transfer dissolved gasses via special organs (i.e., gills) that can lead to increased exposure to dissolved chemicals through absorption (Barnett and Toews, 1978). While difficult to quantify, the large surface area to volume ratio of oil droplets will result in rapid dissolution of soluble chemicals, and potential exposure to biota.

The toxicity of oil is not well understood for many organisms because of its chemical variability and the lack of robust analytical methods, especially for off-shore organisms. Direct pathways of dispersed oil to marine organisms include, respiration, dermal contact, and ingestion. Oil can have chronic and acute effects on biota. Acute effects are typically indicated by mortality. Chronic effects are more difficult to monitor and include: reduced fecundity, smaller size, shorter lifespan, and decreased diversity.

These potential chronic and indirect effects can have significant implications for biological communities and at the ecological level (Figure 3). If the population of an economically significant species, such as shrimp, is impaired, it can have serious socio-economic consequences. This must be a consideration when prioritizing research on dispersant use.

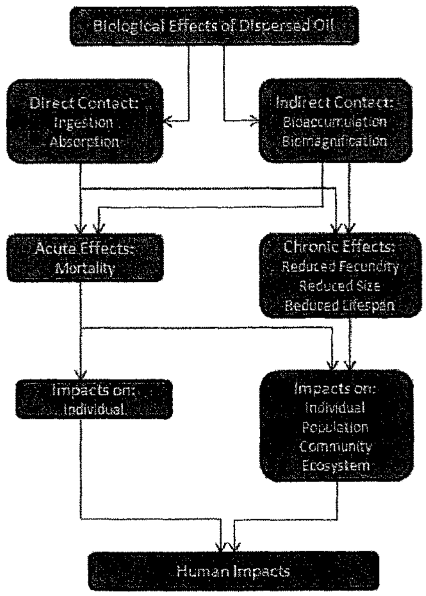

Figure 3: Potential biological effects of dispersed oil.

The major gaps in dispersant knowledge arise in the link between the fate of dispersed oil and the biological endpoints. The key question that remains unanswered is: What is the most likely fate of the dispersed oil and dispersant in the marine environment? In 2009, CRRC held an R&D needs workshop that brought together members of the oil spill community and stakeholders to identify the top research needs to enhance spill response. Not surprisingly, understanding long-term fate of chemically dispersed oil was a top research priority. The Deepwater Horizon incident response has used significantly more dispersants than any other spill in U.S. history by 2 – 3 orders of magnitude. The endpoint and effects from this huge quantity of dispersed oil cannot be confidently predicted because of lack of understanding of the potential pathways and effects. Additional peer-reviewed research is needed to gain a better understanding of the ultimate fate of dispersed oil in the Deepwater Horizon blowout.

Long Term Fate and Effects of Submerged Oil

With increased reliance on heavier crude oils and refined products to fill the current energy demands, the likelihood of spills involving subsurface oil is on the rise. Submerged (non-floating) oil provides unique incident response challenges for detection, tracking, remobilization, fate and behavior modeling, containment and recovery. A 1999 National Research Council report for the U.S. Coast Guard "Spills of Non-floating Oils: Risk and Response" provided a list of research needs relevant to subsurface oil spills. Factors as simple as the salinity of the water will impact whether a given type of oil will sink or float. Strong currents in the water can keep heavier oil submerged whereas weaker currents will allow it to settle. Even if the oil sinks to the bottom, it may become re-suspended if the bottom current energy becomes strong enough. Submerged oil has been observed at a range of depths in the Gulf of Mexico in and around the Deepwater Horizon spill site.

Unfortunately, little advancement has been made in addressing these needs. Two recent oil spills resulting in submerged oil include: the 2004 Athos I accident in the Delaware River (submerged oil resulting from mixing of crude oil leaking out o the bottom of the ship and mixing with bottom sediment) and the 2005 DBL152 barge accident releasing a sinking heavy fuel in Texas coastal waters. These incidents raised awareness of the lack of knowledge and experience with detection, tracking, response, and restoration of submerged oil spills. In December 2006, CRRC hosted a workshop entitled, "Submerged Oil – State of the Practice" to delineate a set of research needs and study plans for possible funding for submerged oil. Topics of discussion included detecting and monitoring submerged oil, fate and transport, containment and recovery including protection of water intakes, and biological effects and restoration.

Subsequent to the workshop, a Submerged Oil Working Group (SOWG) was formed consisting of stakeholders from federal and state agencies, industry, NGO's, international research agencies, and responder organizations. The CRRC-sponsored SOWG has coordinated research funding efforts, with the largest expenditure of research dollars by the U.S. Coast Guard (2008) focused on submerged oil detection. CRRC has funded two projects on submerged oil bioavailability and predicting where and how it moves. A workshop in October 2009 targeted liquid asphalt releases and the enormous amount of unanswered questions also associated with this product.

Modeling of Spills

One of the most important components of an oil spill response is the modeling that occurs to predict the fate and behavior of the oil, as well as the risks it poses to individual resources and the ecosystem. At the root of all spill models is a set of algorithms, step-by-step mathematical procedures predicting how the oil will behave and affect natural resources. At its simplest, oil spill models are loaded with data about the spill scenario (e.g., release and type of oil) and environmental conditions (e.g., weather, bathymetry, habitat and species distributions). These data are then used in sub-models that address the physical transport of the oil, the physical fate of the oil, and the impact of specific response methods being used to cleanup the spill (Figure 4). The interactions among these sub-models result in a model that predicts the oil's trajectory (where the oil will go) (Figure 5) and ideally the concentrations of individual compounds in the environment (e.g., phenanthrene). These estimates can then be used in biological effects models to predict impacts on natural resources (e.g., number of shrimp killed, loss of biomass, decrease in productivity).

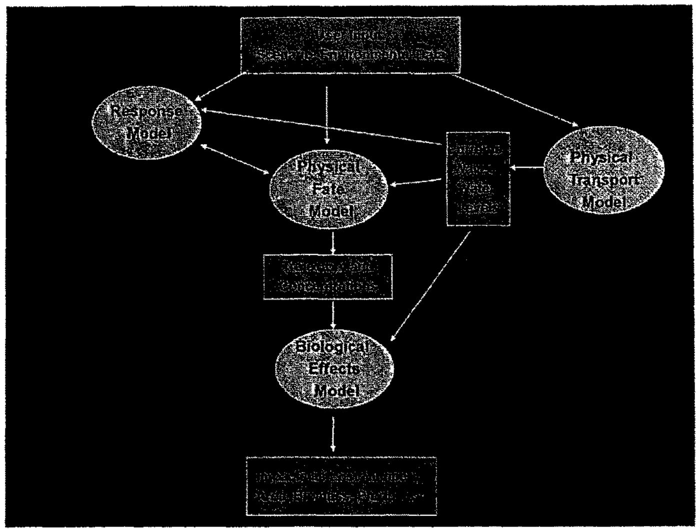

Figure 4: Spill model data (AMOP 2009).

Figure 5: Deepwater Horizon spill trajectory.

There are no comprehensive oil spill models that have algorithms to address the full spectrum of inputs and outputs required (Figure 6), especially because the amount of input data has greatly increased with the advent of NOAA's Integrated Ocean Observing Systems (IOOS).

Further complicating the modeling is the reality that few oil spills behave two dimensionally (2D), and float exclusively on the surface of the water. More commonly, as in the Deepwater Horizon incident, the oil: (1) Mixes into the water below the slick; (2) Interacts with suspended sediment which causes it so submerge; and (3) Dissolves into the water (i.e., particularly the lighter compounds in the oil). Only a few oil spill models are three-dimensional (3D) so that they can predict the mixing of the oil not only horizontally but also down into the water.

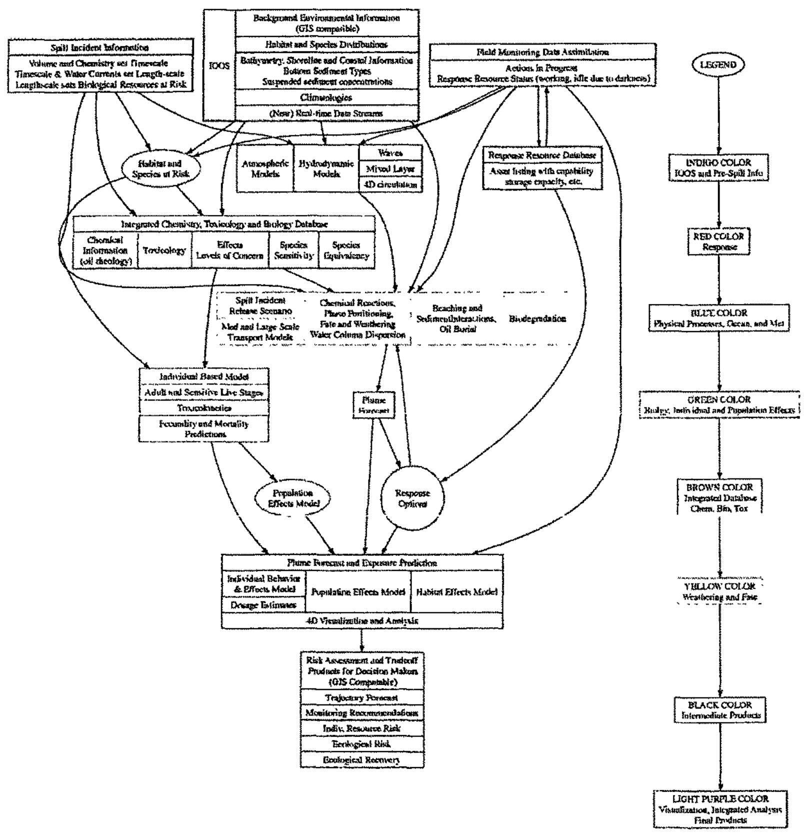

Figure 6: Spill Modeling Diagram.
(Oil Spill Modeling Working Group; C.J. Beagle-Kraus et al.,)

In September 2006, CRRC and NOAA hosted a workshop entitled "Innovative Coastal Modeling for Decision Support: Integrating Physical, Biological and Toxicological Models." The workshop brought together experts from diverse fields with NOAA ORR scientists and oil spill responders, to discuss how to improve and integrate fate and effects modeling capabilities. Discussions centered on predicting risk, forecasting environmental effects, integrating transport models with environmental and toxicological data, communicating complex modeling to decision makers, and developing response time scale estimates that reflect uncertainties in the predictions and are useful to decision makers. The latter part is very important because complex models that require very long run times to obtain answers and require data not available during a spill response are not practical. The direct result of the 2006 workshop was a June 2007 CRRC summit of the leading oil spill modelers from around the world to discuss the state-of-the-art spill modeling, oil spill models, and research questions that needed to be addressed to build future models. The research needs identified included developing algorithms for: (1) vertical and horizontal dispersion coefficients; (2) drift and mixed layer impacts, and oil-sediment interactions as well as emulsification; (2) short- and long-term toxicity impacts from oil and chemically-dispersed oil; (4) avoidance and attraction of birds; (5) uncertainty protocols for monitoring during spills to provide real-time reports to models; and (6) visualization tools to communicate 3D concentrations and uncertainties to decision makers and the public. Other needs included methods to seamlessly integrate IOOS data into the models and algorithms to address interactions of spills with shorelines.

The direct result of the summit was a commitment between the major spill modelers representing NOAA, industry, the private sector and spill responders to form a modeling working group (MWG) under the aegis of CRRC. The MWG brings modelers together to discuss common algorithms, state-of-the-art models, and ways to improve oil spill response modeling. The MWG does not write computer code, but rather is working within four subgroups: Physical Transport Modeling, Physical Fate and Behavior, Spill Response, and Biological Effects. The goal of the MWG is to develop a conceptual outline of the potential algorithms for the next generation of 3D spill models and to identify specific research needed to improve existing models. The MWG has made excellent progress, but has been hampered by the fact that there is not funding to support the work done by its members. This "volunteer" approach means that for most members, R&D must be done during their free time. To move this effort forward, support for participants is essential. In addition, funding for students to do literature searches and obtain the relevant peer-reviewed literature from related fields (e.g., physical oceanography and toxicology) is essential as the MWG members do not have time to do this.

Impacts of the Deepwater Horizon Spill on Natural Resources

The overarching goal of any oil spill response is to protect natural resources, protect flora and fauna, and to minimize damage to habitats, and the human activities associated with them. In fact, oil spills far offshore usually only consist of search and rescue operations because the damage to natural resources and habitats is considered to be minimal, and extensive cleanup is considered impractical. The Deepwater Horizon oil spill is just the opposite; It is located in a productive region of the Gulf of Mexico with major shrimp, crab, oyster and pelagic fisheries, and contains up to 40% of the most important and productive salt marshes in the United States. All of this is further magnified by the number of important bird nesting habitats and recreational beaches along the eastern Gulf. Clearly, the impacts of the Deepwater Horizon oil spill could have devastating impacts on natural resources.

When oil began appearing on the surface after the Deepwater Horizon blowout, many experts predicted that oil reaching the salt marshes and beaches would create an environmental disaster of unprecedented proportion. The goal of the response became keeping the oil off the shoreline and out of the marshes. This was accomplished on the surface through the use of booms, skimmers, *in situ* burning, and protective booming of shorelines when fairly calm conditions prevailed. However, when winds and storms created waves and currents preventing booming, skimming and burning, the method of choice became application of chemical dispersants. With more than 580,000 gallons delivered by aircraft and now with approved injection at 5,000 feet, the oil is not reaching shorelines, but is submerged in the water. The concerted effort by responders to prevent oil from reaching the marshes and beaches has to date prevented some of the images many associate with the *Exxon Valdez,* including oiled birds, sea otters, as well as blackened shorelines and huge floating oil slicks. Questions abound as to whether the worst is yet to come, and if there will there be long term effects of dispersing millions of gallons of oil, and if so, how fast will the natural resources rebound.

Unfortunately, I do not believe that anyone knows the answers to these questions. As data is collected by scientists to determine the amount of oil contamination in the water at various depths, we can begin to predict what the potential impacts may be. The basic risk equation is: Chemical Exposure → Toxicological Response. Exposure is a function of the rate of uptake by the organism, the concentration of the contaminant, the duration of the exposure, and the bioavailability, absorption and metabolic reaction related to the contaminant. The toxicity can be acute (lethal) or chronic (affecting growth, reproduction, behavior or population level parameters).

There have been scientific studies done that examine some constituents of oil and mimic certain environmental exposures, but there is a relatively limited database and some of it does not withstand the rigors of peer-review. None of it addresses the magnitude and extent of exposure that the Deepwater Horizon spill represents. Further compounding this is a lack of data and the incomplete knowledge of the deepwater ecosystem of the Gulf of Mexico. If we cannot answer the questions of exposure and the organisms present and their role in the ecosystem, nor the toxicological response, it is impossible at this time to predict recovery, or how to do adequate restoration. Only time and research will tell what the impacts to the natural resources will be and how long it will take for the Gulf to recover.

Conclusions

The Deepwater Horizon spill has again shown us that, when an oil spill occurs, we must be able to make difficult decisions, risk assessments and tradeoffs in a timely fashion to minimize the impact. Whether the spill involves floating, emulsified, dispersed and/or submerged oil, we must be able to make these decisions based on: (1) valid, detailed environmental information; (2) a fundamental understanding of the fate and behavior of the oil; (3) peer-reviewed data on the acute and chronic effects of the oil and response tools on individuals, populations, habitats and ecosystems; and (4) the best predictive oil spill models. My fear is that, as in the wake of the Exxon Valdez, the Deepwater Horizon spill will prompt a flurry of Federal authorizations of research activities, oversight committees, and even some increase in industrial research allocations, but that little actual federal funding will be appropriated for research needed to answer fundamental questions associated with response to and restoration of oil releases. We must take the lessons we have learned from this spill and apply them to ensure that, in the future, we have better tools to address such spills and minimize the impact.

To accomplish this, I recommend, first, that we not neglect the funding of fundamental scientific research. It is tempting to direct funds toward offshore drilling regulation, safety, operation, blowout prevention, and improved oil spill cleanup techniques, or even on the "nuts and bolts" engineering questions, such as how to improve the distribution of dispersants into a plume or better detect submerged oil. However, we must ensure that funding also is directed toward research that helps us understand the fate, behavior and effects of emulsified, dispersed and submerged oil and create better 3D predictive spill models with well defined bounds of uncertainty and clear biological endpoints.

Second, we must fund scientific research that is peer-reviewed and transparent, and it should be carried out in consultation with responders to ensure that it fits their needs. Independent, academic research centers are the vehicles that can best serve as hubs for the oil spill community so that results will be respected by all stakeholders, since we know that studies carried out by industry or environmental NGOs will always be questioned by the other side. NOAA should be credited for seeing the importance of independent research around these issues when it formed its partnership with the University of New Hampshire that created the Coastal Response Research Center, an example of the type of independent, academic center needed to address these questions. Additional funding for such independent centers is essential.

Only by continuing to expand NOAA's vision of making independent, science-based, oil spill response and restoration research a priority, will we have a better understanding of emulsified, dispersed and submerged oil and its fate, behavior and effects, and how and where to respond and restore the environment to minimize the damage when – not if – the next oil spill occurs.

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HEARING ON
DEEPWATER HORIZON: OIL SPILL PREVENTION AND RESPONSE MEASURES AND NATURAL RESOURCE IMPACTS

HEARING BEFORE THE
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
U.S. HOUSE OF REPRESENTATIVES

May 19, 2010

Thank you, Chairman Oberstar and Members of the Committee, for the opportunity to testify on the Department of Commerce National Oceanic and Atmospheric Administration's (NOAA's) role in the response to the Deepwater Horizon oil spill. My name is Dr. Jane Lubchenco and I am the Under Secretary of Commerce for Oceans and Atmosphere and the Administrator of NOAA. I appreciate the opportunity to discuss the critical roles NOAA serves during oil spills and the importance of maximizing our contributions to protect and restore the resources, communities, and economies affected by this tragic event. Before I move to discuss NOAA's efforts, I would first like to express my condolences to the families of the 11 people who lost their lives in the explosion and sinking of the Deepwater Horizon.

NOAA's mission is to understand and predict changes in Earth's environment and conserve and manage coastal and marine resources to meet our Nation's economic, social, and environmental needs. NOAA is also a natural resource trustee and is one of the federal agencies responsible for protecting and restoring the public's coastal natural resources when they are impacted by oil spills, hazardous substance releases, and impacts from vessel groundings on corals and seagrass beds. As such, the entire agency is deeply concerned about the immediate and long-term environmental, economic, and social impacts to the Gulf Coast and the Nation as a whole from the Deepwater Horizon oil spill. NOAA is fully mobilized and working tirelessly 24/7 to lessen impacts on the Gulf Coast and will continue to do so until the spill is controlled, the oil is cleaned up, the natural resource damages are assessed, and the restoration is complete.

My testimony today will discuss NOAA's role in the Deepwater Horizon response, natural resource damage assessment, and restoration; NOAA's assets, data, and tools on-scene; the importance of preparedness; and necessary future actions.

NOAA'S ROLES DURING OIL SPILLS

NOAA has three critical roles mandated by the Oil Pollution Act of 1990 and the National Contingency Plan:

1. Serves as a conduit for scientific information to the Federal On-Scene Coordinator to provide trajectory predictions for spilled oil, overflight observations of oil on water, identification of environmental areas that are highly valued or sensitive, and shoreline surveys of oil to determine clean-up priorities.
2. Conduct a joint natural resource damage assessment with other trustees with the goal of restoring any ocean and coastal resources harmed by the spill. This includes fulfilling the role of Natural Resource Trustee for impacted marine resources.
3. Represent Department of Commerce interests in spill response decision making activities through the Regional Response Team.

The U.S. Coast Guard (USCG) has the primary responsibility for managing coastal oil spill response and clean-up activities in the coastal zone. During an oil spill, NOAA's Scientific Support Coordinator delivers expert scientific support to the USCG in its role as Federal On-Scene Coordinator. NOAA's Scientific Support Coordinators are located around the country in USCG Districts, ready to respond around the clock to any emergencies involving the release of oil or hazardous materials into the oceans or atmosphere.

Using experience, expertise, and state-of-the-art technology, NOAA forecasts the movement and behavior of spilled oil, evaluates the risk to resources, conducts overflight observations and shoreline surveys, and recommends protection priorities and appropriate clean-up actions. NOAA also provides spot weather forecasts, emergency coastal survey and charting capabilities, aerial and satellite imagery, and real-time coastal ocean observation data to assist response efforts. Federal, state, and local entities look to NOAA for assistance, experience, local perspective, and scientific knowledge.

NOAA serves the Nation by providing expertise and a suite of products and services critical for making science-based response decisions that prevent further harm, restore natural resources, and promote effective planning for future spills. Federal, state, and local agencies across the country called upon NOAA's Office of Response and Restoration (OR&R) for scientific support 200 times in 2009.

NOAA'S RESPONSE EFFORTS FOR DEEPWATER HORIZON OIL SPILL

NOAA's experts have been assisting with the response from the beginning, providing coordinated scientific weather and biological response services when and where they are needed most.

At 2:24am (central time) on April 21, 2010, NOAA's OR&R was notified by the USCG of an explosion and fire on the Mobile Operating Drilling Unit (MODU) Deepwater Horizon, approximately 50 miles southeast of the Mississippi Delta. The explosion occurred at approximately 10:00pm on April 20, 2010. Two hours, 17 minutes after notification by the USCG, NOAA provided our first spill forecast predictions to the Unified Command in Robert, Louisiana. NOAA's National Weather Service Weather Forecast Office in Slidell, LA received the first request for weather support information from the USCG at 9:10am on April, 21, 2010 via telephone. The first graphical weather forecast was sent at 10:59am to the USCG District Eight Command Center in New Orleans. Support has not stopped since that first request for information by the USCG. Over the past few weeks, NOAA has provided 24/7 scientific support, both on-scene and through our Seattle Operation Center. This NOAA-wide support includes twice daily trajectories of the spilled oil, information management, overflight observations and mapping, weather and river flow forecasts, shoreline and resource risk assessment, and oceanographic modeling support. NOAA has also been supporting the Unified Command in planning for open water and shoreline remediation and analyses of various techniques for handling the spill, including open water burning and surface and deepwater application of dispersants. Hundreds of miles of coastal shoreline were surveyed to support clean-up activities.

Offices throughout the agency have been mobilized and hundreds of NOAA personnel are dedicating themselves to assist. In addition to these activities, I would like to highlight several of NOAA's assets that are assisting with the overall oil spill response and assessment efforts.

- NOAA's National Weather Service is providing critical 24/7 weather support dedicated to the spill, as well as on-site weather support at multiple command centers. Special aviation marine wind and wave forecasts are being prepared to support response activities. A marine meteorologist was deployed to the Joint Operations Center in Houma, LA on April, 27, 2010. Beginning on April 28, 2010, hourly localized 'spot' forecasts were requested by USCG and NOAA OR&R in support of oil burns and eventually chemical dispersion techniques. Longer range forecasts are a critical component to plan containment and response actions. NOAA's National Data Buoy Center data is also being incorporated into oil trajectory forecasts.
- NOAA's National Ocean Service is providing: custom navigation products and updated charts to help keep mariners out of oil areas; updates from NOAA's extensive network of water-level, meteorological, and near-shore current meters throughout the Gulf; in-situ observations data; economic assessment expertise; aerial photo surveys to assess pre-and post landfall assessments; and pre- and post- oil contamination assessments of oysters at Mussel Watch sites.
- NOAA's Office of Oceanic and Atmospheric Research (OAR) dispatched the R/V Pelican ship along with National Institute for Undersea Science and Technology cooperative scientists to collect samples as soon as possible. OAR is advising on airborne and oceanic dispersion modeling. NOAA and university scientists are also flying NOAA's P3 hurricane hunter aircraft to drop expendable probes to map the ocean current, salinity, and thermal structure from 1000 m depth to the surface that will refine and calibrate loop current modeling. These deployments will be critical for helping to track where the oil might be headed and whether other areas of the United States will be impacted by the Deepwater Horizon oil spill. In addition, NOAA-funded Sea Grant programs in Louisiana and other Gulf Coast states will be awarding grants for rapid response projects to monitor the effects of the oil spill on Louisiana's coastal marshes and fishery species.
- NOAA's National Marine Fisheries Service (NMFS) is addressing issues related to marine mammals, sea turtles, seafood safety, and fishery resources. On May 2, 2010,

NMFS closed commercial and recreational fishing in oil-affected portions of federal waters in the Gulf for ten days. NOAA scientists are on the ground in the spill area taking water and seafood samples to ensure the safety of seafood and fishing activities. On May 7, NMFS made effective an amendment to the emergency closure rule which adjusted the shape of the closed area to be more consistent with the actual spill location. On May 11, 2010, NMFS filed an emergency rule to establish a protocol to more quickly and effectively revise the closing and opening of areas affected by the oil spill. Due to the shifting currents and winds, rapid changes in the location and extent of the spill are occurring, which requires NMFS to update the dimensions of the closed area, as necessary, to ensure fisher and consumer safety without needlessly restricting productive fisheries in areas that are not affected by the spill. In addition, NOAA's Marine Animal Health and Stranding Response Program is assisting the Wildlife Operations Branch of the Unified Command to provide expertise and support for the response efforts to the Deepwater Horizon oil spill. Established protocols and procedures for treating marine wildlife impacted by oil have been developed by NOAA and its partners and are being adapted to address the particular needs of this event.

- NOAA's National Environmental Satellite, Data, and Information Service is providing satellite imagery from NOAA's Geostationary Operational Environmental Satellites and Polar Operational Environmental Satellites, and is leveraging data from the National Aeronautics and Space Administration and international satellites to develop experimental and customized products to assist weather forecasters and oil spill response efforts. NOAA's National Data Centers are also providing data from its archives that are being used to help provide mapping services for the impacted areas, and temperature, salinity, current, and surface elevation (tides) with forecasts up to 72 hours out from the Navy Global Ocean Coastal Model.
- NOAA's Office of Marine and Aviation Operations has 3 aircraft providing support for overflights that are being conducted on a near daily basis.
- The NOAA General Counsel's Office is working closely with state and federal co-trustee agencies to undertake a natural resource damage assessment and other steps to prepare claims for response costs and damages for natural resource injuries associated with the oil spill. The Office is also addressing a wide range of legal questions that arise in conjunction with the spill.
- The NOAA Communications office has provided two to three communications specialists to assist in the Joint Incident Center with press and all communications efforts. Within NOAA, the staff has been facilitating scientist interviews with media and working with the Office of Response and Restoration to update daily a dedicated NOAA Deepwater Horizon response web site with the latest information and easy-to-use fact sheets on topics ranging from oil and coral reefs to an explanation of the booms being used.

NOAA'S ROLE IN DAMAGE ASSESSMENT AND RESTORATION

Oil spills affect our natural resources in a variety of ways. They can directly impact our natural resources, such as the oiling of marine mammals. They can diminish the ecological services provided by coastal and marine ecosystems, such as the loss of critical nursery habitat for shrimp, fish, and other wildlife that may result from oiled marshes. Oil spills may also diminish how we use these resources, by affecting fishing, boating, beach going, and wildlife viewing opportunities.

Stewardship of the Nation's natural resources is shared among several federal agencies, states, and tribal trustees. NOAA, acting on behalf of the Secretary of Commerce, is the lead federal trustee for many of the nation's coastal and marine resources, and is authorized pursuant to the Oil Pollution Act of 1990 (OPA) to recover damages on behalf of the public for injuries to trust resources resulting from an oil spill. OPA encourages compensation in the form of restoration and this is accomplished through the Natural Resource Damage Assessment (NRDA) process by assessing injury and service loss, then developing a restoration plan that appropriately compensates the public for the injured resources. NOAA scientists and economists provide the technical information for natural resource damage assessments and work with other trustees and responsible parties to restore resources injured by oil spills. To accomplish this effort, NOAA experts collect data, conduct studies, and perform analyses needed to determine whether and to what degree coastal and marine resources have sustained injury from oil spills. They determine how best to restore injured resources and develop the most appropriate restoration projects to compensate the public for associated lost services. Over the past 20 years, NOAA and other natural resource trustees have recovered over $500 million worth of restoration projects from responsible parties for the restoration of the public's wetlands, coral reefs, oyster reefs, and other important habitats.

The successful recovery of injured natural resources depends upon integrated spill response and restoration approaches. The initial goals of a response include containment and recovery of floating oil because recovery rates for floating oil can be quite high under certain conditions. As the oil reaches the shoreline, clean-up efforts become more intrusive and oil recovery rates decline. At this point, it becomes important to recognize that certain spill response activities can cause additional harm to natural resources and actually slow recovery rates. Such decision points need to be understood so that cost effective and successful restoration can take place. NOAA brings to bear over 20 years of experience and expertise to these issues. Continued research on clean-up and restoration techniques and the recovery of environmental and human services after oil spills may improve such decision-making.

NOAA'S DAMAGE ASSESSMENT AND RESTORATION EFFORTS FOR THE DEEPWATER HORIZON OIL SPILL

At the onset of this oil spill, NOAA quickly mobilized staff from its Damage Assessment Remediation and Restoration Program to begin coordinating with federal and state co-trustees and the responsible parties, to begin collecting a variety of data that are critical to help inform the NRDA. NOAA is coordinating the NRDA effort with the Department of the Interior as a federal co-trustee, as well as co-trustees in five states and representatives for at least one responsible party (BP).

Although the concept of assessing injuries may sound relatively straightforward, understanding complex ecosystems, the services these ecosystems provide, and the injuries caused by oil and hazardous substances takes time — often years. The time of year the resource was injured, the type of oil or hazardous substance, the amount and duration of the release, and the nature and extent of clean-up are among the factors that affect how quickly resources are assessed and restoration and recovery occurs. The rigorous scientific studies that are necessary to prove injury to resources and services may also take years to implement and complete. The NRDA process described above ensures an objective and cost-effective assessment of injuries — and that harm to the public's resources is fully addressed.

While it is still too early in the process to know what the full scope of the damage assessment will be, NOAA is concerned about the potential impacts to fish, shellfish, marine mammals, sea turtles, birds, and other sensitive resources, as well as their habitats, including wetlands, beaches, bottom sediments, and the water column. This may include national estuarine research reserves and national marine sanctuaries. The natural resources co-trustees may also evaluate any lost value related to the use of these resources, for example, as a result of fishery and beach closures.

VALUE OF READINESS

This event is a grave reminder that spills of national significance can occur despite the many safeguards and improvements that have been put in place since the passage of the OPA. Although the best remedy is to prevent oil spills, oil spills remain a concern given the offshore and onshore oil infrastructure, pipes and vessels that move huge volumes of oil through our waterways.

To mitigate environmental effects of future spills, responders must be equipped with sufficient capacity and capabilities to address the challenge. Response training and exercises are essential to maintaining capabilities. Continuous training, improvement of our capabilities, maintenance of our capacity, and investments in high priority, response-related research and development efforts will ensure that the nation's response to these events remains effective. Training and coordination with other federal, state and local agencies that might have response and restoration responsibilities is critical to success in mitigating effects of future spills.

Just two months ago, NOAA participated in an oil spill exercise that focused on a hypothetical spill of national significance. This type of exercise is held every three years to sharpen the Nation's ability to respond to major oil spills at all levels of government. Led by the USCG, this exercise included more than one thousand people from twenty state and federal agencies as well as industry. This year's exercise centered on a simulated tanker collision off the coast of Portland, ME resulting in a major oil spill causing environmental and economic impacts from Maine to Massachusetts. Lessons learned from this and similar drills have improved our readiness to respond to oil spills. One tool that was successfully incorporated into this recent exercise is called the Environmental Response and Management Application (ERMA). This tool was developed by NOAA to streamline the integration and sharing of data and information, and certain components of this tool are now being used in the Deepwater Horizon response effort. ERMA is a web-based Geographic Information System tool designed to assist both emergency responders and environmental resource managers who deal with events that may adversely impact the environment. In the recent drill, ERMA allowed for the integration of current science, information technology, and real-time observational data into response decision-making. It allowed the latest information that was collected from a variety of efforts related to spills of national significance to be integrated, displayed on a map and shared for use across the Incident

Command structure. Although not fully functional in the Gulf of Mexico, ERMA is providing benefits for the Deepwater Horizon response, many of which were first tested during the recent oil spill exercise. This recent drill also incorporated the damage assessment efforts of the trustees, which resulted in improved communications and leveraging of resources and information.

ACTIVITIES TO IMPROVE FUTURE RESPONSE EFFORTS

Activities that would benefit the Nation by improving our ability to quickly respond to and mitigate damages from future spills include:

- **Response capacity** — NOAA's Office of Response and Restoration is fully engaged in responding to the Deepwater Horizon spill. Although unlikely, if another large spill was to occur simultaneously in another location across the United States, NOAA would have difficulty responding to its complete ability. Additional expertise in analytical chemistry, environmental chemistry, biology, oceanography, natural resource damage assessment, administrative functions, and information management would help plan and prepare activities between spills including training, development of area plans and response protocols, drafting and reviewing response job aids, and coordinating with regional responders.

- **Response effectiveness** — The use of simulated drills and the continued development of tools and strategies can only increase the effectiveness of oil spill response. Specific activities that would increase response effectiveness include:

  - ***Environmental Sensitivity Index Maps*** — Environmental Sensitivity Index (ESI) maps provide information that helps reduce the environmental, economic, and social impacts from oil and chemical spills. Spill responders are utilizing NOAA's ESI maps to identify priority areas to protect from spreading oil, develop cleanup strategies to minimize impacts to the environment and coastal communities, and reduce overall cleanup costs.
  - ***Data Management Tools for Decision Making*** — The key to effective emergency response is efficiently integrating current science, information technology, and real-time observational data into response decision-making. NOAA has developed the ERMA, which integrates real-time observations (e.g., NOAA National Buoy Data Center data, weather data, shoreline data, vessel traffic information, etc.) with archived data sources (e.g., NOAA's National Oceanographic Data Center's historical data) to aid in evaluating resources at risk, visualizing oil trajectories, and for planning rapid tactical response operations, injury assessment and habitat restoration. Having access to retrospective data is critical to bring value to real-time observational data being collected. For the Deepwater Horizon oil spill, certain components of the Gulf of Mexico ERMA are functional and being used on an *ad hoc* basis. The only fully functional ERMA are in the U.S. Caribbean and New England.
  - ***Use of Relevant Technologies*** — Better use of remote-sensing technologies, unmanned aerial vehicles, and an improved ability to access and use real-time observation systems would optimize clean-up operations. For example, when oil

spreads across the water it does not do so in a uniform manner. Oil slicks can be quite patchy and vary in thickness. The effectiveness of response options — the booms, skimmers, and dispersants — depends on whether they are applied in the areas of the heaviest oil. NOAA's trajectory modeling and visual observations obtained through overflights are helping direct the application of spill technologies, but remote sensing technology could be used to more effectively detect oil, determine areas of heaviest amounts of oil, and then this information could be used to direct oil skimming operations and increase the recovery of spilled oil. Traditional methods of visual observation can be difficult at night or in low visibility conditions, as is the case with Deepwater Horizon. In such situations, enhanced remote sensing technology would allow NOAA to improve the trajectory models it produces for the Unified Command.

- ***Real-time Observation Systems*** — Real-time data on currents, tides, and winds are important in driving the models that inform us on the likely trajectory of the spilled oil. As the Integrated Ocean Observing System generates more data from technological advances like high frequency radar, the prediction of oil location can be improved by pulling these observations into trajectory models in real-time.

- **Research and development** — Research and development is critical to ensure the latest science informs response efforts. Priority areas for future research and development include:

  - ***Fate and Behavior of Oil Released at Deep Depths*** — A better understanding is needed of how oil behaves and disperses within the water column when released at deep depths, such as happened with the Deepwater Horizon oil spill. This is also true regarding the use of dispersants in deep water. This information is critical to develop oil spill trajectory models and improve our understanding of the potential short- and long-term effects of dispersants on the environment.
  - ***Long-Term Affects of Oil*** — Spilled oil can remain on the shoreline and in wetlands and other environments for years. More than twenty years later, there is still oil in Prince William Sound from the Exxon Valdez spill. Research is needed to improve our understanding of the long-term effects of oil on sensitive and economically important species. This understanding will improve decision making during a response and allow us to determine the best approach to clean up.
  - ***Arctic*** — Continued acceleration of sea-ice decline in the Arctic Ocean as a consequence of global warming may lead to increased Arctic maritime transportation and energy exploration that in turn may increase the potential of oil spills in the Arctic. Recent studies, such as the Arctic Monitoring and Assessment Programme's Oil and Gas Assessment, indicate that we currently lack the information to determine how oil will behave in icy environments or when it sinks below the surface. We also lack a basic understanding of the current environmental conditions, which is important for conducting injury assessments and developing restoration strategies.
  - ***Mapping Oil Extent*** — Current use of NOAA-generated experimental products suggest that data from space-based synthetic aperture radar could assist us in detecting and refining the areal extent of oil and provide information in the decisions about where resources could be deployed.

- ***Oil Detection in Water Column and Seafloor*** — In addition to depth data, modern multibeam echo sounders record acoustic returns from the water column and acoustic backscatter amplitude returns from the seafloor. In limited research applications, these systems have been able to detect oil in the water column and on the seafloor. Sensors on autonomous vehicles that detect the presence of oil and gas in the water column are another detection technology. If these technologies could be used to provide highly accurate information on where oil is, and where it isn't, such information would be of significant benefit to a spill response such as Deepwater Horizon, where timely and precise placement of limited resources are critical to mitigate spill impacts. This developmental effort could provide very useful data for later response and restoration efforts.
- ***Human Dimensions*** — Research on how to incorporate impacted communities into the preparedness and response processes could help to address the human dimensions of spills, including social issues, community effects, risk communication methods, and valuation of natural resources.

CONCLUSION

NOAA will continue to provide scientific support to the Unified Command. NRDA efforts in coordination with our federal and state co-trustees have begun. I would like to assure you that we will not relent in our efforts to protect the livelihoods of Gulf Coast residents and mitigate the environmental impacts of this spill. Thank you for allowing me to testify on NOAA's response efforts. I am happy to answer any questions you may have.

Questions for the Record
House Committee on Transportation and Infrastructure

1) **There have been several reports of huge subsurface plumes of oil in the Gulf from the ongoing spill at the Deepwater Horizon well. These reports include the predictions of scientists on board the NOAA-affiliated Pelican vessel that there are plumes as big as 10 miles long, 3 miles wide, and 300 feet thick are in the water column. During the hearing, you explained that NOAA has increased its monitoring efforts and the methods being used to more accurately determine the size of the spill.**

   How is NOAA working to verify reports of these subsurface plumes of oil? What data and results are available to verify or refute the existence of the subsurface plume?

Since the beginning of May, the National Oceanic and Atmospheric Administration (NOAA) has been conducting and coordinating sampling of the sub-surface region around the well-head and beyond. The sub-surface research involves the use of sonar, UV instruments called fluorometers, which can detect the presence of oil and other biological compounds, and collection of water samples. The "gold standard" for determining the presence of oil, and specifically the oil coming from the Deepwater Horizon well, is the analysis of water samples collected in the Gulf using gas chromatography/mass spectrophotometry. These investigations also include measuring the dissolved oxygen content of the water column, to help assess any reduction in oxygen levels caused by microbial degradation of sub-surface oil.

NOAA's independent analysis of water samples provided from the May 22-28 research mission of the University of South Florida's R/V *Weatherbird II* confirmed the presence of low concentrations of sub-surface oil from the Deepwater Horizon spill 40 nautical miles northeast of the wellhead. Additionally, hydrocarbons were found in samples 45 nautical miles northeast of the wellhead-at the surface, at 50 meters, and at 400 meters-however, the concentrations were too low to confirm the source. NOAA's analysis of the presence of subsurface oil determined that the concentration of oil is in the range of less than 0.5 parts per million, and polycyclic aromatic hydrocarbon (PAH) levels in the range of parts per trillion. In all samples, PAH levels were below eco-toxicological benchmarks for marine waters. NOAA announced its analysis in conjunction with the University of South Florida from its campus in St. Petersburg, Florida on June 8, 2010.

Along with its analysis for the presence of oil and PAHs, NOAA tested for what is known as the Deepwater Horizon "fingerprint" to determine whether it was the source of the oil in the *Weatherbird II* samples. The samples collected 40 nautical miles northeast from the wellhead were determined to have the same "fingerprint" as the Deepwater Horizon source. The trace amounts of oil in samples collected 45 miles northeast of the wellhead were in concentrations too low to confirm the source. And oil samples taken from 142 nautical miles southeast of the wellhead were not consistent with the Deepwater Horizon "fingerprint."

Other NOAA research missions are assisting to determine the three-dimensional nature of this spill. The NOAA Ship *Thomas Jefferson*, a 208-foot survey vessel, returned to Galveston, Texas, on June 11 from an eight-day research mission to investigate the presence and distribution of subsurface oil from the Deepwater Horizon BP oil spill. The mission collected water samples for chemical analysis and tested the feasibility of using acoustic and fluorometric scanning to help find potential pockets of subsurface oil clouds. The science team onboard included researchers from NOAA, the Environmental Protection Agency (EPA), the University of New Hampshire, and the Woods Hole Oceanographic Institution. Water samples and the acoustic data are currently being analyzed in further detail. Chemical analysis of the water samples is underway to determine if oil is present in the water and, if so, to determine the concentrations and source of any oil that is found.

2) **As you know, the Loop Current in the Gulf of Mexico is powerful and unpredictable ocean feature that transports warm water clockwise from the Yucatan Peninsula, into the northern Gulf of Mexico, then south to the Florida Keys and out into the Atlantic. If oil, dispersant or a mix of the two gets into this current, we could see devastating impacts on the Florida Key and its Coastline, and especially in Florida's fragile coral reefs. The oil and dispersants could then even be transferred up the East Coast to the Northeast**

   How are you working to minimize the effects of the oil and dispersants that have entered the Loop Current? What are you doing to prevent further entry?

   You also said that you are using satellite imagery to track the progress of oil and to tell if it has entered the Loop Current. However, this tracking method does not tell you whether any subsurface plumes of oil have already entered the Loop Current. Do you believe that surface plums will or have already entered the Current? What should be done to prevent subsurface plumes from entering?

NOAA is closely monitoring the oil slick and the Loop Current using satellite imagery, ocean observations, and aerial observations. There are regular overflights out of Clearwater, Florida to observe the movement of oil near the Loop Current. There is a vessel operating continuously off the Dry Tortugas surveying for tarballs, and another vessel regularly going into the eastern edge of the Loop Current conducting oil and tarball surveys. To date there has not been any confirmed oil from Deepwater Horizon in the Florida Straits. The majority of the oil slick still remains well north of the Loop Current.

Since the beginning of May, NOAA has been conducting and coordinating sampling of the sub-surface region around the well-head and beyond. The sub-surface research involves the use of sonar, UV instruments called fluorometers, which can detect the presence of oil and other biological compounds, and collection of water samples from discrete depths using a series of bottles that can be closed around a discrete water sample. NOAA's independent analysis of water samples provided from the May 22-28 research mission of the University of South Florida's R/V *Weatherbird II* confirmed low concentrations of surface oil from the Deepwater Horizon spill 40 nautical miles northeast of the wellhead. Additionally, hydrocarbons were found in samples 45 nautical miles northeast of the wellhead-at the surface, at 50 meters, and at 400 meters-however, the concentrations were too low to confirm the source.

The NOAA Ship *Thomas Jefferson*, a 208-foot survey vessel, returned to Galveston, Texas on June 11 from an eight-day research mission to investigate the presence and distribution of subsurface oil from the Deepwater Horizon oil spill. The mission collected water samples for chemical analysis to help find potential subsurface oil clouds. Chemical analysis of the water samples is underway to determine if oil is present in the water and, if so, to determine the concentrations and the source of any oil that is found. Additional missions are being developed to continue to evaluate sub-surface oil in the region.

The northern part of the Loop Current has "pinched" off from the full Loop Current, forming an isolated circular eddy, and a small amount of surface oil has become entrained in this eddy. There is the possibility that the northern part of the Loop Current will become reattached to the full Loop Current in the coming weeks. If this eddy reconnects with the main Loop Current, any oil that is entrained may reach the Florida Straits, and could be transported around the tip of Florida and into the Gulf Stream.

The Unified Command is unable to prevent oil from entering the Loop Current; however, we will continue with an aggressive response to mitigate the impacts from the Deepwater Horizon BP oil spill. Our efforts include the use of skimmers, in-situ burn, and dispersants. Dispersants are one tool that may be employed in the event of a spill to minimize the consequences on land impacts. It is important to understand that the use of dispersants is an environmental trade-off. Using dispersants decreases the environmental risks to shoreline and organisms at the surface. However, the dispersed oil increases the risk to organisms in the water column.

There are Unified Command Posts set up in Miami, Key West and Tampa. NOAA's Scientific Support Coordinators are working closely with the USCG and State of Florida on planning and preparedness in the event oil comes to shore. The Unified Command will not relent in our efforts to protect the livelihoods of Gulf Coast residents and mitigate the environmental impacts of this spill.

3) **As you know, under the natural resource damage provision of the Oil Pollution Act of 1990, individuals in the Gulf whose lives and livelihoods have been adversely affected by this disaster are required to make individual claims to BP or the Oil Spill Liability Trust Fund.[1] However, one of the criticisms following the Exxon Valdez spill was that much of the information necessary for damaged parties to make a claim was withheld from the public- either by the responsible party or by the Federal government.**

    What are you doing to ensure that all of the information collected by BP and the Federal agencies is made publicly available so that affected individuals know the true extent of the damage caused by this disaster?

[1] We note that the incoming question includes information that is factually inaccurate. Individuals may not claim directly against the Oil Spill Liability Trust Fund; they must first present claims to the responsible party/parties. Individuals in the Gulf who have been adversely affected by the Deepwater Horizon BP oil spill are required to make individual claims to the Responsible Parties (BP, Transocean, or one of BP's co-lessees).

We recognize the public's interest in the federal government's response to this crisis, and we are committed to providing answers with clarity and transparency. NOAA and co-trustees are currently collecting both analytical information, such as sub-surface concentration and distribution of oil in the water column, and observational information, such as location of oil sheen and tar balls, as well as marine mammal and turtle observations relative to those locations. We are also conducting regular testing to ensure commercial seafood safety. Research vessels including scientists from NOAA, EPA, private industry, and several academic institutions are focused on collecting data to inform response operations and the natural resource damage assessment. For instance, the NOAA ship *Thomas Jefferson* recently collected water samples for chemical analysis and tested the feasibility of using acoustic and fluorometric scanning to help find potential subsurface oil clouds. While detailed results of water samples and acoustic data are currently being analyzed, a full report of the trip along with preliminary findings is available online at http://www.noaa.gov. In addition, information on location and types of observations being collected is available to the public through NOAA's Environmental Response Management Application at the following web address: http://www.geoplatform.gov/gulfresponse/.

NOAA continues to work with the Unified Command to inform response operations with the best available science and information to support critical decision making. For example, NOAA's oil spill modeling team continues to generate daily trajectories for the nearshore surface oil. Overflights are also conducted on a daily basis (weather permitting) to provide field verification of model trajectories. NOAA is also supporting shoreline cleanup and assessment teams to map the degree of shoreline oiling from the bays and bayous west of the Mississippi delta to Apalachicola, FL.

NOAA and co-trustees (the Department of the Interior and States of Texas, Louisiana, Mississippi, Alabama, and Florida) are collecting data across the Gulf of Mexico to determine the degree and extent of natural resource injuries and the human uses of natural resource services (e.g., recreational fishing and general shoreline use) that have been lost due to the oil spill. Several technical working groups composed of state and federal natural resource trustees and representatives from BP are gathering historical information and developing and implementing baseline (pre-spill) and post-impact field studies for multiple resource categories. Resources being assessed include fish and shellfish, bottom dwelling biota, birds, marine mammals, turtles, and sensitive habitats such as wetlands, submerged aquatic vegetation, beaches, mudflats, deep and shallow corals, and the water column, including bottom sediments.

4) **During the question and answer portion of the hearing, you agreed with Administrator Jackson that the country was using outdated techniques and equipment to respond to the spill, which is in glaring contrast to the technological advances corporations have made in order to extract oil and natural gas resources.**

   In terms of NOAA's ability to adequately be prepared and able to respond to spills in the future, what would you propose NOAA needs that it currently does not have? What items, options, or authorities does NOAA need in order to improve its preparedness and ability to respond to oil spills in the future?

As the Nation's lead scientific support agency for response and contingency planning in coastal and marine areas, NOAA has been engaged in the response to the Deepwater Horizon BP oil spill from the start, providing coordinated scientific forecasting and environmental response services, both on scene and remotely, to federal, state, and local organizations. NOAA personnel have been working tirelessly on ships, aircraft, shorelines, and command posts across the Gulf Coast and across the country to understand and lessen impacts from the spill. We will continue to do so until the spill is controlled, oil is cleaned up, natural resource injuries are assessed, and restoration is complete.

The Deepwater Horizon BP oil spill has exposed the need for prioritizing research on the environmental impacts of dispersants, 3-dimensional modeling, fate and transport of oil at deep depths, long term impacts of oil on shorelines, and improved clean-up and restoration methods. Strong science is critical to effective decision-making, to minimize the economic impacts and mitigate the effects of oil spills on coastal and marine resources and associated communities.

When passed in 1990, OPA envisioned a robust oil spill research and development program coordinated by the Interagency Coordinating Committee (ICC) on Oil Pollution Research. OPA recognized the need for research and created the ICC to coordinate and direct a dedicated program on oil pollution research, technology development, and demonstration among industry, universities, research institutions and federal agencies, state governments and other nations, if appropriate. To date, funding has been provided through various state and federal agencies and industry for oil pollution research. While coordinated interagency research activities are occurring, important research questions remain.

Achievement of the comprehensive and collaborative research and development program envisioned by OPA can only increase the effectiveness of our Nation's oil spill response and restoration capabilities. While existing research has resulted in advancement of some technologies, more must be done to strengthen our Nation's response capabilities. A renewed commitment of the ICC to focus on the most pressing research needs — particularly deepwater releases and releases in cold/icy waters — is one place to start. The Administration is committed to this effort.

A disastrous spill like the Deepwater Horizon BP oil spill has a low probability of occurring, but comes with high consequences. Continued use of science, through a robust research and development program, can improve the effectiveness of spill response efforts and habitat restoration. It is important to ensure that robust research and development efforts continue between spills so that we can develop the tools and understanding before—rather than during—the next spill. Applying the latest science and continuing research and development can improve our ability to make effective response decisions, thereby reducing the severity of oil spill injuries to our Nation's economy and environment.

NOAA would welcome the opportunity to work with the Committee on these issues in the near future.

United States House Committee on Transportation and Infrastructure

Lamar McKay
Chairman & President, BP America
501 Westlake Park Boulevard, Houston, Texas 77079
(281) 366-2000
May 19, 2010[1]

Chairman Oberstar, Ranking Member Mica, members of the committee, I am Lamar McKay, Chairman and President of BP America.

We have all experienced a tragic series of events.

I want to be clear from the outset that we will not rest until the well is under control. As a responsible party under the Oil Pollution Act, we will carry out our responsibilities to mitigate the environmental and economic impacts of this incident.

We — and, indeed, the entire energy sector — are determined to understand what happened, why it happened, take the learnings from this incident, and make the changes necessary to make our company and our industry stronger and safer. We understand that the world is watching and that we and our industry colleagues will be judged by how we respond to these events.

Nearly one month ago, eleven people were lost in an explosion and fire aboard the Transocean Deepwater Horizon drilling rig, and seventeen others were injured. My deepest sympathies go out to the families and friends who have suffered such a terrible loss and to those in Gulf Coast communities whose lives and livelihoods are being impacted.

This was a horrendous accident. We are all devastated by this. It has profoundly touched our employees, their families, our partners, customers, those in the surrounding areas and those in government with whom we are working. There has been tremendous shock that such an accident could have happened, and great sorrow for the lives lost and the injuries sustained. The safety of our employees and our contractors and the safety of the environment are always our first priorities.

Even as we absorb the human dimensions of this tragedy, I want to underscore our intense determination to do everything humanly possible to minimize the environmental and economic impacts of the resulting oil spill on the Gulf Coast.

[1] The data described throughout this testimony is accurate to the best of my knowledge as of 8pm Monday, May 17, 2010, when this testimony was prepared The information that we have continues to develop as our response to the incident continues

From the outset, the global resources of BP have been engaged. Nothing is being spared. We are fully committed to the response. And from the beginning, we have never been alone. On the night of the accident, the Coast Guard helped rescue the 115 survivors from the rig. The list of casualties could easily have been longer without the professionalism and dedication of the Coast Guard.

Even before the Transocean Deepwater Horizon sank on the morning of April 22nd, a Unified Command structure was established, as provided by federal regulations. Currently led by the National Incident Commander, Admiral Thad Allen, the Unified Command provides a structure for BP's work with the Coast Guard, the Minerals Management Service and Transocean, among others.

Immediately following the explosion, in coordination with the Unified Command, BP began mobilizing oil spill response resources including skimmers, storage barges, tugs, aircraft, dispersant, and open-water and near shore boom.

Working together with federal and state governments under the umbrella of the Unified Command, BP's team of operational and technical experts is coordinating with many agencies, organizations and companies. These include the Departments of Interior, Homeland Security, Energy, and Defense, National Oceanic and Atmospheric Administration (NOAA), US Fish & Wildlife Service (USFW), National Marine Fisheries Service (NMFS), EPA, OSHA, Gulf Coast state environmental and wildlife agencies, the Marine Spill Response Corporation (an oil spill response consortium), as well as numerous state, city, parish and county agencies.

"BP has been relentless and we've been relentless in our oversight because we all understand the stakes here," said Adm. Allen on May 14. "This has never been done before. This is an anomalous, unprecedented event."

The industry as a whole has responded in full support. Among the resources that have been made available:

- Drilling and technical experts who are helping determine solutions to stopping the spill and mitigating its impact, including specialists in the areas of subsea wells, environmental science and emergency response;
- Technical advice on blowout preventers, dispersant application, well construction and containment options;
- Additional facilities to serve as staging areas for equipment and responders, more remotely operated vehicles (ROVs) for deep underwater work, barges,

support vessels and additional aircraft, as well as training and working space for the Unified Command.

The actions we're taking

As Chairman and President of BP America, I am part of an executive team that reports directly to our Global CEO, Tony Hayward. I am BP's lead representative in the US and am responsible for broad oversight and connectivity across all of our US-based businesses.

BP itself has committed tremendous global resources to the effort. Including BP, industry and government resources – over 17,000 personnel are now engaged in the response. Among many other tasks, our employees are also helping to train and organize the more than 15,000 citizen volunteers who have come forward to offer their services.

Indeed, we have received a great many offers of help and assistance, and we are grateful for that. The outpouring of support from government, industry, businesses and private citizens has truly been humbling and inspiring. It is remarkable to watch people come together in crisis.

Our efforts are focused on two overarching goals:

- Stopping the flow of oil; and
- Minimizing the environmental and economic impacts from the oil spill.

Subsea efforts to secure the well

Our first priority is to stop the flow of oil and secure the well. In order to do that, we are using four vessels and nine Remote Operated Vehicles (ROVs) working on several concurrent strategies:

- **Riser Insertion Tube:** This involves placing a tapered riser tube into the end of the existing, damaged riser and drill pipe – which is the primary source of the leak -- until a watertight closure is achieved. The gas and oil then flows under its own pressure up the riser tube to the Enterprise drillship on the surface. We successfully tested and inserted the tube into the leaking riser, capturing some oil and gas. Although the test was temporarily halted when the tube was dislodged, we have since successfully re-inserted the tool. We are now in the early stages of stabilizing the system to process oil and gas onboard the Discoverer Enterprise drill ship five thousand feet above on the water's surface.
- **Containment Recovery System:** Initial efforts to place a large containment dome over the main leak point were suspended as a build up of hydrates, essentially ice-like crystals, prevented a successful placement of the dome over the spill

area. A second, smaller containment dome, measuring four feet in diameter and five feet high, called a "top hat," is being readied to lower over the main leak point, if needed. The small dome would be connected by drill pipe and riser lines to a drill ship on the surface to collect and treat the oil. It is designed to mitigate the formation of large volumes of hydrates. It is important to note that this technology has never been used at this depth and significant technical and operational challenges must be overcome.

- **Dispersant injection at the sea floor:** We have conducted a third test round of injecting dispersant directly at the leak site on the sea floor using ROVs. Dispersant acts by separating the oil into small droplets that can break down more easily through natural processes before it reaches the surface. Sonar testing and aerial photographs show encouraging results. The Unified Command, supported by the Environmental Protection Agency and other agencies, has approved additional subsea application subject to ongoing protocols.

- **Drilling relief wells:** We have begun to drill the first of two relief wells to permanently secure the well. These wells are designed to intercept the original MC252 #1 well. Once this is accomplished, a specialized heavy fluid will be injected into the well bore to stop the flow of oil and allow work to be carried out to permanently cap the existing well. On Sunday, May 2nd, we began drilling the first of these wells, and as of May 16, the well had reached approximately 9,000 feet below sea level. A second drillship has been mobilized to the area and began drilling a second relief well on May 16. The relief well operation could take approximately three months.

- **"Top kill:"** An additional effort is known as a "top kill." It is a proven industry technique for capping wells and has been used worldwide, though never in 5,000 feet of water. It uses a tube to inject a mixture of multi-sized shredded fibrous materials directly into the blowout preventer. The objective is for the material to travel up the BOP and clog the flow of the well at the pinch point. Once the pressure is controlled, heavy fluids and cement will be pumped down the well to kill it. We have completed the first part of this operation using an ROV to remove the BOP control pod, which was taken to the surface and refurbished with electronics. Re-installation of the control pod will allow us to control the BOP lines needed to inject from the surface. Manifold and bypass lines are in place to provide access to valves on the BOP. This procedure is ongoing and this attempt could take two or three weeks to accomplish.

- We have succeeded in stopping the flow from one of the three existing leak points on the damaged well. While this may not affect the overall flow rate, it should reduce the complexity of the situation to be dealt with on the seabed.

Attacking the spill

We are attacking the spill on two fronts: in the open water and on the shoreline, through the activation of our pre-approved spill response plans.

• On the water

On the open water, more than 750 response vessels are available, including skimmers, storage barges, tugs, and other vessels. The Hoss barge, the world's largest skimming vessel, has been onsite since April 25. In addition, there are 15, 210-foot Marine Spill Response Corporation Oil Spill Response Vessels, which each have the capacity to collect, separate, and store 4000 barrels of oil. To date, over 157,000 barrels of oil and water mix have been recovered.

Also on the open water, we are attacking the spill area with Coast Guard-approved biodegradable dispersants, which are being applied from both planes and boats. Dispersants are soap-like products which help the oil to break up and disperse in the water, which, in turn, helps speed natural degradation.

Thirty-eight aircraft, both fixed-wing and helicopters, are now supporting the response effort. Over 625,000 gallons of dispersant have been applied on the surface and more than 390,000 gallons are available. Typically, about 2,100 gallons of dispersant is needed to treat 1,000 barrels of oil.

To ensure that adequate supplies of dispersant will be available for surface and subsea application, the manufacturer has stepped up the manufacturing process, and existing supplies are being sourced from all over the world. The cooperation of industry partners has been superb and that is deeply, deeply appreciated.

• Actions to protect the shoreline

Near the shoreline, we are implementing with great urgency oil spill response contingency plans to protect sensitive areas. According to the Coast Guard, the result is the most massive shoreline protection effort ever mounted.

To ensure rapid implementation of state contingency plans, we have made grants of $25 million to Louisiana, Mississippi, Alabama, and Florida.

To date, we have about 1.7 million feet of boom deployed in an effort to contain the spill and protect the coastal shoreline, and over a million more feet are available. The Department of Defense is helping to airlift boom to wherever it is needed across the Gulf coast.

The Area Unified Command Center has been established in Robert, LA. Incident Command Centers have been or are being established at Mobile, AL; St. Petersburg, FL and Houma, LA.

Seventeen staging areas are also in place to help protect the shoreline:

- **Alabama:** Theodore, Orange Beach and Dauphin Island;
- **Florida:** Pensacola, Panama City, Port St. Joe and St. Marks.
- **Louisiana:** Amelia, Grand Isle, Venice, Port Fourchon, Shell Beach, Slidell, Cocodrie;
- **Mississippi:** Pascagoula, Biloxi and Pass Christian;

Highly mobile, shallow draft skimmers are also staged along the coast ready to attack the oil where it approaches the shoreline.

Wildlife clean-up stations are being mobilized, and pre-impact baseline assessment and beach clean-up will be carried out where possible. Rapid response teams are ready to deploy to any affected areas to assess the type and quantity of oiling, so the most effective cleaning strategies can be applied.

A toll-free number has been established to report oiled or injured wildlife, and the public is being urged not to attempt to help injured or oiled animals, but to report any sightings via the toll-free number.

Contingency plans for waste management to prevent secondary contamination are also being implemented.

Additional resources, both people and equipment, continue to arrive for staging throughout the Gulf states in preparation for deployment should they be needed.

Communication, community outreach, & engaging volunteers

We are also making every effort to keep the public and government officials informed of what is happening and are regularly briefing Federal, state, and local officials. On the ground, in the states and local communities, we are working with numerous organizations such as fishing associations, local businesses, parks, wildlife and environmental organizations, educational institutions, medical and emergency establishments, local media, and the general public.

BP is leading volunteer efforts in preparation for shoreline clean-up. We have helped and will continue to help recruit and deploy volunteers, many of whom are being compensated for their efforts, to affected areas.

Volunteer activities at this time are focused on clearing the beaches of existing debris and placing protective boom along the shoreline. Our "adopt a boom" program is proving very successful in engaging local fishermen in the response. Over a thousand fishing vessels are signed up to deploy boom and assist with the response.

There are seven BP community-outreach sites engaging, training, and preparing volunteers:

• **Alabama:** Mobile;

• **Florida:** Pensacola;

• **Louisiana:** Venice and Pointe a la Hache;

• **Mississippi**: Pascagoula, Biloxi and Waveland.

A phone line has been established for potential volunteers to register their interest in assisting the response effort.

Coping with economic impacts

We recognize that beyond the environmental impacts there are also economic impacts on many of the people who rely on the Gulf for their livelihood. BP will pay all necessary clean up costs and is committed to paying legitimate claims for other loss and damages caused by the spill. We are already expediting interim payments to individuals and small business owners whose livelihood has been directly impacted by the spill - the men and women who are temporarily unable to work. We have already paid over $13 million dollars out to claimants, mostly in the form of these lost income interim payments. We intend to continue to replace this lost income for those impacted men and women for as long as the situation continues to prevent them from returning to their work.

We have been responding to these claims by individuals and small businesses that have had losses caused by injury to their property or to natural resources as quickly and efficiently as possible. We have a call center that operates 24 hours a day, 7 days a week. Starting this week, we will have an on-line claims filing system. We have nearly 700 people assigned to handle claims, with almost 350 experienced claims adjusters working in the impacted communities. We have 12 walk in claims offices in Louisiana, Mississippi, Alabama and Florida and we will open 5 more this week. We will continue to add people, offices and resources as required.

We are striving to be efficient and fair and look for guidance to the established regulations and other information provided by the US Coast Guard, which frequently handles and resolves these types of claims.

Commitment to investigate what happened

BP is one of the lease holders and the operator of this exploration well. As operator, BP hired Transocean to conduct the well drilling operations. Transocean owned and was responsible for safe operation of the Deepwater Horizon drilling rig and its equipment, including the blowout preventer.

The question we all want answered is "what caused this tragic accident"?
A full answer to this and other questions will have to await the outcome of multiple investigations which are underway, including a joint investigation by the Departments of Homeland Security and Interior (Marine Board) and an internal investigation that BP is conducting.

BP's investigation into the cause of this accident is being led by a senior BP executive from outside the affected business. The team has more than 40 people. The investigation is ongoing and has not yet reached conclusions about incident cause. We intend to share the results of our findings so that our industry and our regulators can benefit from the lessons learned.

Investigations take time, of course, in order to ensure that the root cause of the failure is fully understood. But let me give you an idea of the questions that BP and the entire energy industry, are asking:

• What caused the explosion and fire?

• And why did the blowout preventer fail?

Only seven of the 126 onboard the Deepwater Horizon at the time of the incident were BP employees, so we have only some of the story, but we are working to piece together what happened from meticulous review of the records of rig operations that we have as well as information from those witnesses to whom we have access. We are looking at our own actions and those of our contractors, as is the Marine Board.

Conclusion

BP is under no illusions about the seriousness of the situation we face. In the last three weeks,.the eyes of the world have been upon us. President Obama and members of his Cabinet have visited the Gulf region and made clear their expectations of BP and our industry. So have members of Congress, as well as the general public.

We intend to do everything within our power to bring this well under control, to mitigate the environmental impact of the spill and to address economic claims in a responsible manner.

Any organization can show the world its best side when things are going well. It is in adversity that we truly see what they are made of.

We know that we will be judged by our response to this crisis. No resource available to this company will be spared. I can assure you that we and the entire industry will learn from this terrible event, and emerge from it stronger, smarter and safer.

Written Testimony of Carys L. Mitchelmore, Ph.D.

Before the House of Representatives Committee on Transportation and Infrastructure

Hearing entitled " Deepwater Horizon: Oil Spill Prevention and Response Measures, and Natural Resource Impacts"

May 19th, 2010
(Testimony submitted May 17th, 2010)

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Good morning Chairman Oberstar and members of the Committee. I am Dr. Carys Mitchelmore and I would like to take this opportunity to thank you for inviting me today to highlight some of the issues concerning the effects of oil spill dispersants and dispersed oil.

By way of background: I am faculty at the University of Maryland Center for Environmental Science, Chesapeake Biological laboratory. I have been conducting research and publishing books and articles for over 15 years concerning the impacts of metals, organic chemicals, biological pollutants, oil and oil spill dispersants on many species, including corals, reptiles, fish and oysters. Today I am representing my views as a researcher in the field of environmental health. My career path as an aquatic toxicologist was set in place at the young age of 6, after stepping on a tar ball at a local beach. That left a lasting impression on me and I grew up fascinated with the rock pools and, unfortunately the all too often, oil sheens within. I began investigating the impacts of oil on marine organisms following the Aegean Sea Oil spill in 1992. Since then, as opportunities have arisen, I have carried out research investigating the effects of oil and it's constituent compounds on bivalves, corals, fish and reptiles. Specifically, in the last few years my focus has been on investigating the routes of exposure to and the toxicity of the dispersant Corexit 9500 and dispersed oil on sensitive species, such as corals (REFS 1-9). I was also co-author on the recent 2005 NRC publication on "Oil Spill Dispersants: Efficacy and Effects" (REF 10).

Unfortunate recent events in the Gulf have once again brought to the forefront issues pertaining to the impacts of oil, oil spill dispersants and dispersed oil in our marine and coastal ecosystems. My testimony today will focus on issues relating to the effects and uncertainties (data gaps) regarding oil spill dispersants and dispersed oil using case examples from peer-reviewed studies in addition to my own research. I will summarize with issues and questions pertinent to the current Gulf oil spill.

The three key points I would like to raise during my testimony are the following:

1. Limited data is available concerning the toxicity of dispersants and dispersed oil.

- There are significant data gaps relating to understanding sublethal and delayed effects.
- Few studies have addressed the impacts to sensitive at risk species (e.g. corals)
- There are inherent difficulties in monitoring and assessing the actual impacts during a spill event.

2. Ecosystem-based approaches.

- Is bioaccumulation in the food web enhanced or decreased?
- Indirect toxicity issues can influence higher trophic level organisms.

3. What are the data gaps?

- What would help reduce the uncertainties in dispersant application decisions?
- Specifically what are some of the unknowns with the recent oil spill in the Gulf.
  - Issues relating to the two drivers of toxicity; concentration and time.
  - New application methods (subsurface rather than surface).

Overview and Introduction: What are dispersants and why are they used?

Organisms can die if they are coated with, inhale or ingest large amounts of oil. Often these are the enigmatic species that are highlighted in the news; the oil coated birds washed onshore, the dead marine mammals exposed to the oil slick because they come up to the surface to breath. Also the oil coated shorelines, that not only decimate intertidal food reserves for ourselves (e.g. oysters, crabs, fish) and other organisms but cripple recreational activities and local economies. Sensitive coastal habitats, such as wetlands, often serve as nursery grounds to numerous species, including those that migrate long distances to these breeding areas. Oil coated shorelines can chronically expose and continually impact local resources for years or decades following an oil spill.

When oil is spilled response decisions must be quickly made (within hours) and are based upon the best available science and on numerous and often continually changing variables; what specific type of oil is spilled, how much, what are the weather conditions, where will the oil go based on hydrodynamic models (i.e. oil trajectory), what response options are available, what and where are the sensitive habitats and species (for ecological, social and economic reasons). Ultimately the question is what habitats and organisms do I need to protect from the oil the most?

Dispersants are used to redirect an oil slick from the surface of the water into the waters below. The objective of dispersant application is to protect organisms coming into contact with the slick itself and to protect sensitive shorelines from the slick coming ashore. This is an example of a known pollutant, albeit one often classified as having low to moderate toxicity to environmental organisms, purposely added to the marine environment. It is used because its overall benefit to the environment offsets its risk. However, it actually represents an environmental trade-off, the protection of one habitat is at the cost of another i.e. the protection of shoreline species at the expense of organisms residing in the water column and potentially those in the benthic (seabed) environment.

Dispersants are chemical mixtures containing solvents, surfactants and other additives, (including proprietary chemicals). They are used to facilitate and enhance the break-up with wave energy of the surface oil slick into small oil droplets that disperse into the deep waters below (termed chemically dispersed oil[1]). These small droplets stay suspended in the water column and spread in three dimensions instead of two. The movement of dispersed oil and

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[1] In comparison the term physically (or naturally) dispersed oil is used in reference to the oil that is in the water beneath an oil slick. This includes mainly dissolved oil constituents (PAHs etc) in addition to some larger oil droplets due to natural wave action. For simplicity we will refer to this as dissolved oil throughout this document and chemically dispersed oil as dispersed oil.

dispersants in all dimensions in such a huge volume of water, such as the open ocean results in a plume of dispersed oil and dispersants that is quickly reduced to low levels. For example, at depths >10m water, it is estimated that the concentration of dispersed oil under a slick is <12.5ppm[2] (REF 11). In addition, this dispersal effectively increases the surface area to volume ratio of oil so that microorganisms (bacteria) that naturally degrade oil can be more effective in doing so.

It should be noted that dispersants do not remove oil from the environment they simply change the inherent chemical and physical properties of the oil and in doing so change the oil's transport, fate and potential effects. Given that dispersed oil can rapidly dilute to low concentrations in the water column resulting in a small area of concern for effects to water column organisms and minimal (if at all) impact to the seabed (benthic communities) the use of dispersants in the U.S. is pre-approved for application on open ocean oil spills (i.e. generally >3nm from shore and in waters <10m deep). However, trade-off decisions will become more complex if the water column hosts, for example, a densely populated school of spawning fish or other oceanic species, or if the slick moves into coastal areas. The issues surrounding the impacts and effects of using dispersants on the sea is summarized in the 1989 NRC report (REF 12).

Summary on the effects of dispersants and dispersed oil

1. Limited data is available concerning the toxicity of dispersants and dispersed oil.

The decision to apply dispersants to an open ocean spill is less complex than those that would need to be made for a near-shore, coastal location oil slick (summarized in REF 10). In an open water spill it is generally assumed that water-column organisms will indeed be impacted by the dispersed oil plume, but the extent of this harm will be less than the resulting impacts to a shoreline habitat. Assumptions include, for example;

1) the area (body of water) affected by a lethal plume of dispersed oil is small.
2) the numbers of affected organisms is reduced.

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[2] The term ppm refers to parts per million (e.g. 1 μl of a chemical in 1 liter of water).

3) the length of time that harm will occur will be less and that recovery will be quicker for the water column habitat.

However, even in this simple scenario there are still uncertainties involved, that an increased knowledge into the fate and effects of dispersant and dispersed oils would help answer (summarized in the 1989 NRC report; REF 12). Ultimately these trade-off decisions are based upon a habitat's sensitivity to oil and/or dispersed oil. These ecological risk assessments are derived from knowing what species are there and how sensitive they are to the oil and/or dispersed oil. Ultimately this data is derived from laboratory toxicity tests or field observations during an actual spill.

Both NRC reports (REFS 10, 12) concluded that limited toxicological information exists to fully assess the risks to organisms (i.e. water column and potentially benthic species) exposed to dispersants (e.g. the Corexit formulations that are the main dispersants currently in use in the U.S.) and dispersed oil. Although this lack of toxicological data is not unique to oil spill dispersants. It is mirrored by the tens of thousands of chemical contaminants that are also being released into the environment. The majority of toxicity data regarding dispersants and dispersed oil address acute and short-term effects derived from laboratory toxicity tests (see summary tables in Chapter 5 of the 2005 NRC report, REF 10). There is much more limited data available detailing the potential sublethal or delayed effects of exposure, which could be much more detrimental to a population in the long term. Examples of the major questions that arise are detailed in the following sections:

a) How toxic are the dispersants alone?

Although dispersants themselves would not be released into the environment on their own, toxicity tests are required (for human and environmental safety) so that they can be approved for use (i.e. listed on the EPA's National Contingency Plan; see REF 13). However, many of the dispersants are proprietary and do not list their chemical components in detail. Most of the toxicity data available are from acute short-term toxicity tests (see tables 5-2 and 5-3 in the 2005 NRC report, REF 10). Acute toxicity tests are used to compare toxicity between chemicals and between organisms to identify highly toxic chemicals and sensitive organisms. Results are standardized and presented as the lethal concentration of a chemical that causes death to 50% of the test organisms following a set exposure time (i.e. LC50, 24-96 hours). The lower the LC50 level is, the more toxic the chemical.

For dispersants toxicity depends upon the specific dispersant under study, the species being tested and also the life stage of the particular species under investigation. Some organisms are much more sensitive to (i.e. affected by) dispersants than others. For example, gulf mysids and copepods (crustaceans), diatoms (algae) and fish larvae are affected at low concentrations of Corexit 9500 (i.e. LC50, 96 hour at the low ppm level[3]). However, other organisms were only affected by 3-10-fold higher concentrations of Corexit 9500. Less toxicity data (i.e. less species evaluated) is available for Corexit 9500 compared with the earlier Corexit 9527 formulation. My research laboratory has recently demonstrated that soft corals were affected at environmentally relevant (see REF 12) low ppm concentrations of Corexit 9500 (LC50, 96 hours <16.5ppm). Some studies have found dispersants to be less toxic compared with oil or dispersed oil in direct comparisons, although some studies report an increased dispersant toxicity compared with oil or dispersed oil (see discussions in REF 10).

b) How toxic is dispersed oil?

Oils are a mixture of thousand's of different chemicals (including hydrocarbons and metals) all with their own specific physical, chemical and biological properties. Different oils contain varying amounts of these individual components. In addition, dispersants contain mixtures, including proprietary chemical components, so that we do not know exactly what the exact chemical make-up of a dispersed oil plume is. Individual chemicals in complex pollution mixtures can often interact with each other making them more toxic than could have been predicted from the sum of the individual components (this is called synergism where the toxicity of chemicals A and B is greater together than their individual toxicities).
There is conflicting scientific evidence to date regarding the toxicity of dispersed oil[1] in comparison to oil[1]. The 2005 NRC report addresses this at length (see REF 10).

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[3] NOTE: 10ppm (v/v) is 10μl of dispersant in 1 liter of water. To put this in a rough perspective this would be one drop in 5 liters of water.

Some studies have stated that dispersed oil is more toxic than oil, others have shown that the toxicities of dispersed oil and oil are equivalent. The NRC 1989 report concluded that the acute lethal toxicity of chemically dispersed oil is primarily associated not with the dispersant but with the dispersed oil and it's dissolved constituents following dispersal (REF 12). Some species and life stages are much more sensitive than others, for example, the LC50s for oyster and fish larvae were as low as 3mg / l for dispersant alone (Corexit 9527) and 1mg / l for dispersed oil (REF 14).

It is inherently difficult to compare dispersed oil with oil and discrepancies can arise simply due to the experimental design of the tests. Therefore, in the 1990's efforts were made to standardize toxicity tests (i.e. CROSERF and following publications; see discussion in REF 10). Many of the studies demonstrating toxic equivalencies of oil and dispersed oil compare the results based upon equal concentrations of oil (e.g. equal TPH (total petroleum hydrocarbons)). There are two issues to consider regarding this experimental design.

First, that the dispersed oil consists of a complex mixture of dispersant, dissolved oil constituents (e.g. polycyclic aromatic hydrocarbons; PAHs) and oil droplets. The oil alone exposures are (for the most part) just dissolved oil components (e.g. PAHs) derived from mixing oil with water, allowing the 'slick' to resurface and using the water in these tests. This is used to approximate the dissolved oil components that water column organisms would be exposed to in shallow depths under a slick. Therefore, these tests do not take into account the route of exposure of the oil to organisms and the different components that would be in each fraction i.e. some specific PAHs will be more enriched in the dissolved phase, other less soluble ones will be in the oil droplets. However, these tests are useful in comparing (based on the same amount of oil) if dispersants enhance oil toxicity. This is still under debate. Second, these tests are not environmentally relevant. To prepare solutions of equal oil content much less oil is used in the exposures containing the dispersant and dispersed oil. This would not be the case under a slick. Elevated oil concentrations would be seen following dispersant application as oil is dispersed.

Toxicity data aids in the risk assessment of what organisms are the species most at risk. During a spill these data can be compared with the predicted dispersed oil concentrations (using computer modeling) or actual oil concentrations measured in the field.

c). Sublethal and delayed toxicity.

As summarized in recent NRC publications (see REFS 10 (specifically Table 5.7), 12, 15) oil and oil spill dispersants can cause many effects, including death and a variety of sublethal impacts including reduced growth, reproduction, cardiac dysfunction, immune system suppression, metabolic and bioenergetic effects, developmental deformities, carcinogenic, mutagenic, teratogenic effects and alterations in behavior (see Table 1 below for a summary of dispersed oil sublethal effects). These more subtle endpoints than death can none-the-less have huge consequences for populations. Additionally, delayed effects may occur which are hard to track and follow following an oil spill event unless monitoring programs span years after the spill event. Some aquatic species are more sensitive than others to dispersants and /or dispersed oil (again see tables within Ref 10). Therefore, making trade-off decisions between species is difficult if toxicity data is not available for those or closely related species[4]. Additionally, it has been shown that it is the early life stages of organisms, e.g. eggs and larvae that are more sensitive to chemicals and are at particular risk. This is especially of concern given that these life stages often inhabit surface waters.

d). Specific Issues relating to the dispersed oil effects (using specific species as case examples).

i) Water column organisms.

Organisms resident in the water column will be those at risk following dispersant application. A dispersed oil plume contains high levels of dispersant, dissolved oil and oil droplets meters down into the water column. It is in these surface waters that many organisms are concentrated in. This includes phytoplankton (algae) and zooplankton (small

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[4] Laboratory based toxicity studies often use standard test organisms from which resident species of similar taxonomy can be compared with. Often specific resident species of concern for a particular ecosystem are not amenable to laboratory tests. Although there are some additional taxonomic groups for which data is lacking e.g. corals.

invertebrates or larvae of fish and other organisms); essential components at the base of the food web that organisms (including shoreline species) rely upon.

Table 1: Summary of some of the sublethal effects reported in organisms exposed to dispersed oil[5]. The studies detailed are only those reported since the 2005 NRC report as tables exist for sublethal effect studies from 1989-2005 within that report (see REF 10).

Species	Sublethal Effect Observed	Reference
Mytilus edulis (mussel)	Decreased feeding rate	16
Zostera marina (Seagrass)	Altered photosynthetic index	16
Fundulus heteroclitus (Mummichog larvae)	Increased enzyme activity (EROD)*; reduction in body size.	17
Hyphessobrycon erythrostigma (amazonian fish)	Altered sodium fluxes, CYP1A induction*	18
Stylophora pistillata / Pocillopora damicornis (corals)	Reduced growth	19
Atherinops affinis embryos (topsmelt)	Inhibition of hatching and development; cardiovascular effects	20
Montastraea franksi (coral)	Cellular stress response; Increases in protective enzymes; HSP70 and P-glycoprotein**	21
Colossoma macropomum (tambaqui fish)	Impaired gill ion regulation; altered blood parameters; membrane effects	22
Trout (fish)	CYP1A induction*	23
Xenia elongata (soft coral)	Cessation of pulsing; ulceration and dissolution of tissues; reduced growth	4

*; These are enzymes up-regulated (increased) in response to dispersed oil (PAH) exposure. They demonstrate that PAHs are bioaccumulated, the organism is trying to remove them from its body by these detoxification enzymes. **; These are protective enzymes up-regulated in response to stress (oil dispersant exposure and bioaccumulation). NOTE * and ** represent an energetic cost to the organism, which if continued, will divert energy away from normal growth and reproductive processes and ultimately can result in death.

Other organisms at risk include fish, reptiles and marine mammals. A dispersed plume is not static. Like a surface slick it will move with the wind and ocean currents. In some cases the larger organisms (large fish, reptiles and mammals) having detected a harmful

[5] Note: I have made no attempt to relate these to environmentally relevant levels, studies also use a range of oils and dispersant mixtures.

substance may be able to move away and avoid the plume if their sensory systems and behavioral mechanisms have not already been impacted by the oil plume. This is not the case for the smaller organisms. They will more than likely move with the plume increasing their duration of exposure to the toxicants.

Dispersed oil may affect these water column organisms in a number (or combinations) of ways:

1) direct toxicity through exposure to the dissolved oil components and/or dispersant.
2) ingestion of oil particles and hence bioaccumulation of oil components.
3) coating of external surfaces (e.g. gills/skin) by oil droplets potentially enhancing oil uptake (dissolution) across surfaces or simply physical effects reducing respiration leading to eventual smothering and death.

Recent studies demonstrating sublethal effects and new toxic pathways suggest that the full impact of exposure to dispersed oil may be underestimated and further studies are required to investigate this in detail (discussed at length in REF 10). For example, in translucent organisms (e.g. fish larvae) the toxicity of accumulated oil can be 12-50,000 times underestimated because the traditional toxicity tests were not carried out under conditions of natural sunlight (REF 24, REF 10). This phenomenon called 'photoenhanced toxicity' may be critical in determining the effects of dispersed oil in surface dwelling (e.g. translucent pelagic larvae) and shallow water translucent organisms (including corals).

Studies have also shown that dispersants may facilitate the uptake and potentially the bioaccumulation of oil constituents in organisms from ingestion routes (e.g. see REF 25) or by oil droplets sticking to biological surfaces (e.g. fish gills; see REF 26) and facilitating the dissolution of oil components (dissolved PAHs) into tissues. However, dispersed oil has also been shown to be less 'sticky' and does not interact with biological surfaces or sediment (see discussions in REF 10). These issues relating to the fate (i.e. where the oil ends up) are important to know for a full risk assessment. As with photoenhanced toxicity any enhanced bioaccumulation routes would increase the 'footprint' of the potential effects of dispersed oil and further studies are required to address these data gaps and uncertainties in predicting the fate and effects of dispersed oil.

ii) Benthic/Intertidal organisms (e.g. oysters, mussels and crabs).

In a deep open ocean spill benthic organisms are usually at minimal risk of exposure and the direct effects of dispersed oil. Although they still could be indirectly affected by the oil spill if their food source is impacted. However, if the dispersed plume comes towards shallower coastal locations then intertidal and benthic organisms will be exposed. Suspension (filter) feeders, such as oysters and mussels, will bioaccumulate oil droplets in addition to the dissolved oil components. Dispersed oil droplets generally range in size from <3 to 80μm. These sizes overlap with the preferred size range of food for many suspension feeding organisms, including zooplankton (see later). Oysters and amphipods can select these particles, as they are similar in size to the phytoplankton they feed upon.

The importance of this oil droplet (or particle bound oil PAH) exposure route was highlighted in studies flowing the New Carissa Oil spill near Coos Bay, Oregon. Mussels (suspension feeders) contained much higher levels of oil constituents (PAHs; ~500 times more) than crabs (an omnivore) collected from the same area (REF 27). Chemical (PAH) profiles also highlighted that the mussels had accumulated the PAHs both from the dissolved oil constituents in the water and from oil droplets whereas crabs had only accumulated them from the dissolved phase. Our studies with anemones and corals also showed that bioaccumulation resulted from exposure to both of these fractions. These data are very important as current computer models designed to predict the effects of an oil spill do not take into account exposure routes other than the dissolved components. This research has implications for the effects of a dispersed oil plume on coastal fisheries and highlights the importance in understanding the routes of exposure of oil to a particular species and in determining the levels of oil constituents in each of these phases for a better understanding of risk.

iii) Corals.

In the last few years my research group has investigated the toxicity of dispersants and dispersed oil on sensitive species such as corals. A series of laboratory experiments were conducted to investigate the acute, sublethal and delayed effects of Corexit 9500 and dispersed oil (Corexit 9500 and weathered Arabian light crude oil, 1:25 ratio) on symbiotic cnidarians (anemones and corals). In summary, soft corals died in environmentally relevant (see REF 12) low ppm concentrations of Corexit 9500 (LC50 8 hours ~30ppm; LC50 96 hours <16.5ppm). Sublethal behavioral effects (narcotic response resulting in the cessation of coral pulsing) were observed within hours at low (10ppm) dispersant exposures. In attempting to mimic a dispersed oil plume moving through a coral reef the soft corals were exposed for 8 hours to dispersant alone (at 20ppm i.e. the dose used for the 1:25 (v/v) dispersant:oil ratio), dispersed oil (dissolved PAHs and oil/dispersant droplets and dispersant) and undispersed oil (i.e. dissolved PAHs under an oil slick) using an oil loading of 0.5g l^{-1} oil:water (1:2000 w/v). After 8 hours of exposure these corals were placed in clean seawater to follow potential delayed effects and sub-lethal repercussions of exposure.

Following thirty two days of recovery in clean seawater coral growth was significantly reduced in the chemically dispersed oil and dispersant exposures and delayed effects (further death in the dispersed oil treatments) were observed (see EXHIBIT 1). Our research also demonstrated that cnidarians accumulated oil (PAHs) in their tissues derived from both the dissolved oil components and the oil droplets. This highlights that to fully assess and understand the risks involved from dispersed oil consideration must be given to the exposure route of the oil for a particular species rather than simply the total amount of oil. These results have been submitted to the funding agency in the form of a final report and peer-reviewed publications are pending. I will be happy to provide any further information on these subjects.

3. Food web effects.

As mentioned in previous sections the upper layers of the water column are teeming with phytoplankton and zooplankton that are critical components of the food chain. All complex food webs, including those for shoreline/coastal species contain these organisms at their base. If these organisms are removed then higher trophic level organisms simply will not have food to eat and will ultimately suffer reduced growth, reproductive output and eventually death. Therefore, dispersants and dispersed oil do not have to directly affect an organism for them to have serious repercussions. This is called indirect toxicity, whereby the contaminant impacts organisms that another organism needs for food.

These lower food chain organisms can also accumulate oil (either inside them or stuck on the outside of their bodies) so that organisms feeding on them become, and often to much higher levels, contaminated with oil. Suspension feeding organisms, like zooplankton (e.g. copepods), which are extremely important food sources at the lower end of food webs, have been found to feed on dispersed oil particles (size range 5-60μm). This has effects on those organisms; organisms higher up the trophic level that feed on them and ultimately may poses severe food safety issues for ourselves (contaminated seafood etc). Information related to the trophic transfer of contaminants is relevant to fully understand and evaluate the risks of oil exposure. Models currently based on dissolved oil concentrations can significantly underestimate oil exposure.

4. What we still don't know (data gaps)

In addition to those highlighted in the previous sections there are still many unanswered questions that we need to know to fully assess the risks involved with dispersants and dispersed oil. These were highlighted in the 2005 NRC report (REF 11). Although the 2005 NRC study was specifically tasked to address the potential risks of dispersant use in near-shore environments many of the conclusions of the report are valid in open-ocean spills, such as the recent Gulf oil spill. Many questions and data gaps needed for improved risk analyses and ultimately effective oil spill responses were highlighted. Some basic concepts and issues regarding dispersed oil fate and effects simply lacked adequate research. In addition other areas of study require increased research efforts, as conflicting data currently exists.

The many questions and issues that we have limited data for include the following;

1. What are the potential-long term effects of dispersant and dispersed oil, even after a brief exposure, to aquatic organisms? What are the sublethal effects? Will there be delayed effects?
2. There are limited studies on sensitive at risk organisms (e.g. corals).
3. Does dispersed oil reduce or enhance uptake/bioavailability of oil to organisms?
4. Does photoenhanced toxicity increase the 'footprint' of effects?

5. Does dispersed oil reduce or enhance microbial degradation? If enhanced will this bacterial 'bloom' result in an increased dead zone in the water (reduction in water oxygen levels)?
6. Is dispersed oil less 'sticky' to biological surfaces and sediment?
7. What are the routes of exposure to organisms to dispersed oil? Is it dissolved PAHs or the oil droplets, or both.
8. How will the food web (directly or indirectly) be impacted? Issues relating to trophic transfer and species loss.

Unfortunately many of these questions are still unanswered given the very limited opportunities available to carry out research in these areas. Some of the research recommendations made in the 1989 NRC report (REF 12) were once again highlighted in the 2005 NRC report (REF 10) as these research questions had not been undertaken during those 16 years. Since the 2005 NRC report some progress has been made in addressing the data gaps outlined. In summary, papers (numbers in parenthesis) have focused on determining dispersant effectiveness (10), chemistry and fate (4), microbial biodegradation (8) and toxicity (16)[6].

As stated before oil spill responders base their decisions on the sound scientific data that is available to them regarding species that would be at higher risk than others from the impact of oil or dispersed oil. The NRC report (2005) highlighted that some of the very basic assumptions made concerning the use of dispersants have still not been adequately investigated, despite being highlighted in the earlier 1989 NRC report (REF 12). For example, besides protecting the shoreline protecting birds and marine mammals from the surface slick is a primary consideration. But does dispersing the oil protect birds? Again conflicting data exists. Some studies have shown that birds coming into contact with a dispersed oil plume may have similar issues to those that they face in going through a surface slick. Dispersants can strip the natural oils from bird's feathers, putting them at risk

[6] An updated bibliography list of research since the NRC 2005 report can be provided if requested. (Information was obtained from an ISI Web of Science search).

of hypothermia. Similar issues have been raised for marine mammals and fur properties (see REFS 10 and 12 for a full discussion of these issues).

Similarly, another main argument for using dispersants is that they enhance microbial degradation of the oil. Again conflicting data exists regarding this assumption. Some studies have shown that dispersants are toxic to some bacteria and that biodegradation is reduced in chemically dispersed oil exposures (see NRC 2005 for a full discussion on this in Chp's 4 and 5). Other studies have shown enhanced biodegradation and increased numbers (blooms) of bacteria. The question is if blooms occur will this have a significant impact on dissolved oxygen levels in the water (i.e. likened to nutrient enrichment and eutrophication)?

5. Specific issues regarding the Gulf Oil spill.

The unfortunate recent events in the Gulf have once again raised many of the issues regarding the effects of dispersants and dispersed oil. As many have asked in the past weeks, potentially what will the environmental consequences be of the dispersant application, what will be affected, to what extent and how? This is impossible to predict for many reasons.

As mentioned earlier open ocean spills are pre-approved for dispersant application given the minimal perceived risks to the ocean and the seafloor based upon the depth and volume of water available to dilute the dispersed oil. However, this spill is unique and a first for many reasons opening up many questions regarding the decision to use dispersants and what their potential effects may be.

First, the sheer volume of dispersants applied is unprecedented; no spill in U.S. waters has used the amount of chemical dispersants that have currently been released (>250,000 gallons). Furthermore, this is a continued spill, in toxicology the concentration of and the duration of exposure to a toxicant determines its effect. Additionally, dispersants are usually only applied to surface slicks. In this case dispersants are being applied at the seafloor at the site of the oil leak. The question is how will this dispersed oil impact the benthic (seafloor) environment?

The surface oil slick is easily viewed via satellite but what about the sub-surface plume? The agencies and oil spill responders at the site will be running models predicting the oil plumes concentration and trajectory. As part of the SMART protocol[7] measurements of oil concentrations will be taken at depths in the Ocean around the spill site. This will providing real-time data that can ground truth the models to more accurately assess where and at what concentration of oil the plume is at. Only in knowing the size of this plume in all three dimensions, the concentration of the dispersed oil in the plume at these locations and the duration of exposure in one area, will predictions be able to be made of the potential effect. Unlike with oil impacts along the coast and shoreline, it is very difficult to see the actual effects of the dispersed oil in the Ocean. Organisms, that die will fall to the seafloor. Those that do not die will not show sublethal repercussions for a while. Declining populations of a water column species may occur and shoreline species may become severely limited in their food sources in addition to being faced with a contaminated food source.

With the increasing volume of oil and dispersants entering the system for extended periods of time there may be, at some time, a point reached in which the harm to the water column organisms (and now potentially benthic organisms) does not outweigh the harm to the shoreline. These dispersants are approved for use in the open ocean, although there is no limitation as to how much and for how long they can be used. How long can the 'solution to pollution' reasoning hold? Furthermore, with the continued production of dispersed oil plumes from the surface and from the ocean floor will the dispersed oil plume reach the shallower, coastal locations that the decision to use dispersants has been based on? It is quite possible that a dispersed oil plume may reach and impact a shoreline.

In summary

Chairman Oberstar and members of the committee I would like to thank you again for allowing me to testify today regarding the effects of oil spill dispersants. We face huge challenges to protect our coastal and oceanic ecosystems. As in the case of oil spills this sometimes involves making difficult trade-off decisions on what ecosystem to protect at the

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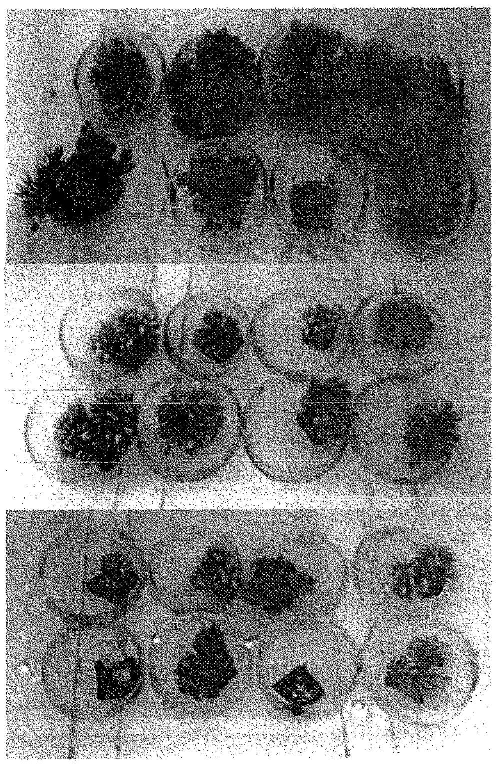
[7] Used for analyzing the effectiveness of the dispersant application and it's environmental impacts.

expense of another. However, pollution cannot simply be treated as 'out of sight out of mind' or that 'the solution to pollution is dilution'. These assumptions need careful analyses that depend upon sound scientific data. The proprietary components in dispersants should be made available to researchers. Although many decisions are based upon acute short-term toxicity studies we are constantly unraveling new and more subtle sublethal toxicological pathways and toxicity mechanisms. These sublethal impacts ultimately have dire consequences to a species survival, consequences of which alter the fine balance of food webs, alter ecosystem services, and the overall health of the environment. During an oil spill event it is hard to assess the effects on the organisms that you do not see and equally challenging to follow the potential long-term consequences of the spill.

There are still many unanswered questions and uncertainties associated with the decisions to apply dispersants. I emphasize the recommendations for additional studies made in the recent NRC report that will help fill these critical data gaps in the knowledge and understanding of the behavior and interaction of dispersed oil on the biotic components of ecosystems (see REF 10). Whatever choices are made this unfortunate recent event in the Gulf will impact ecosystem health, local economies, food sources and recreational activities, the extent to which is currently unknown. We need better information to close these uncertainty gaps that oil spill response decisions are based upon and we need it now. Thank you.

Exhibit 1: Photo depicting corals held in clean seawater 32 days after an exposure to Corexit 9500 and dispersed oil (using Corexit 9500 and weathered Arabian light crude oil). Significant reductions in growth were observed compared with controls.



CONTROL SOFT CORALS

SOFT CORALS EXPOSED TO COREXIT 9500 (20ppm, 8 hours).

SOFT CORALS EXPOSED TO DISPERSED OIL (using 20ppm Corexit (1:25 ratio dispersant:oil) and 0.5g l^{-1} weathered Arabian light crude oil with 8 hour exposure).

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Testimony
Before The Committee on Transportation & Infrastructure
United States House of Representatives
May 19, 2010

Deepwater Horizon: Oil Spill Prevention & Response Measures & Natural Resource Impacts

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Chairman Oberstar, Ranking Member Mica, and other members of the Committee, I want to thank you for the opportunity to speak with you today.

My name is Steven Newman, and I am the Chief Executive Officer of Transocean, Ltd. Transocean is a leading offshore drilling contractor, with more than 18,000 employees worldwide. I am a petroleum engineer by training, I have spent considerable time working on drilling rigs, and I have worked at Transocean for more than 15 years. I am proud of the Company's historical contributions to the energy industry during that time. Today, however, I sit before you with a heavy heart.

The last few weeks have been a time of great sadness and reflection for our Company – and for me personally. Nothing is more important to me and to Transocean than the safety of our employees and crew members, and our hearts ache for the widows, parents and children of the 11 crew members – including nine Transocean employees – who died in the *Deepwater Horizon* explosion. These were exceptional men, and we are committed to doing everything we can to support their families as they struggle to cope with this tragedy.

We have also seen great courage and kindness since April 20 that has reaffirmed our faith in the human spirit. That spirit is embodied by the 115 crew members who were rescued from the *Deepwater Horizon* and were as worried about the fate of their colleagues as they were about themselves. It is embodied by the brave men and women of the U.S. Coast Guard who led search-and-rescue efforts for the injured and missing crewmembers, and the emergency workers waiting for the injured crew members when they arrived ashore. And it is embodied by the friends and colleagues who have rallied to help the families of those who were lost at sea.

While this has been a very emotional period for all of us at Transocean, it has also been a period of intense activity and effort.

Immediately after the explosion, Transocean began working with BP (in BP's role as operator/leaseholder of the well) and the "Unified Command" (which includes officials from the U.S. Coast Guard, the Department of the Interior's Minerals Management Service (MMS), and the National Oceanic and Atmospheric Administration (NOAA)) in the effort to stop the flow of hydrocarbons. Our finest operational personnel and engineers have been working with BP to identify and pursue options for stopping the flow as soon as possible. Our drilling rig, the *Development Driller III*, is involved in drilling the relief well at the site, and our drillship, the *Discoverer Enterprise*, is involved in the unique oil recovery operations in the Gulf. In addition, a third Transocean drilling rig, the *Development Driller II*, is moving into position to drill a second relief well or otherwise assist in operations to stop the flow. We will continue to support BP and the Unified Command in all of these efforts.

We have also been working hard to get to the bottom of the question to which the Members of this Committee – and the American people – want and deserve an answer: What happened the night of April 20th, and how do we assure the American public that it will not happen again?

As is often the case after a tragedy of this kind, there has been a lot of speculation about the root cause of this event. Although it is premature to reach definitive conclusions about what caused the April 20 explosion, we do have some clues about the cause of the disaster. The most significant clue is that the events occurred after the well construction process was essentially finished. Drilling had been completed on April 17, and the well had been sealed with casing and cement. For that reason, the one thing we do know is that on the evening of April 20, there was a sudden, catastrophic failure within that basically completed well. It is also clear that the drill crew had very little (if any) time to react. The initial indications of trouble and the subsequent explosions were almost instantaneous.

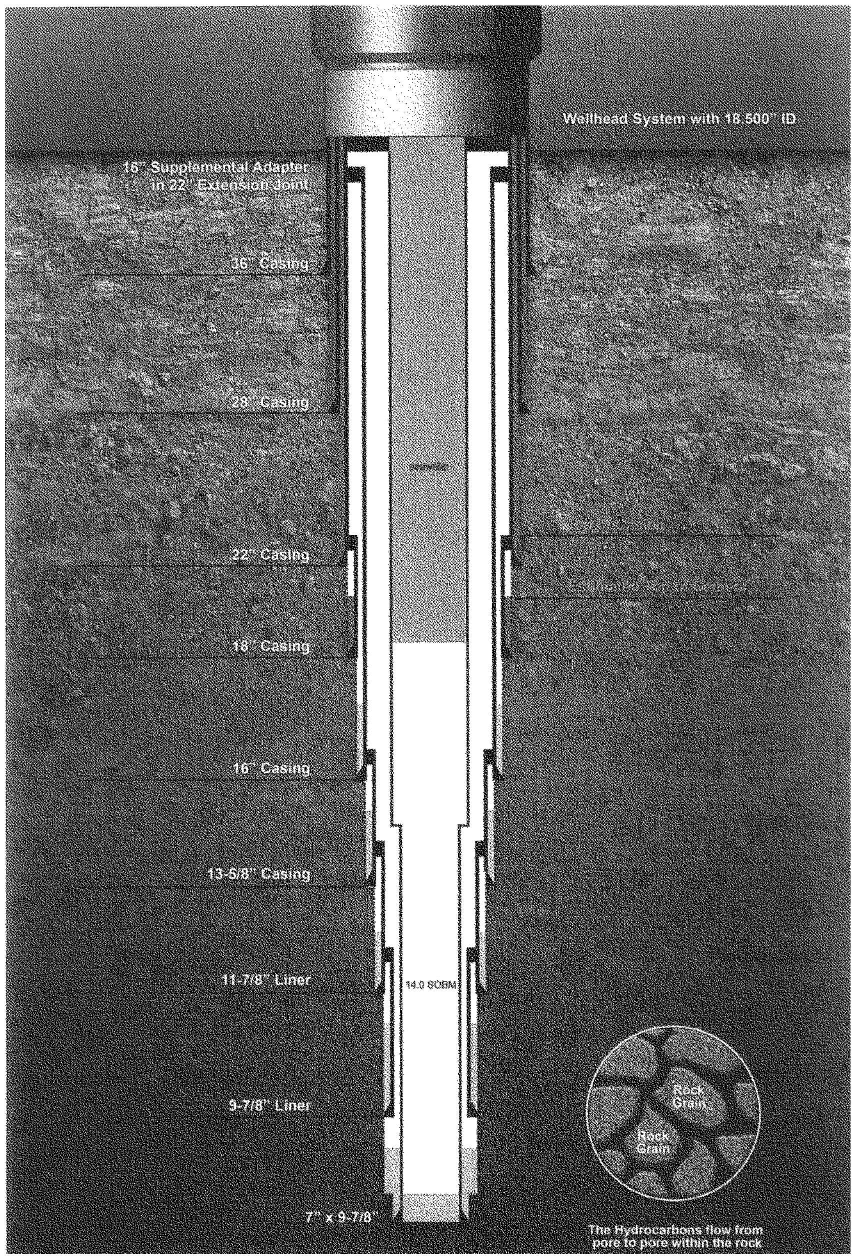
What caused that sudden, violent failure? And why weren't the blow-out preventers able to squeeze, crush or shear the pipe and thereby shut in the flow? These are some of the critical questions that need to be answered in the coming weeks and months.

The well construction process is a collaborative effort, involving various entities and many personnel – the well operator, government officials, the drilling contractor, the mud contractor, the casing contractor, the cement contractor and others. For the same reason, the process of understanding what led to the April 20 explosion must also be collaborative. We agree that this is not the time for finger-pointing – instead, all of us must work together to understand what happened and prevent any such accident in the future.

Ours is an industry that must put safety first. And I can assure you that Transocean has never – and will never – compromise on safety. In 2009, Transocean recorded its best ever Total Recordable Incident Rate (TRIR). And MMS, the federal agency charged with enforcing safety on deepwater oil rigs, awarded one of its top prizes for safety to Transocean in 2009. The MMS SAFE Award recognizes "exemplary performance by Outer Continental Shelf (OCS) oil and gas operators and contractors." In the words of MMS, this award "highlights to the public that companies can conduct offshore oil and gas activities safely and in a pollution-free manner, even though such activities are complex and carry a significant element of risk." In awarding this prize to Transocean, MMS credited the Company's "outstanding drilling operations" and a "perfect performance period."

Despite a strong safety record, Transocean is not complacent about safety. We believe that any incident is one too many. Last year, our Company experienced an employee accident record that I found unacceptable. As a result, I recommended to our Board of Directors that they withhold bonuses for all executives in order to make clear that achieving stronger safety performance was a basic expectation – and fundamental to our success. That recommendation was accepted, and our Company paid no executive bonuses last year, in order to send a loud message that we evaluate our success in large part based on the safety of our operations.

Until we fully understand what happened on April 20, we cannot determine with certainty how best to prevent such tragedies in the future. But I am committed – for the sake of the men who lost their lives on April 20, for the sake of their loved ones, for the sake of all the hard-working people who work on Transocean rigs around the world, and for the sake of people in each of the affected states and worldwide who rely on our oceans and waterways for their livelihood – to work with others in the industry, with Congress and with all involved federal agencies to make sure that such an accident never happens again.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Rock
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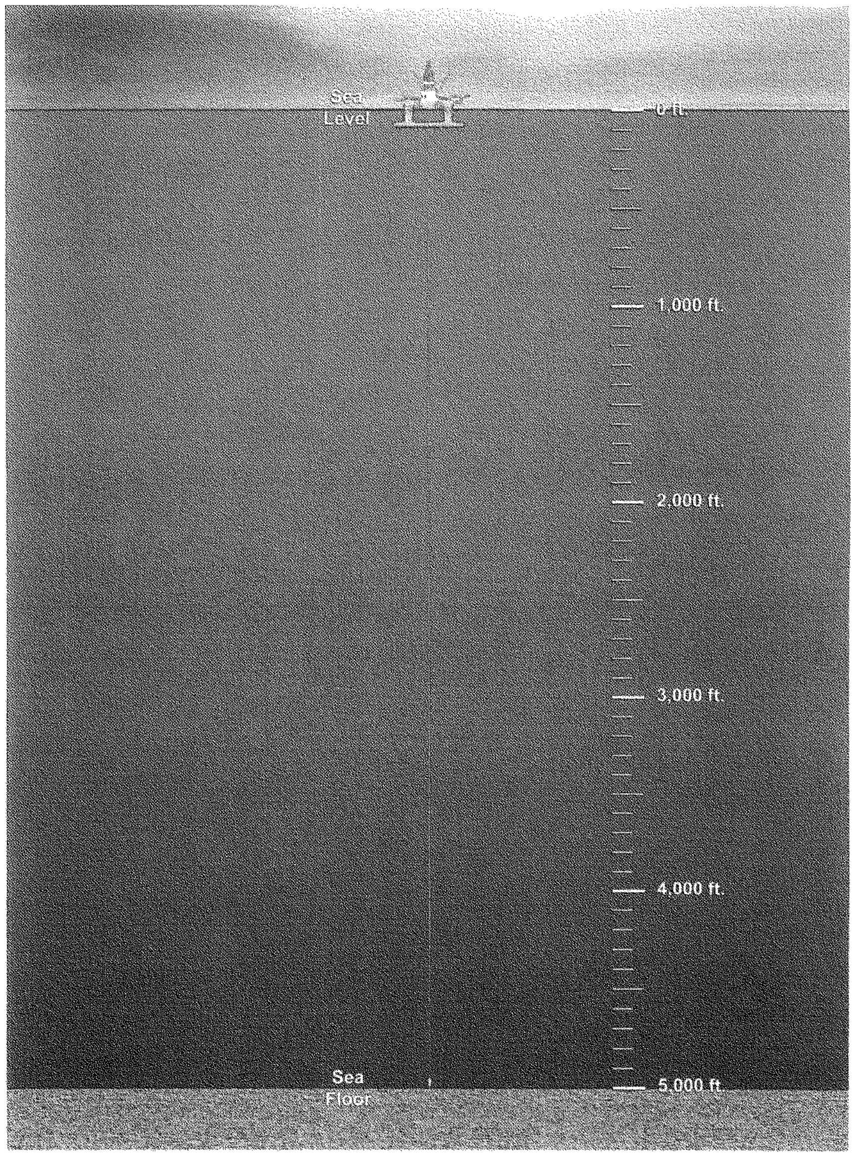
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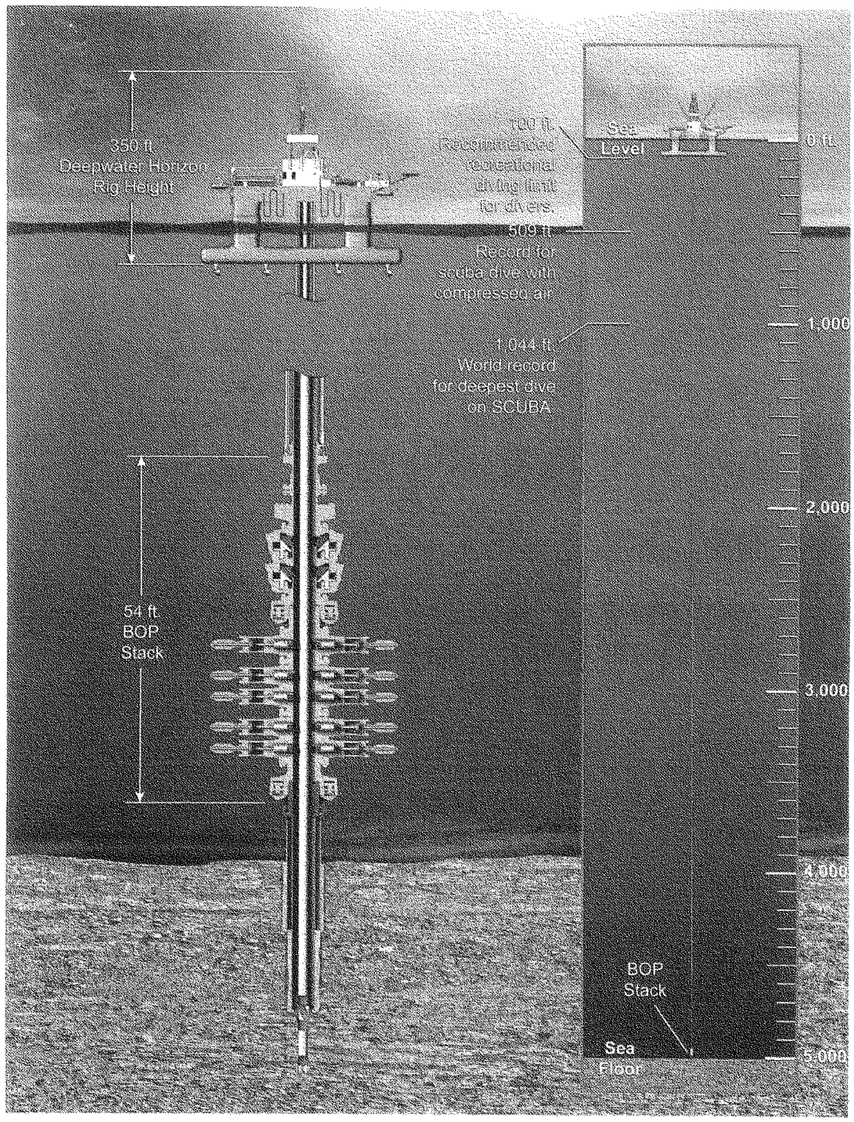
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for divers.
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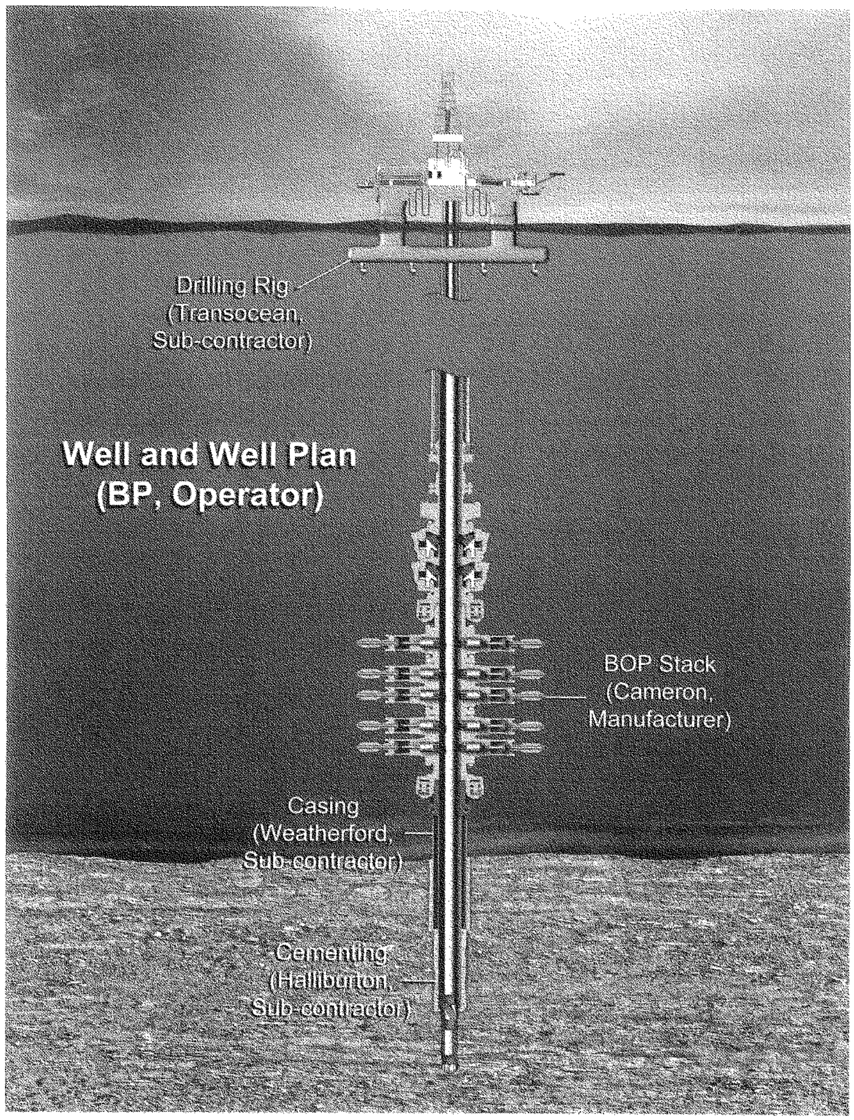
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Sub-contractor)
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BOP Stack
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Casing
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Cementing
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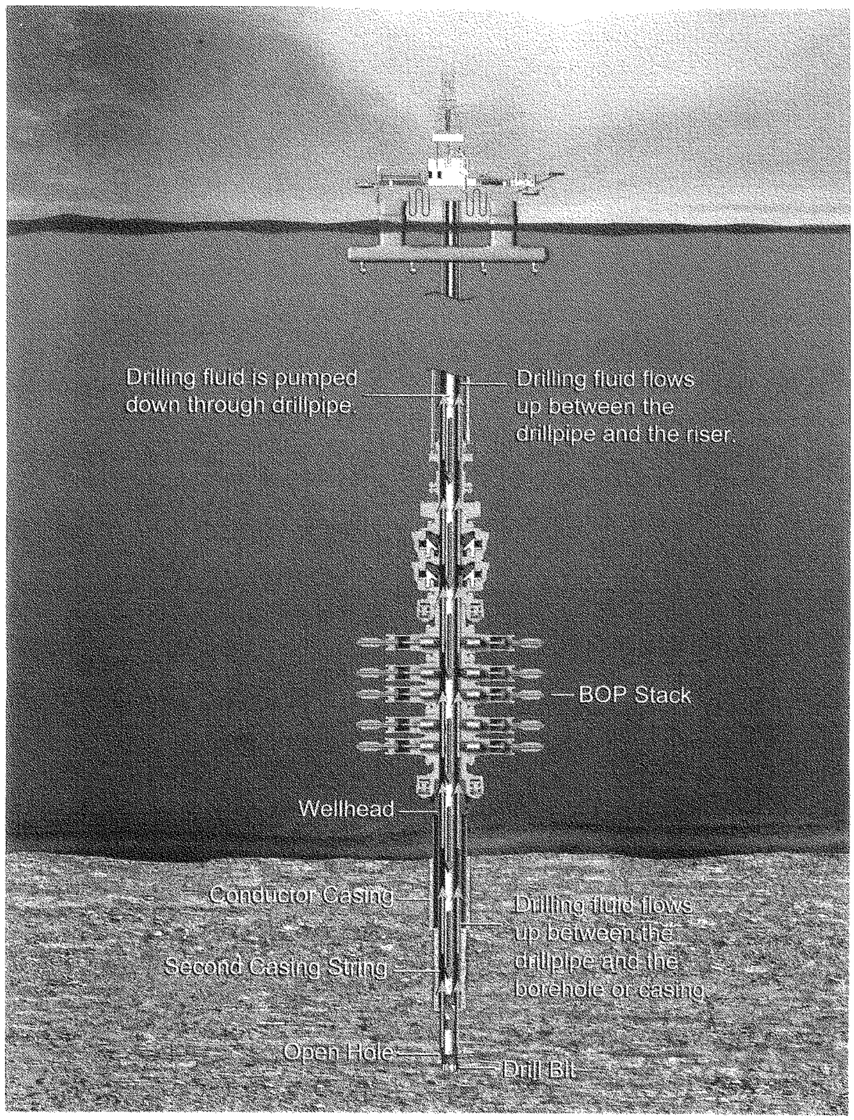
Sub-contractor)


Drilling fluid is pumped
down through drillpipe.
Drilling fluid flows
up between the
drillpipe and the riser.
BOP Stack
Wellhead
Conductor Casing
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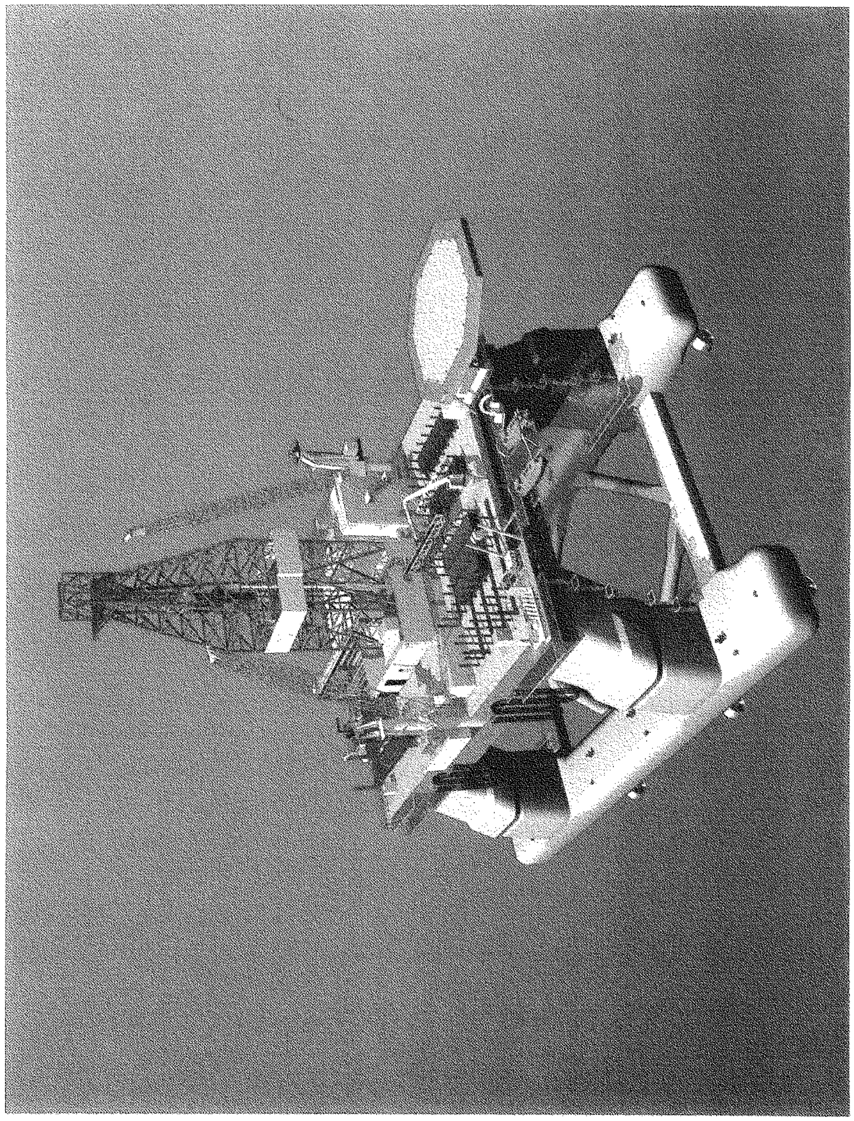
up between the
drillpipe and the
borehole or casing.
Second Casing String
Open Hole
Drill Bit



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**TESTIMONY OF
REAR ADMIRAL BRIAN SALERNO
ASSISTANT COMMANDANT FOR MARINE SAFETY, SECURITY, AND STEWARDSHIP**

AND

**REAR ADMIRAL PETER NEFFENGER
DEPUTY NATIONAL INCIDENT COMMANDER**

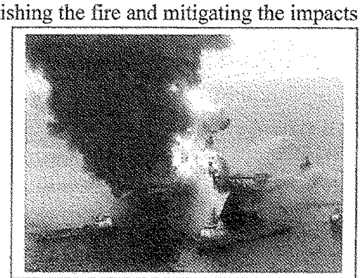
**ON THE
DEEPWATER HORIZON FIRE AND MC 252 OIL SPILL**

**BEFORE THE
HOUSE COMMITTEE ON TRANSPORTATION & INFRASTRUCTURE
MAY 19, 2010**

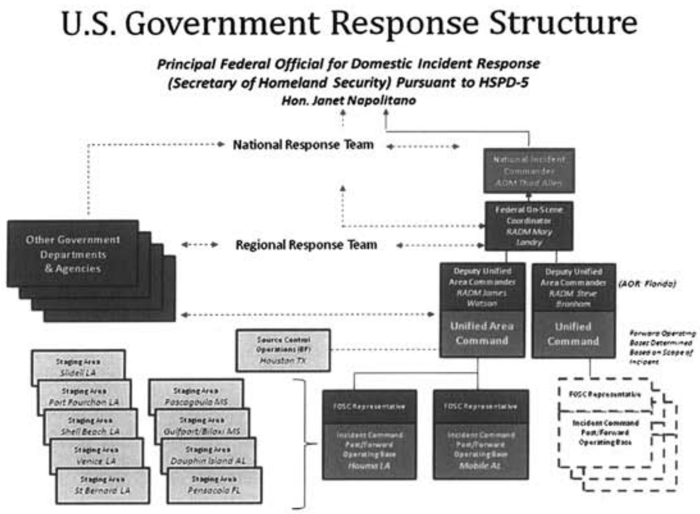
Good morning Mr. Chairman and distinguished members of the Committee. I am grateful for the opportunity to testify before this committee on the subject of the BP Deepwater Horizon oil spill currently ongoing in the Gulf of Mexico.

On the evening of April 20, 2010, the Transocean-owned, British Petroleum-chartered, Marshall Islands-flagged Mobile Offshore Drilling Unit (MODU) DEEPWATER HORIZON, located approximately 72 miles Southeast of Venice, Louisiana, reported an explosion and fire onboard. This began as a Search and Rescue (SAR) mission—within the first few hours, 115 of the 126 crewmembers were safely recovered; SAR activities continued through April 23rd, though the other 11 crewmembers remain missing.

Concurrent with the SAR effort, the response to extinguishing the fire and mitigating the impacts of the approximate 700,000 gallons of diesel fuel onboard began almost immediately, in accordance with the operator's Minerals Management Service (MMS)-approved Response Plan, oil spill response resources, including Oil Spill Response Vessels (OSRVs), were dispatched to the scene. After two days of fighting the fire, the MODU sank into approximately 5,000 feet of water on April 22nd. On April 23rd, remotely operated vehicles (ROVs) located the MODU on seafloor, and, on April 24th, BP found the first two leaks in the riser pipe and alerted the federal government. ROVs continue to monitor the flow of oil.



As the event unfolded, a robust Incident Command System (ICS) response organization was stood up in accordance with the National Response Framework (NRF) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). ICS is utilized to provide a common method for developing and implementing tactical plans to efficiently and effectively manage the response to oil spills. . The ICS organization for this response includes Incident Command Posts and Unified Commands at the local level, and Unified Area Commands at the regional level. It is comprised of representatives from the Coast Guard (Federal On-Scene Coordinator (FOSC)), other federal, state, and local agencies, as well as BP as a Responsible Party.



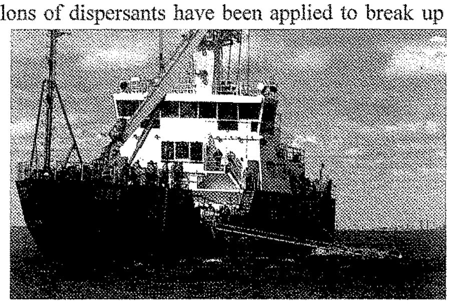
The federal government has addressed the Gulf Oil Spill with an all-hands-on deck approach from the moment the explosion occurred. During the night of April 20th—the date of the explosion—a command center was stood up on the Gulf Coast to address the potential environmental impact of the event and to coordinate with all state and local governments. After the MODU sank on the 22nd, the National Response Team (NRT), led by the Secretary of Homeland Security and comprised of 16 Federal agencies including the Coast Guard, other DHS offices, the Environmental Protection Agency (EPA), National Oceanic and Atmospheric Administration (NOAA), Department of Interior (DOI), as well as Regional Response Teams (RRT), were activated.

On April 29, Secretary Napolitano declared the event a Spill of National Significance (SONS), which enhanced operational and policy coordination at the national level and concurrently allowed Admiral Allen's appointment as the National Incident Commander (NIC) for the Administration's continued, coordinated response. The NIC's role is to coordinate strategic communications, national policy, and resource support, and to facilitate collaboration with key parts of the federal, state and local government.

The NIC staff is comprised of subject matter experts from across the federal government, allowing for immediate interagency collaboration, approval and coordination. While the FOSC maintains authorities for response operations as directed in the National Contingency Plan, the NIC's primary focus is providing national-level support to the operational response. This means providing the Unified Command with everything that they need – from resources to policy decisions – to sustain their efforts to secure the source and mitigate the impact. This will be a sustained effort that will continue until the discharges are permanently stopped and the effects of the spill are mitigated to the greatest extent possible. Beyond securing the source of the spill, the Unified Command committed to minimizing the economic and social impacts to the affected communities and the nation.

UNIFIED RECOVERY EFFORTS

The Unified Command continues to attack the spill offshore. As of May 13, 2010, over 5 million gallons of oily water have been successfully recovered using mechanical surface cleaning methods. Further, approximately 475,000 gallons of dispersants have been applied to break up the slick, and controlled burns have been used as weather conditions have allowed. In addition to the ongoing offshore oil recovery operations, significant containment and exclusion booms have been deployed and staged strategically throughout the Gulf region. These booms are used to protect sensitive areas including: environmental and cultural resources, and critical infrastructure, as identified in the applicable Area Contingency Plans (ACPs). To date, more than a million feet of boom have been positioned to protect environmentally sensitive areas. Fourteen staging areas have been established across the Gulf Coast states and three regional command centers. The Department of Defense has activated National Guard troops; over 1,000 are currently deployed, and up to 17,500 have been approved for deployment.



VOLUNTEERISM AND COMMUNICATION WITH LOCAL COMMUNITIES

A critical aspect of response operations is active engagement and communication with the local communities. Several initiatives are underway to ensure regular communications with the local communities.

1. Active participation and engagement in town hall meetings across the region with industry and government involvement.

2. Daily phone calls with affected trade associations.

3. Coordination of public involvement through a volunteer registration hotline (1-866-448-5816), alternative technology, products and services e-mail (horizonsupport@aol.com), and response and safety training scheduled and conducted in numerous locations.

4. More than 7,100 inquiries received online via the response website (www.deepwaterhorizonresponse.com) with more than 6,121 inquiries completed, with 4-hour average time of response.

5. Over 568,000 page hits on response website.

6. Over 110 documents created/posted to response website for public consumption.

7. News, photo/video releases, advisories to more than 5,000 media/governmental/private contacts.

8. Full utilization of social media including Facebook, YouTube, Twitter and Flickr.

9. Establishment of Local Government hotlines in Houma, LA (985-493-7835), Mobile, AL (251-445-8968), Robert, LA (985-902-5253).

MODU REGULATORY COMPLIANCE REQUIREMENTS

43 U.S.C. 1331, *et seq* mandates that MODUs documented under the laws of a foreign nation such as the DEEPWATER HORIZON, be examined by the Coast Guard. These MODUs are required to obtain a U.S. Coast Guard Certificate of Compliance (COC) prior to operating on the U.S. Outer Continental Shelf (OCS).

In order for the Coast Guard to issue a COC, one of three conditions must be met:

1. The MODU must be constructed to meet the design and equipment standards of 46 CFR part 108.
2. The MODU must be constructed to meet the design and equipment standards of the documenting nation (flag state) if the standards provide a level of safety generally equivalent to or greater than that provided under 46 CFR part 108.
3. The MODU must be constructed to meet the design and equipment standards for MODUs contained in the International Maritime Organization Code for the Construction and Equipment of MODUs.

The DEEPWATER HORIZON had a valid COC at the time of the incident, which was renewed July 29, 2009 with no deficiencies noted. The COC was issued based on compliance with number three, stated above. COCs are valid for a period of two years.

In addition to Coast Guard safety and design standards, MMS and the Occupational Safety and Health Administration (OSHA) also have safety requirements for MODUs. MMS governs safety and health regulations in regard to drilling and production operations in accordance 30 CFR part 250, and OSHA maintains responsibility for certain hazardous working conditions not covered by either the Coast Guard or MMS, as per 29 U.S.C. 653 (a) and (b)(1).

COAST GUARD / MMS JOINT INVESTIGATION RESPONSIBILITIES

On April 27th, Secretary Napolitano and Secretary of the Interior Ken Salazar signed the order that outlined the joint Coast Guard-MMS investigation into the Deepwater Horizon incident.

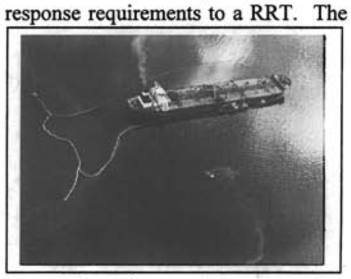
Information gathering began immediately after the explosion—investigators from both agencies launched a preliminary investigation that included evidence collection, interviews, witness statements from surviving crew members, and completion of chemical tests of the crew. The aim of this investigation is to gain an understanding of the causal factors involved in the explosion, fire, sinking and tragic loss of 11 crewmembers.

The joint investigation will include public hearings, which - have already begun in Kenner, LA. The formal joint investigation team consists of equal representation of Coast Guard and MMS members. The Coast Guard has also provided subject matter experts and support staff to assist in the investigation.

LESSONS LEARNED FROM PAST RESPONSES

The Coast Guard has been combating oil and hazardous materials spills for many years;in particular, the 1989 major oil spill from the EXXON VALDEZ yielded comprehensive spill preparedness and response responsibilities.

In the 20 years since the EXXON VALDEZ, the Coast Guard has diligently addressed the Nation's mandates and needs for better spill response and coordination. For example, a SONS Exercise is held every three years. In 2002, the SONS Exercise was held in New Orleans to deal with the implications of a wellhead loss in the Gulf of Mexico. In that exercise, the SONS team created a vertically integrated organization to link local response requirements to a RRT. The requirements of the RRT are then passed to the NRT in Washington, D.C, thereby integrating the spill management and decision processes across the federal government. The response protocols used in the current response are a direct result of past lessons learned from real world events and exercises including SONS.



Although the EXXON VALDEZ spill shaped many of the preparedness and response requirements and legislation followed to this day, other significant events since 1989 have generated additional lessons learned that have informed our response strategies. For example, the M/V COSCO BUSAN discharged over 53,000 gallons of fuel oil into San Francisco Bay after colliding with the San Francisco-Oakland Bay Bridge in heavy fog. Through the recovery of over 40 percent of the spilled product, the Unified Command recognized improvements were needed in some areas. As a result, new guidance and policy was developed to better utilize volunteers in future responses. Additionally, standard operating procedures for emergency notifications were improved to ensure better vertical communications between the federal responders and local governments. Furthermore, steps were taken to pre-identify incident command posts (ICPs) and improve booming strategies for environmentally sensitive areas.

Most recently, the Coast Guard led a SONS exercise in March, 2010. Nearly 600 people from over 37 agencies participated in the exercise. This exercise scenario was based on a catastrophic oil spill resulting from a collision between a loaded oil tanker and a car carrier off the coast of Portland, Maine. The exercise involved response preparedness activities in Portland, ME; Boston, MA; Portsmouth, NH; Portsmouth, VA,; and Washington, DC. The response to the SONS scenario involved the implementation of oil spill response plans, and response organizational elements including two Unified Commands, a Unified Area Command, and the NIC in accordance with the National Contingency Plan and national Response Framework. The exercise focused on three national-level strategic objectives:

1. Implement response organizations in applicable oil spill response plans
2. Test the organization's ability to address multi-regional coordination issues using planned response organizations
3. Communicate with the public and stakeholders outside the response organization using applicable organizational components

The SONS 2010 exercise was considered a success, highlighting the maturity of the inter-agency and private oil spill response capabilities and the importance of national-level interactions to ensure optimal information flow and situational awareness. The timely planning and execution of this national-level exercise have paid huge dividends in the response to this potentially catastrophic oil spill in the Gulf of Mexico.

ROLE OF THE OIL SPILL LIABILITY TRUST FUND

The Oil Spill Liability Trust Fund (OSLTF), established in the Treasury, is available to pay the expenses of federal response to oil pollution under the Federal Water Pollution Control Act (FWPCA)(33 USC §1321(c)) and to compensate claims for oil removal costs and certain damages caused by oil pollution as authorized by the Oil Pollution Act of 1990(OPA) (33 USC §2701 et seq). These OSLTF uses will be recovered from responsible parties liable under OPA when there is a discharge of oil to navigable waters, adjoining shorelines or the Exclusive Economic Zone (EEZ).

The OSLTF is established under Revenue Code section 9509 (26 USC §9509), which also describes the authorized revenue streams and certain broad limits on its use. The principal revenue stream is an 8 cent per barrel tax on oil produced or entered into the United States(see the tax provision at 26 USC §4611). The barrel tax increases to 9 cents for one year beginning on January 1, 2017. The tax expires at the end of 2017. Other revenue streams include oil pollution-related penalties under 33 USC §1319 and §1321, interest earned through Treasury investments, and recoveries from liable responsible parties under OPA. The current OSLTF balance is approximately $1.6 billion. There is no cap on the fund balance but there are limits on its use per oil pollution incident. The maximum amount that may be paid from the OSLTF for any one incident is $1 billion. Of that amount, no more than $500 million may be paid for natural resource damages. 26 USC §9509(c)(2).

OPA further provides that the OSLTF is available to the President for certain purposes (33 USC §2712(a)). These include:

> Payment of **federal removal costs** consistent with the NCP. This use is subject to further appropriation, except the President may make available up to $50 million annually to carry out 33 USC §1321(c) (federal response authority) and to initiate the assessment of natural resource damages. This so-called "emergency fund" amount is available until expended. If funding in the emergency fund is deemed inadequate to fund federal response efforts, an additional $100 million may be advanced from the OSLTF when the emergency fund is inadequate subject to notification of Congress no later than 30 days after the advance. See 33 USC §2752(b). Additional amounts from the OSLTF for Federal removal are subject to further appropriation.

Payment of **claims for uncompensated removal costs and damages**. Payments are not subject to further appropriation from the OSLTF. 33 USC §2752(b).

Payment of federal administrative, operating and personnel costs to implement and enforce the broad range of oil pollution prevention, response and compensation provisions addressed by the OPA. This use is subject to further appropriation to various responsible federal agencies.

National Pollution Funds Center (NPFC) Funding and Cost Recovery

The NPFC is a Coast Guard unit that manages use of the emergency fund for federal removal and trustee costs to initiate natural resource damage assessment. The NPFC also pays qualifying claims against the OSLTF that are not compensated by the responsible party. Damages include real and personal property damages, natural resource damages, loss of subsistence use of natural reosources, lost profits and earnings of businesses and individuals, lost government revenues, and net costs of increased or additional public services that may be recovered by a State or political subdivision of a state.

In a typical scenario, the FOSC, Coast Guard or EPA accesses the emergency fund to carry out 33 USC §1321(c), i.e., to remove an oil discharge or prevent or mitigate a substantial threat of discharge of oil to navigable waters, the adjoining shoreline or the EEZ. Costs are documented and provided to NPFC for reconciliation and eventual cost recovery against liable responsible parties. Federal trustees may request funds to initiate an assessment of natural resource damages and the NPFC will provide those funds from the emergency fund as well.

Claims for OPA removal costs and damages that have been denied or not settled by the responsible party after 90 days may be presented to the NPFC for payment from the OSLTF. State claims for removal costs can be presented directly to the NPFC against the OSLTF. General claims provisions are delineated in 33 USC §2713 and the implementing claims regulations for claims against the OSLTF in 33 CFR 136.

OPA provides that all claims for removal costs or damages shall be presented first to the responsible party. Any person or government may be a claimant. If the responsible party denies liability for the claim, or the claim is not settled within 90 days after it is presented, a claimant may elect to commence an action in court against the responsible party or to present the claim to the NPFC for payment from the OSLTF. OPA provides an express exception to this order of presentment in respect to State removal cost claims. Such claims are not required to be presented first to the responsible party and may be presented direct to the NPFC for payment from the OSLTF. These and other general claims provisions are delineated in 33 USC section 2713 and the implementing regulations for claims against the OSLTF in 33 CFR Part 136. NPFC maintains information to assist claimants on its website at www.uscg.mil/npfc.

NPFC pursues cost recovery for all OSLTF expenses for removal costs and damages against liable responsible parties pursuant to federal claims collection law including the Debt Collection Act, implementing regulations at 31 CFR parts 901-904 and DHS regulations in 6 CFR part 11.

Aggressive collection efforts are consistent with the "polluter pays" public policy underlying the OPA. Nevertheless, the OSLTF is intended to pay even when a responsible party does not pay.
OSLTF and the Deepwater Horizon

On May 12th, the Administration proposed a legislative package that will: enable the Deepwater Horizon Oil Spill response to continue expeditiously; speed assistance to people affected by this spill; and strengthen and update the oil spill liability system to better address catastrophic events. The bill would permit the Coast Guard to obtain one or more advances -- up to $100 million each -- from the Principal Fund within the Oil Spill Liability Trust Fund to underwrite federal response activities taken in connection with the discharge of oil that began in 2010 in connection with the explosion on, and sinking of, the mobile offshore drilling unit Deepwater Horizon. To deal more generally with the harms created by oil spills as well as to toughen and update these laws, the bill would, for any single incident, raise the statutory expenditure limitation for the Oil Spill Liability Trust Fund from $1 billion to $1.5 billion and the cap on natural resource damage assessments and claims from $500 million to $750 million.

The emergency fund has been accessed by the FOSC for $65 million as of May 11, 2010. BP, a responsible party, is conducting and paying for most response activities. The Coast Guard requested and received an advance of $100 million from the OSLTF principal fund to the emergency fund as authorized by 33 USC §2752(b), because the balance remaining in the emergency fund was not adequate to fund anticipated federal removal costs. The BP and Transocean have been notified of their responsibility to advertise to the public the process by which claims may be presented. As of May 13th, 8160 claims have been opened with BP, and nearly $5.3 million has been disbursed; though Transocean has also already been designated as a responsible party, all claims are being processed centrally through BP.

CONCLUSION

Through the National Incident Command, we are ensuring all capabilities and resources—government, private, and commercial—are being leveraged to protect the environment and facilitate a rapid, robust cleanup effort. Every effort is being made to secure the source of the oil, remove the oil offshore, protect the coastline, include and inform the local communities in support of response operations, and mitigate any impacts of the discharge.

Thank you for the opportunity to testify today. I look forward to your questions.

Testimony of Larry Schweiger
National Wildlife Federation
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(703) 438-6000

Testimony of Larry Schweiger
President & CEO of the National Wildlife Federation
House Transportation and Infrastructure Committee
Deepwater Horizon: Oil Spill Prevention and Response Measure
And Natural Resource Impacts
May 19, 2010

On behalf of the National Wildlife Federation (NWF), the nation's largest conservation advocacy and education organization, and our more than four million members and supporters, we thank you for the opportunity to provide our comments and recommendations on the Deepwater Horizon: Oil Spill Prevention and Response Measure and Natural Resource Impacts.

National Wildlife Federation's mission is to inspire Americans to protect wildlife for future generations. To achieve this mission, the organization is focused on confronting global warming, safeguarding and restoring wildlife, and connecting people with nature.

First of all, let me extend my sincere condolences to the families of the 11 men who lost their lives as a result of the explosion on the Deepwater Horizon. Our thoughts and prayers go out to them during this difficult time.

For years, NWF has been deeply involved on the ground, working to protect wildlife in the Gulf of Mexico and to restore Louisiana's rapidly disappearing coast. So as soon as we learned of the explosion and subsequent crisis in the Gulf, myself and others within the NWF family immediately traveled to Venice, Louisiana, and parts of Mississippi to see firsthand the situation and to get the word out about the spill's impact on wildlife. My trip left me frustrated, saddened, and angry about how this happened and the resulting devastation the Gulf will experience for years to come. But now I am more committed than ever to ensuring we learn from this experience, hold BP and other parties responsible, restore resiliency to the coast, and usher in a new energy policy.

Long Term and Short Term Impacts to the Gulf of Mexico

The Gulf of Mexico is home to more than 400 marine and coastal fish and wildlife species. It is tragic that this important ecosystem could be impacted for decades to come by the BP Oil Spill, which is still gushing oil into Gulf of Mexico more than three weeks since the Deepwater Horizon burst into flames. It is far too early to know the full magnitude of impacts the BP Oil Spill will have on fish and wildlife and the communities that depend on those resources. It is clear, however, from extensive studies following the wreck of the Exxon Valdez in 1989 in the Prince William Sound, that the impacts have the potential to be far-reaching and last for decades.

More than 20 years after the Exxon Valdez spill, oil can still be found on Alaska's beaches, and many species have not completely recovered. The pigeon guillemot (a pelagic bird) has shown few signs of recovery, in part because of lingering oil in habitats used by the bird. The once abundant herring population, an important link in the food chain that previously supported a commercial fishing industry in the area, has also not recovered. While the oil spill is strongly implicated in the population crash, it is likely that multiple factors continue to stress the herring population, preventing its full recovery. Two orca (killer whale) pods affected by the Exxon Valdez lost 40 percent of their numbers and have not fully recovered; the pods reproductive success appears to have suffered long-term damage. Finally, although some species have demonstrated significant recovery, they are still not at pre-oil spill population levels. These include sea otters, clams, mussels, goldeneyes, black oystercatchers, and harlequin ducks.[1]

To better understand the full scope of potential fish, wildlife, and habitat damage from the BP Oil Spill, several things must be kept in mind. First, the estimate of 5,000 barrels per day (bdp), or 210,000 gallons per day, which has gained a false sense of truthfulness simply through repetitive use, is discredited by multiple lines of evidence. Dr. Ian MacDonald, a professor of oceanography at Florida State University, has used sophisticated satellite imagery and standardized tables of oil thickness signatures from the National Oceanic and Atmospheric Administration (NOAA) to calculate the spill. Dr. MacDonald has calculated that the flow from the BP Oil Spill is likely to be much larger- as much as 25,000 barrels or more per day.[2] Dr. Steve Werely, an associate professor at Purdue University, has used particle image velocimetry on oil spilling from the riser pipe to calculate a spill rate of 56,000 to 84,000 bpd per day.[3]

Using the conservative figure of 25,000 bpd (1,050,000 gallons per day), BP has already spilled into the Gulf of Mexico more than twice the oil spilled in the devastating 1989 Exxon Valdez oil spill. It is disappointing that BP has not provided reliable estimates of spill volume, given the importance of early estimates to develop an effective response strategy to minimize impacts, as indicated by the Mineral Management Services (MMS).[4] This must change. In affirming the importance of accurate information, Dr. MacDonald stated to *The Washington Post*, "We're fighting a battle against this spill, this leak. Any military person knows that good casualty reports are the key to victory."[5]

A major concern with oil spills is the potential bioaccumulation by organisms of oil components, whether from oil that is fresh crude, naturally weathered, or altered by chemical dispersants. Oil is made up largely of hydrocarbons—some of the key chemicals of concern are lighter straight-chain hydrocarbons and some are polycyclic aromatic hydrocarbons (PAHs). As the oil weathers, the lighter components tend to evaporate and/or degrade more quickly, leaving the oil concentrated in the heavier (i.e., higher molecular weight) compounds—including PAHs—which in turn can dissolve to some extent in water.[6] PAHs (and to a lesser extent some other oil components) can then bioaccumulate in organisms.[7] Once inside an organism, PAHs can cause toxicity in various ways, including through edema and deformities in embryos. Research has also shown that exposure to light can lead to the transformation of PAHs into chemicals that are even more toxic to organisms.

One commonly used technique to address oil spills is the use of chemical dispersants. Dispersants are intended to break up oil slicks and are used where there is concern that slicks may wash ashore. But using dispersants on an oil spill is an acknowledgement that large oil spills cannot be effectively cleaned up; the action does not reduce the total amount of oil in the environment, but simply subscribes to the falsehood that "the solution to pollution is dilution." The dispersed oil mixes into the water and, while it may increase the rate of degradation of the oil, increases the risk that aquatic life in the water and on the sea floor will be exposed to oil.[8] Furthermore, dispersants add yet more inherently toxic chemicals to the already toxic oil. Unfortunately, exposure to a complex cocktail of chemicals can have a very different and more serious effect on organisms than the individual components alone, and recent research has shown the potential of lower exposures to various chemicals to cause developmental and other impacts in aquatic life. Dispersed oil, if not degraded, could result in exposure to organisms in the entire food chain, from phytoplankton and zooplankton to top level predators such as fish-eating birds. Some laboratory studies have shown increased oil component exposure and effects in diverse animals (such as in a rockfish species and topsmelt embryos) that are exposed to dispersed oil compared to standard oil in water mixtures.[9, 10]

Five of the world's seven species of sea turtles are found in the Gulf of Mexico. All five—including the loggerhead sea turtle—are listed as either endangered or threatened under the federal Endangered Species Act (ESA). Oil threatens these reptiles at every stage of their lives: as eggs, hatchlings, juveniles and adults. Studies have found that sea turtle eggs contaminated by even a small amount of oil may either fail to hatch or produce weakened, deformed hatchlings. The hatchlings that do make it successfully from their sandy nests to the sea face several additional threats. Because they are tiny, they risk being impaired or overwhelmed by the BP oil slick. Young turtles spend much of their time swimming at the surface, making them more likely than adults to run into a slick on top of the water and leaving them prone to being poisoned or coated by the sticky oil. This is currently the nesting season for sea turtles in the Gulf of Mexico, and this year's entire class of hatchlings will be entering waters contaminated by the BP Oil Spill.

Adult sea turtles are also at risk. Studies have found that sea turtles, which must surface regularly to breathe, show no natural avoidance behaviors when confronted with an oil slick. I witnessed this behavior firsthand when I was in the Gulf of Mexico. Adult turtles will even attempt to feed on tarballs, the dark chunks that form as crude oil weatherizes, or ages. Furthermore, because oil can kill huge swaths of seagrass, a primary food source for green sea turtles, adult sea turtles may also suffer from malnutrition.

Birds that come into contact with oil can be impacted in many ways, often resulting in death. Gulls, pelicans, and other birds that frequently land and float on the water can experience deadly hypothermia when oil destroys the insulating quality of their feathers. The birds try to eat more to stay warm, but their ability to forage decreases as they sink lower and lower into the water, their buoyancy decreased by the oil. The birds desperately groom their feathers with their bills to prevent themselves from sinking, inevitably consuming some oil, which may lead to serious effects: ulcers, diarrhea, kidney and liver damage, anemia and even death. Breathing in oil can lead to pneumonia, neurological damage, and eventually cancer. Furthermore, the toxic chemicals can accumulate in their bodies, weakening them and making them more prone to disease and predation. There is also evidence that even small quantities of residual oil can reduce the reproductive success of birds.

Birds especially at risk from the BP Oil Spill include the brown pelican (removed from the endangered species list in 2009 after a long recovery from the effects of DDT), terns (royal, Caspian, Sandwich and least), and laughing gulls. When I visited the Gulf, I saw Sandwich terns diving through the oil slick to catch fish near the surface. On a nearby unprotected island, pelicans tended their nests, likely bringing contaminated fish back to their young. As the oil approaches coastal wetlands, it will threaten wading birds such as roseate spoonbills, ibis, reddish egrets, and other herons and egrets. The snowy plover is a federally-listed threatened species that breeds along the Gulf coast.

The effects of oil on marine mammals can be difficult to assess. Sperm whales, bottlenose dolphins, and other mammals in the Gulf live most of their lives at sea. For this reason, they are likely to be among the first Gulf inhabitants to encounter the spill. Unlike fish, marine mammals are air-breathers and must surface frequently, bringing them into contact with the slick that now covers thousands of square miles of the Gulf. Marine mammals can suffer a variety of ill effects from exposure to oil: chemical burns and irritation from direct contact, ulcers and internal bleeding from consumption, and poisoning from feeding on contaminated prey.

The area of the BP Oil Spill overlaps extensively with areas that endangered sperm whales use year-round. Female and juvenile sperm whales especially seem to favor feeding around the Mississippi River Delta and the underwater Mississippi Canyon, which is where the Deepwater Horizon platform was located and where oil is now spewing from the bottom of the sea. Of particular concern is that oil is being released from the ocean floor about a mile below the surface—a depth to which sperm whales dive to feed on squid and fish.

Research has also suggested potential harm to coral reefs from oil dispersants. For example, a study using Egyptian crude oil found that dispersed oil—and the dispersants themselves (though not dispersants used to date for the BP Oil Spill) —were more toxic to two Indo-Pacific coral species than the control oil.[11]

The seafood industry has long been at the heart of coastal Louisiana's economy. Shrimp, oysters, and other seafood pump $2.4 billion a year into the Gulf Coast economy. Already, federal authorities have temporarily banned commercial and recreational fishing in the waters most affected by the spill, citing health concerns. Officials in Louisiana and Mississippi are seeking emergency declarations for commercial fisheries. While in Venice, Louisiana, I heard from men and women who have spent their lives on the water. After dealing with the devastation of Hurricane Katrina, these commercial fishermen are now facing a potentially graver threat. In Hopedale, Louisiana, people who typically make their living from the bounty of the sea are now standing in unemployment lines, waiting for relief.

It is too early to assess the full economic impact of the BP Oil Spill on the Gulf's fisheries, but it is clear that coastal communities may be affected for years to come. Because both shrimp and oysters readily consume environmental toxicants, both are likely to pass on the contaminants from the spill to their predators, including fish, whales, and humans. Following an oil spill, fish eggs and larvae are at particular risk because they are immobile and cannot escape the spreading oil slick. Furthermore, the eggs and larvae are susceptible to even minute quantities of toxic chemicals. Making matters even worse in the current situation, the BP Oil Spill comes during spawning season, threatening the survival of the next generation of the Gulf's fish and shellfish. Fish and shellfish are a key link in the region's food chain, with many seabirds and other wildlife relying on them for sustenance. The presence of oil puts the entire food chain at risk, from phytoplankton and zooplankton to top level predators such as fish-eating birds.

The BP Oil Spill threatens not just the economy of the Gulf Coast; it threatens the outdoor traditions of America's sportsmen and women. The most immediate impact will be on recreational fishing in the Gulf, which is worth $18.5 billion a year (in-state sales and value added impacts) and supports 113,300 jobs.[12] Every year, about 3 million people recreationally fish the salty waters of the Gulf of Mexico, supporting a variety of coastal communities. If, as feared, the oil moves into fragile coastal wetlands, waterfowl hunting may also suffer. The vast majority of ducks and geese that use the Mississippi Flyway spend their winter in Gulf Coast wetlands, making the area critical to hunters from the South to the Midwest. Each year, waterfowl hunting in the Mississippi Flyway states generates over $44 million in federal tax revenue.[13]

Inadequate Prevention – Failure to Use Existing Laws for Minimizing Environmental Impacts of Oil Drilling

One of the key lessons from this tragedy is that it was probably preventable. In the past several decades, Congress has put in place an array of environmental laws that require the review of potential harms that might arise from energy exploration and measures to avoid or minimize the risk of these harms. It appears that due to pressure and undue influence from BP and other oil industry players, MMS and other key federal agencies have failed to adhere to these laws. As a result, BP was allowed to go forward with risky offshore drilling activity, without using available spill prevention and response technology, based upon fraudulent assertions of "unlikely" spills and "sublethal" effects of spills on fish and wildlife.

Much of the blame rests with the MMS, the agency responsible for determining the environmental impact of drilling and approving specific drilling plans. Rather than fulfilling its statutory role, it simply rubber stamped BP's numerous false and misleading assertions about the supposedly negligible possibility of a large spill and the allegedly limited impacts of spills on the Gulf's biological resources. I would like to outline a few of the key regulatory failures and ethical lapses that took place at each stage of the reviews. Although I focus on reviews under National Environmental Policy Act (NEPA) and the ESA, reviews under other environmental laws presumably suffered from many of the same defects as mentioned here.

As you know, Mr. Chairman, offshore oil drilling is primarily governed by the Outer Continental Shelf Lands Act (OCSLA). OCSLA lays out four stages for offshore oil and gas operation: 1) Determination of which areas to offer for lease in a five-year period; 2) Sale of leases; 3) Exploration; and 4) Development. The NEPA, which requires that federal agencies assess the potential environmental effects of their proposed actions and consider a reasonable set of alternatives, comes into play at each of these stages. At each stage, MMS commits further resources of the federal government and forecloses options on how to proceed, so it is essential that it gathers the best available scientific information about those options and ensures maximum scientific and public input. This did not happen in the case of Oil and Gas Sale 206, the location of the BP Oil Spill. At each stage of the OCSLA process, MMS made judgments about which areas to offer to lease and approved BP's and other companies' plans to drill specific areas without scrutinizing BP's misleading assertions about the risk of accidental spills and the adequacy of spill prevention technology that would be put in place. Never did MMS perform a serious independent analysis of available information about the risk of accidental spills and how to minimize them.

Prior to the sale of drilling leases, MMS is required to conduct an Environmental Impact Assessment (EIS). In November 2006, MMS prepared a 958-page draft EIS for 11 oil and gas lease sales, known as a Multisale EIS. This draft EIS included Oil and Gas Sale 206. The draft EIS states, "the most likely oil spill scenario for spills greater than 1,000 barrels is a 4,600 barrel spill from a pipeline that breaks for 12 hours...Since loss-of-well-control events are rare events and short of duration, potential impacts to marine water quality are not expected to be significant."[14] There is no mention in the draft of the possibility of a large-scale spill and consequently no mention of requiring a known technology that could have contained a large-scale spill in the event that the manual blowout preventers failed. For instance, in some countries, acoustic control systems are required for blowout prevention.

Before the draft EIS was made available to the public, it was subject to internal review by both the Associate Director for Offshore Energy and Mineral Management and MMS headquarters. To date, no one has uncovered any evidence that anyone in these offices acknowledged the possibility of a large-scale oil spill in performing this internal review.

After a public comment period, the comments were reviewed. The formulation of the Final EIS offered MMS another opportunity to correct the EIS and account for the possibility of a major oil spill. Again, the issue was ignored. The Final EIS was published with the U.S. Environmental Protection Agency in April 2007.

In October 2007, MMS once again had the opportunity to review the environmental impact of drilling where the Deepwater Horizon rig is located when MMS conducted an Environmental

Assessment (EA) specifically for proposed Lease Sale 206 and determined that, "based on the analyses of the EA no new significant impacts were identified for proposed Lease Sale 206 that were not already assessed in the Multisale EIS, nor is it necessary to change the conclusion of the kinds, levels, or locations of impacts described in that document."[15]

Once a final EA or EIS is published, MMS begins accepting exploration plans. The law requires that MMS review each plan and decide whether to approve or deny it. According to OCSLA, exploration plans should only be approved if MMS finds that the plan "will not be unduly harmful to aquatic life in the area, result in pollution, create hazardous or unsafe conditions, unreasonably interfere with other uses of the area, or disturb any site, structure, or object of historical or architectural significance."[16] During the review of exploration plans, according to NEPA, MMS has three options based on their interpretation of the action's effect on the environment:

1) If MMS is unsure whether the action will affect the human environment, they conduct an EA. If the action will have a significant impact, then the agency must undertake an EIS. If they determine that it will not have a significant impact, the agency issues a Finding of No Significant Impact.

2) If MMS believes there will be a significant impact, they can immediately decide to conduct an EIS.

3) If MMS believes there will be no significant impact, they can grant a categorical exclusion.

Upon receipt of the BP exploration plan for Lease 206, MMS should have immediately insisted upon conducting an EIS. Given the scale of the enterprise and the inherent risk of deepwater drilling, MMS should have recognized this as a crucial opportunity to review the adequacy of the spill prevention and response technology proposed by BP. Instead MMS adhered to a legally flawed internal policy that was adopted by the Bush Administration in 2004 and granted a categorical exclusion from NEPA for a huge array of environmentally hazardous activities in the Gulf of Mexico. MMS approved the BP exploration plan on April 6, 2009, pursuant to the 2004 policy.[17]

MMS regulations state the black letter requirement of NEPA that categorical exclusions may be used only for "a category of actions which do not individually or cumulatively have a significant effect on the human environment."[18] To reach a conclusion that oil exploration activities are a category of actions without any significant effect on the environment is a travesty. NEPA was bypassed to ensure a precautionary approach to federal activities affecting the environment. Granting a categorical exclusion for oil exploration turns this precautionary approach on its head, effectively waiving environmental review of a category of activity that is among the most damaging to the environment of all.

if MMS had adequately reviewed BP's exploration plan for Lease 206, they would have found that it failed to account for the possibility of a large spill. BP's plan states that the possibility of an oil spill is "unlikely" and that "no mitigation measures other than those required by regulation and BP policy will be employed to avoid, diminish, or eliminate potential impacts on environmental resources."[19] The plan's 13-page environmental impact analysis acknowledges that oil could be released into the environment, but then fraudulently asserts that this would lead only to the possibility of "sub-lethal" effects on fish and marine mammals and that "birds could become oiled."[20] The lethal effects of oil spills on fish, wildlife, and plants are well-documented and referenced earlier in this testimony.

Violations of the Endangered Species Act

The Endangered Species Act (ESA) was passed by Congress in 1973 to protect species at risk of extinction, as well as to conserve the ecosystems on which those species depend. Under Section 7 of the ESA, MMS is required to consult "with FWS [Fish and Wildlife Service] and NMFS [the National Marine Fisheries Service] to ensure that OCS [outer continental shelf] activities under MMS jurisdiction do not jeopardize the continued existence of threatened or endangered species and/or result in adverse modification or destruction of their critical habitat."[21] In the case of Lease Sale 206, MMS failed to adhere to this duty.

We are aware of only one instance in which MMS consulted with the biological agencies regarding the impacts of Gulf of Mexico leasing activities on listed species and their habitats. MMS consulted with NMFS on the oil exploration activities outlined in the Multisale EIS and NMFS issued a Biological Opinion in July 2007 concluding that they were "not likely to jeopardize the continued existence of threatened and endangered species under NMFS jurisdiction or destroy or adversely modify designated critical habitat."[22] Considering that NMFS had no information about what measures would be taken to avoid or minimize the risks of oil spills, this conclusion that threatened and endangered species (which are referenced later in this testimony) were not at serious risk from oil exploration activities seems arbitrary at best.

At no time did MMS consult with NMFS or FWS regarding BP's exploration plan for Lease Sale 206. It was in this exploration plan where BP would not be availing itself of the latest spill prevention and response technologies and where BP made its fraudulent assertions about "sublethal" effects of oil spills on fish and wildlife. By failing to consult with NMFS and FWS regarding its decision to approve this exploration plan, MMS violated its ESA responsibilities and put fish and wildlife and the overall Gulf ecosystem at heightened risk.

As this tragedy unfolds, it has become apparent that MMS deliberately ignored their own scientists as well as scientists at NOAA that raised concerns about the failure to account for the possibility of a large-scale oil spill. According to MMS staff scientists that spoke to the *New York Times* they were overruled when they expressed safety and environmental concerns about proposed drilling projects. In addition, the *New York Times* obtained a 2009 letter from NOAA directed at MMS, which criticizes the agency for repeatedly understating the possibility and effects of large oil spills. The NOAA letter also accuses MMS of minimizing the frequency of past spills.[23]

Lessons Learned- Alaska's Northern Coast
In order to avoid future similar tragedies, it is essential that the lessons learned from the BP Oil Spill immediately be applied to oil and gas exploration and production in all U.S. waters. A case in point is that absent MMS action, Shell Oil will begin exploratory drilling this summer in the Chukchi Sea in the very same area that the Department of the Interior has proposed be designated as Critical Habitat under the Endangered Species Act for the polar bear. MMS has the authority and duty under NEPA to supplement the existing environmental assessments and environmental impact statements in response to 'significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.' (40 C.F.R. § 1509(c)(1)(ii)). The BP Oil Spill clearly demonstrates an incorrect MMS finding that a large spill is "too remote and speculative an occurrence" to warrant analysis, and that "a large spill likely would not be from a well-control incident." It is imperative that MMS suspend its approval of Shell's drilling plans for further assessment in light of the BP Oil Spill.

The BP Oil Spill calls into question whether oil and gas exploration should be allowed at all in certain sensitive and remote habitats. Although accidents such as the BP Oil Spill have a low probability of occurrence, when they do occur they have a very high probability of causing significant harm. A similar event in the Chukchi and Beaufort Seas, where the polar bear and other endangered species reside, calls into question allowing any oil and gas development on the OCS of Alaska's northern coast.

Responsibility and Restoring the Coast

In addition to BP and others responsibility to respond and address the short term impacts of the spill, they also have a long term responsibility to use all tools available to them to restore the coast to its pre-oil spill condition. We do not have all the answers on how long it might take or how much it will cost to do it, but the federal government must be a watchdog to ensure that this happens.

Recommendations to Reform the Oil Pollution Act of 1990 (OPA 90)
Shortly after the Exxon Valdez oil spill, Congress passed the Oil Pollution Act of 1990 (OPA 90) that made some important advances in spill safety. But our long-term experience with the Exxon Valdez spill and the obvious impacts of the BP spill today make it clear that OPA 90 is not adequate to protect the lives and natural resources of Americans or to ensure that the corporations responsible are held accountable. Congress should therefore act now to reform OPA 90 to ensure that America and Americans have the financial resources to respond to the BP spill fouling the waters of the Gulf today, to ensure that there are fiscal incentives for oil and gas companies to employ the very best in safety processes and technology, and to ensure an opportunity for citizens to protect themselves, their livelihoods, and America's natural resources by participating meaningfully in the oil and gas regulatory process.

As an immediate first step, we need to make sure Americans and America's natural resources damaged by the BP spill are taken care of immediately; regardless of how long it takes to determine who is to blame and how much they owe. Litigation arising from the Exxon Valdez oil spill lasted 20 years. While corporations may be able to wait that long, people and wildlife cannot. As a result, OPA 90 created the Oil Spill Liability Trust Fund to ensure that America and its resources are taken care of today. This trust fund can be used to provide damage relief to injured parties unable or delayed in obtaining compensation from responsible parties. However, the total amount that can be paid out for all claims resulting from each incident is limited to $1 billion in economic damages and $500 million for natural resources claims. Given the likelihood of multi-billion dollar damages from the BP spill, this limitation would leave many injured parties (including states) bearing a large proportion of the cost. National Wildlife Federation urges Congress to increase the amount paid into the Oil Spill Liability Trust Fund and to increase or remove the limits on claims.

Second, we need to reform OPA 90 to ensure that the responsible parties in the BP Oil Spill pay for the damage caused and, in the longer term, that the companies we entrust with the privilege of drilling for oil in federal waters have powerful financial incentives to emphasize safety for employees and the environment. To do this, NWF suggests that Congress remove the cap on liability in OPA 90 and remove the limit on punitive damages for maritime oil spills created by the Supreme Court in *Exxon Shipping Co. v Baker*, 554 U.S. __, 128 S.Ct. 2605 (2008).

At this point, OPA 90 sets a liability limit for companies responsible for a spill of $75 million for all economic and resource damage beyond clean-up costs. This figure is dwarfed by the damage the BP Oil Spill has already done to the people, natural resources, and the economy of the Gulf. It is particularly worth noting that oil spill "clean-up," very narrowly defined, is often counter-productive. This means that companies responsible for spills are excused from paying for much of the necessary clean-up and also evade liability for the damage done by oil and toxic dispersants to our waters, wetlands, and beaches.

The financial incentive of oil companies to avoid spills is further minimized by the limits the Supreme Court recently placed on punitive damages in maritime law cases in *Exxon Shipping Co. v Baker*, 554 U.S. __, 128 S.Ct. 2605 (2008). After nearly 20 years of litigation, the Supreme Court held in this case that punitive damages could be no higher than the damage caused, regardless of the egregiousness of a company's conduct. In the case of the Exxon Valdez, this reduced Exxon's liability for punitive damages from $5 billion to $500 million, despite the company's reported profits of $44 billion in 2008.

BP, with reported profits of $14 billion in 2009, should not be allowed to similarly escape accountability. Courts and juries must have the ability to oppose punitive damages that directly impact a company's bottom line in a meaningful manner if we want profit-driven companies to change their internal cultures to focus on human and environmental safety. As a result, NWF recommends that Congress eliminate the limits on punitive damages.

Finally, we need to ensure that American citizens have an opportunity to effectively assess the risks oil and gas development pose for them and to play a meaningful role in decisions about permitting, safety regulations, and compliance monitoring. Shortly after the Exxon Valdez oil spill, Congress established two citizen oversight groups in Alaska—one for Prince William Sound and the other for Cook Inlet.[24] The Prince William Sound oversight group in particular has been lauded for the value it has added to safety procedures for oil shipping in the Sound area.

Congress should establish a national network of Citizens' Oversight Groups with dedicated funding from oil production and transportation operations that would monitor off-shore exploration and production as well as oil and gas transport in all its forms, including pipelines. Their function would be to ensure, through independent citizen and community involvement, that oil and gas energy systems are maintained and operated in a manner that safeguards system integrity, the workers, and the natural resources of the United States and ensures the integrity of continued oil production and shipment.

The structure for the group would best be developed in consultation with the individuals and local communities of the affected regions. To assure its independence from industry, the new citizens' oversight groups must, at a minimum, be:

* Funded at a guaranteed annual level; and

* Made up of individuals appointed (but not employed) by local governments, federally recognized tribes, indigenous groups, environmental groups, and other concerned citizens. (Industry and agency regulatory agency personnel could participate actively but in an *ex-officio* capacity.)

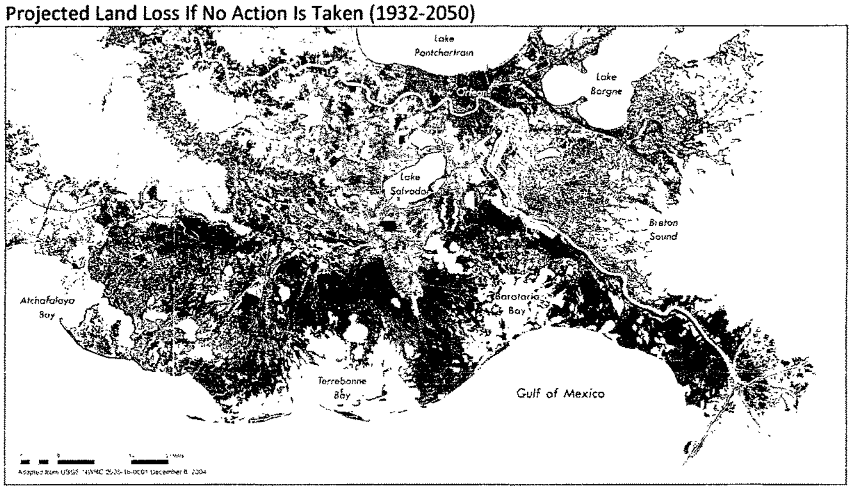
The creation of citizen advisory groups for the Gulf Coast and other areas of the United States would help combat systemic operational and oversight problems such as those we are experiencing today. The groups would provide regulators, the industry, and the general public with a truly independent evaluation of the efforts and accomplishments of the relevant oil and gas operations.

Restoring the Coast

At the same time that the federal government is ensuring that BP and other responsible parties are fulfilling their legal and financial obligations to the ecosystem and communities impacted by the oil spill, the time is ripe for the federal government to make a national investment to restore the Mississippi River Delta. The BP Oil Spill is impacting an area already on the brink of collapse. The 3.4 million acres of marsh, swamp, forests, and barrier islands in coastal Louisiana constitute the largest wetland complex in the continental United States. However, neglect and poor management by the federal government have devastated the Mississippi River Delta. Levees built for flood control and navigation have prevented the River from spreading nutrient-rich sediment that builds and sustains the Delta and surrounding wetlands, instead the sediment funnels into the Gulf of Mexico. Another contribution to land loss comes from the channels dug for oil and gas extraction, which have allowed saltwater to destroy huge cypress forests and vast areas of freshwater marsh. These legacy channels continue to allow destruction long after many of the companies that created them have disappeared, leaving no one responsible for the continued impacts.

Due to the combined causes of land loss, more than 2,100 square miles of Louisiana's vital marshlands have disappeared since the 1930s. Every 30 minutes, another area of coastland the size of a football field disappears. The disappearing Mississippi River Delta is an ecological disaster and imperils the communities along the Louisiana Coast. Historically, coastal wetlands and barrier islands protected communities and businesses from wind and waves by acting as friction to storm events. By vastly reducing Louisiana's coastal wetlands and barrier islands, we have crippled its natural hurricane defense system and placed the two million people as well as wildlife and fisheries in the area at risk.

Projected Land Loss If No Action Is Taken (1932-2050)



Given the cultural and ecological importance of this area, the nation must make the commitment to restore this disappearing landscape. In the Water Resources and Development Act of 2007 (WRDA 2007), Congress recognized the federal government's responsibility for the region by authorizing a suite of restoration projects for the Mississippi River Delta (called the Louisiana Coastal Area projects or LCA), including barrier island restoration, land-building sediment diversions, and beneficial use of dredged material. Unfortunately, Congress has yet to appropriate any money to construct these projects and the U.S. Army Corps of Engineers has missed every deadline set out in WRDA 2007 for LCA. Recognizing the need to jump start these languishing projects, President Obama has requested $19 million for LCA projects. Given the current impacts from the BP Oil Spill, Congress should increase that amount to $185 million with significant yearly increases.

In addition to the general increase in funding, immediate restoration funding is needed now. The emergency funding that was requested by the President should also include funding for restoration of the coast and national wildlife refuges, as well as funding for the FWS and the Gulf Coast's state wildlife agencies for monitoring the Gulf's wildlife and rehabilitation of the region's wildlife and their habitats from the impacts of the Oil Spill.

Yearly appropriations are uncertain, however, and this uncertainty will only increase the cost and difficulty of completing the needed restoration projects. Congress must ensure a dedicated funding stream to allow continued and swift construction. One source of funding will be the revenue stream from the 2006 Gulf of Mexico Energy Security Act (GOMESA), which provides energy-producing Gulf states a percentage of revenue from OCS drilling. Recognizing the urgency of coastal restoration and protection, Louisiana passed a constitutional amendment requiring that GOMESA revenue be directed to those needs. While GOMESA promises a steady funding stream, significant revenue is not estimated to flow to Louisiana until 2017. In the meantime, Louisiana's coast will be steadily disappearing and suffering the impacts from the BP Oil Spill and possibly additional impacts. Congress should immediately create a grant program for coastal impacts created by the oil and gas industry. This funding will allow states to build resilient coasts despite impacts from oil and gas.

Ushering in a New Energy Policy

When oil flows into our Gulf waters as fast as our gasoline money flows to the Persian Gulf, it is past time for a new energy platform.

This is not just rhetoric. I remember the Santa Barbara oil spill in '69 and was part of the calls for a response to the Exxon Valdez in '89, and I can tell you that the options we have today are qualitatively different. Then and now, we need far better safeguards to protect our wildlife and our coasts. But what is different today is that we have a real and actionable opportunity to turn the corner—once and for all—on our destructive and decades long dependence on oil.

With technology on roads, rails, and farmers fields and in factories and communities building new energy jobs across America right now, we have a path to a new energy policy. With policies in front of Congress as we speak—some that are under the jurisdiction of this Committee—we can cut our dependence in oil nearly in half by 2030 while we enhance economic growth and improve all the transportation services Americans expect.

How do we get there?

Every day that Congress fails to enact comprehensive clean energy and climate legislation, we put our economy, our national security, and our environment at greater risk. Comprehensive energy and climate legislation has the one ingredient that is absolutely essential for any energy bill—holding oil companies and other corporations across the economy accountable for doing their fair share to reduce pollution. Less pollution means more clean energy and more clean energy jobs. Less pollution means galvanizing the investment we need to deploy clean energy and clean transportation alternatives and break our addiction to oil.

We also need to safeguard the historic agreement made under the Clean Air Act between automakers, environmentalists, California, and the federal government that greatly improves vehicle fuel economy and cuts transportation greenhouse gas emissions. The new harmonized, uniform vehicle standards enacted this year cut oil consumption by 1.8 billion barrels—and all parties are looking to move quickly to extend that program beyond 2016 and enhance oil savings further. Any effort to reverse the endangerment finding that this standard depends on makes us even more dependent on oil.

We need to take vehicle electrification seriously. Starting this October, and over the next two years, virtually every major automaker—domestic and foreign—and several new start up auto companies—will start selling familiar vehicles that fuel at the equivalent of about 75 cents a gallon by plugging into the electric outlet in the garage. Today, we depend on petroleum for 95 percent of transportation fuel. With action now, that debilitating strategic dependence can be fundamentally undermined, while offering consumers and businesses not just excellent vehicles and lower pollution, but a whole new set of transportation and energy management services and benefits we do not get from our cars and buildings today. We are also seeing new technology for trucks and trains.

Finally, through the upcoming transportation bill, the climate and energy bill, and other legislation, this Committee has played and will continue to play a critical role in oil savings by reshaping and modernizing our transportation infrastructure and transportation planning. Over the past year, we have seen aggressive engagement from cities and states across the country that is fostering innovative and effective high speed rail, transit, and freight projects that boost local and regional economic development and cut oil use and pollution. These projects also improve our quality of life, modernize our cities, and drive robust job growth in domestic manufacturing, infrastructure construction, and operation. Just as the creation of the highway system reshaped America in the 20th century, this committee has the opportunity over the next year to help America develop the infrastructure necessary to cut our oil addiction and prosper in the 21st century.

Let us stop spending $1 billion a day oversees on oil and put that money to work for America by transforming our transportation system, investing in clean energy, improving jobs and lives for Americans from all walks of life, and improving our national security. At the same time, we will be moving decisively forward to a time where environmental disasters like the BP Oil Spill are not just less frequent, but impossible.

Endnotes

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[33] http://www.mbt-shoessale.com/blog/?p=638

[4] http://www.mms.gov/itd/pubs/2002/2002-033.pdf

[5] http://www.washingtonpost.com/wp-dyn/content/article/2010/05/13/AR2010051302563_2.html?sid=ST2010051302565

[6] National Research Council of the National Academy of Sciences. 2005. *Oil Spill Dispersants: Efficacy and Effects.* The National Academies Press, Washington, D.C.

[7] Bioaccumulation refers to uptake by an organism of a contaminant by any route (e.g., direct absorption from the water, ingestion with food, etc.); biomagnification refers to the process of contaminants increasing in concentration up a food web/chain (e.g., from zooplankton to forage fish). Some chemicals that bioaccumulate do not for the most part biomagnify, because they are more readily broken down and/or excreted by organisms. Though PAHs are generally thought not to biomagnify, they can still cause toxicity to organisms after bioaccumulating.

[8] National Research Council of the National Academy of Sciences. 2005. *Oil Spill Dispersants: Efficacy and Effects.* The National Academies Press, Washington, D.C.

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[14] Draft Environmental Impact Statement. Gulf of Mexico OCS Oil and Gas Lease Sales: 2007-2012. Western Planning Area Sales 204, 207, 210, 215, and 218. Central Planning Area Sales 205, 206, 208, 213, 216, and 222 Final Environmental Impact Statement -Volume I: Chapters 1-8 and Appendices. Minerals Management Service http://www.gomr.mms.gov/PDFs/2006/2006-062-Vol1.pdf. MMS 2006-062. New Orleans. November 2006.

[15] Proposed Gulf of Mexico. OCS Oil and Gas Lease Sale 206. Central Planning Area. Environmental Assessment. MMS 2007-059. New Orleans. October 2007. http://www.gomr.mms.gov/PDFs/2007/2007-059.pdf.

[16] 43 U.S.C. 1340(g)(3).

[17] According to the Departmental Manual, MMS grants Categorical Exclusions to: "Approval of an offshore lease or unit exploration. development/production plan or a Development Operation Coordination Document in the central or western Gulf of Mexico (30 CFR 250.2) except those proposing facilities: (1) In areas of high seismic risk or seismicity, relatively untested deep water, or remote areas, or (2) within the boundary of a proposed or established marine sanctuary, and/or within or near the boundary of a proposed or established wildlife refuge or areas of high biological sensitivity; or (3) in areas of hazardous natural bottom conditions; or (4) utilizing new or unusual technology." See section 15.4C(10) of the Departmental Manual, which is available at http://206.131.241.18/app_DM/act_getfiles.cfm?relnum=3625

[18] 40 CFR section 46.210

[19] Proposed Gulf of Mexico. OCS Oil and Gas Lease Sale 206. Central Planning Area. Environmental Assessment. MMS 2007-059. New Orleans. October 2007. http://www.gomr.mms.gov/PDFs/2007/2007-059.pdf.

[20] Ibid
[21]Proposed Gulf of Mexico. OCS Oil and Gas Lease Sale 206. Central Planning Area. Environmental Assessment. MMS 2007-059. New Orleans. October 2007. p. 38.
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[23] U.S. Said to Allow Drilling Without Needed Permits. *The New York Times*. May 14, 2010. p. A1.
[24] Oil Spill Pollution Act of 1990, Sec. 5002(d).

INTERTANKO

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UNITED STATE CONGRESS
HOUSE OF REPRESENTATIVES
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

HEARING ON LIABILITY AND FINANCIAL RESPONSIBILITY FOR OIL SPILLS UNDER THE OIL POLLUTION ACT OF 1990 AND RELATED STATUTES

WRITTEN TESTIMONY SUBMITTED FOR THE RECORD BY
DR PETER M SWIFT
MANAGING DIRECTOR
THE INTERNATIONAL ASSOCIATION OF INDEPENDENT TANKER OWNERS
(INTERTANKO)

June 9, 2010

INTERTANKO would like to thank the Committee for inviting the Association to provide written testimony for the record on this very important issue affecting the oil tank shipping industry.

The member companies of INTERTANKO - the International Association of Independent Tanker Owners – are based in over 45 countries and are responsible for the ownership and operation of over 70% of the world's independent oil and chemical ships trading internationally. These companies are therefore responsible for the transportation of the majority of the United States' importation of crude oil and petroleum products and export of the oil products from US refineries.

INTERTANKO's objectives are to support a professional, efficient and responsible industry that is committed to the safe, reliable and competitive shipment of oil and chemicals. The Association's goals include the development and promotion of best practices and the establishment of constructive partnerships with all stakeholders in the oil and chemical shipping community.
(For further information please see www.intertanko.com)

At the outset INTERTANKO wishes to express its sincere condolences for the tragic loss of life and to all those in the United States that have suffered from the unfortunate consequences of the accident to the Deepwater Horizon drilling rig. The Association and its member companies will naturally be pleased to make available any assistance or advice that may be useful in the clean up operations or assist in any other way.

Our specific comments below reflect our concerns at the various proposals from the Administration and Members of Congress to remove limits of liability for tank ships under the Oil Pollution Act 1990 (OPA 90).

In summary, INTERTANKO believes that:

- OPA 90's current limits for ships are realistic, adequate, allow for necessary increases, and incorporate well-tested, proactive spill response mechanisms.
- removal of the shipowner's right of limitation would cut across the 'polluter pays' principle,

the bedrock of OPA 90, which preserves a balance between shipowner and cargo owner/receiver liability.

- a shipowner must be able to insure its liabilities otherwise he cannot trade
- revising any part of this equation could prejudice the continuance of oil imports to the United States

Our comments focus on 6 key areas:

1. differential risk profile for offshore drilling facilities and ships
2. adequacy of current OPA limits for ships
3. skilled response to tanker spills
4. preservation of the 'polluter pays' principle
5. preservation of the ability of vessels to insure pollution liabilities
6. continuance of oil imports to the United States

1. differential risk profile for offshore drilling facilities and ships

Whilst OPA 90 is a wide ranging piece of legislation covering pollution from both onshore and offshore facilities and wells and all types of ship, we believe it is inappropriate to consider the offshore energy industry and individual independent shipowning companies in the same light. They are different in their operation, size, capitalisation, economic potential and in their ability to cause damage from pollution risks. By way of example, over 40% of INTERTANKO's members operate fewer than 5 tank ships, and almost 70% fewer than 10 tank ships.

The exploration of natural resources offshore can involve new and complex technology. It may therefore be a hazardous and environmentally challenging undertaking. On the other hand, the day to day transportation of oil by ship is a fundamental operation that is vital to keep our economies running. It carries with it a much lower risk profile based on tried and tested technology and operation. OPA 90 has treated the two industries separately in the past and we advocate that this separation should continue.

2. adequacy of current OPA limits for ships

The current OPA 90 limits for tank ships are realistic, adequate and allow for necessary increases.

OPA 90 was adopted following the Exxon Valdez incident in order to ensure that adequate and timely compensation is available to those who suffer damage or loss as a consequence of an oil spill. It established strict liability on the owner of the ship from which oil is discharged for removal costs and damages, subject to certain rights of limitation of liability. This balanced approach is not uncommon but is a basic feature of all similar international maritime compensation conventions. Any financial limits are related to the tonnage of the ship, ensuring that the compensation available is linked to the size of each ship and is proportionate to its risk profile.

In addition, OPA 90 established the Oil Spill Liability Trust Fund (OSLTF) which is supported by per barrel levies on the oil companies. The fund available in the event of a spill is therefore spread between the owners and oil company stakeholders in a way that reflects the principle of 'polluter pays' embodied in the Act.

The OPA 90 model for ships has functioned well since 1990. Since 1990 there has been a significant reduction in the amount of oil spilled from ships. The OPA 90 regime has been instrumental in encouraging and enhancing both ship performance and oil response operations. Since 1990 there have been a number of spills with costs exceeding USD 1 million, with responsible parties (i.e. owners) paying the bulk of oil spill removal costs and compensation for damages. In the few cases where the shipowmer limits have been exceeded, the OSLTF has stepped in with adequate means to meet additional liabilities.

Since 1990, unlike the OPA 90 provisions for offshore facilities, the OPA 90 limits of liability have been increased for tank ships to almost treble the original limits to ensure adequate compensation is available and that there is a proper apportionment of removal costs and damages between the oil industry stakeholders. In 2006, the Delaware River Protection Act (DRPA) increased limits from USD 1200 to USD 1900 per GRT for double hulled tank ships and from USD 1200 to USD 3000 for single hulled ships. Further increases were made in 2009 to USD 2,000 and USD 3,200 respectively. The DRPA also required there to be inflationary uplift in the limits to take account of the Consumer Price Index and to ensure that the principle of 'polluter pays' is preserved. At the same time, the ratio of accidental spills to tonne miles traded has dropped dramatically. The OPA 90 limits for shipping have therefore proved to be both realistic and adequate. They are substantially higher than the limits of liability under the International Civil Liability Convention regime which applies in most of the world.

In addition, OPA 90 contains strict provisions whereby the right to limitation can be easily lost. This can happen if the incident was caused by gross negligence or wilful misconduct, or if any applicable Federal safety, construction or operating regulation is violated. The right to limit will also be lost through a failure or refusal to report the incident, to provide all reasonable co-operation and assistance requested by a responsible official in connection with removal activities, or to comply with an order under certain sections of other Acts. This structure has incentivised owners trading to the US to behave both safely and responsibly.

3. skilled response to tanker spills

OPA 90 requires the owners or operators of vessels to take a proactive response to any spill. They must have in place a tested program to be able to responding to a worst case discharge of oil, whether actual or threatened.

An integral part of the response program is the Vessel Response Plan (VRP). This must be consistent with the requirements of the National Contingency Plan and Area Plans and approved by the US Coastguard, both initially and following any significant change. These plans must ensure the availability of equipment and personnel to respond to the anticipated 'worst case' scenario, and provide for periodic training and equipment testing as well as unannounced drills. The plan also identifies oil spill response organizations (OSROs) with whom the owners have service agreements ready to handle a clean-up operation in the event of a spill.

For each tank ship carrying oil either as cargo or as fuel, the 'worst case' scenario can be estimated. Unlike oil spilling from a drilling operation, the quantities of pollutant from a ship are finite and measurable, whether the oil emanates for example from a ruptured tank, or from a total loss of the tank ship. Any response plan can therefore be highly focused, practised and operated by experienced individuals and companies with whom the owners have pre-contracted. Their specialised equipment is geared to clean-up on or just below the surface where the ship may discharge oil and their operations well rehearsed.

4. preservation of the 'polluter pays' principle

The current proposals to remove the right to limitation would cut across the 'polluter pays' principle which is the bedrock of OPA 90 and other regimes.

The significant adjustments made to OPA 90 limits were made to preserve the careful balance between the shipowner and the oil receiving companies in the event of a spill. Without limitation, the full burden of compensation would fall upon the shipowner, with no necessity for a contribution from the oil receiving companies. The OSLTF would become obsolete. That simply cannot be the intention of any amendment if liability is to continue to be shared in accordance with this longstanding principle embedded in the OPA 90 regime.

5. preservation of the ability of vessels to insure pollution liabilities

The system of mutual insurance operated via the pooling arrangement of the International Group of P & I Clubs, offers the widest range of coverage for marine liabilities. The Group Clubs insure 95 % of all tank ships. All Members of INTERTANKO are insured for third party liabilities by a Group Club. Club cover includes pollution liability but this is capped at USD 1 billion. In order to achieve this level of cover, pollution risks are pooled by the Clubs up to USD 50 million. The balance up to USD 1 billion for pollution risk is re-insured under what is the largest single marine insurance contract in the world. The system also relies on a small number of providers of Certificates of Financial Responsibility (COFRs) as required by OPA 90 to enable owners to demonstrate their capacity to pay pollution claims. The COFR providers in turn rely on the availability of market reinsurance, which could be over USD 500 million for some of the largest tank ships.

At a commercial level it is obvious that if the potential exposure for oil pollution compensation is unclear, then if insurance is even available, the costs will be higher, and these costs will be passed on ultimately to the consumer. The USD 1 bn currently available is adequate to cover OPA 90 limits. If the right to limit is removed altogether, we believe that no insurer would be prepared to underwrite unlimited liability for pollution risks. In a normal case, the ship owner will respond to the spill and will call upon his insurers to fund such response (up to the OPA 90 limit after which the OSLTF would respond). Claimants receive compensation with minimal delay and without recourse to litigation, even in situations where the owner is not at fault or when he is unable to meet his own liabilities. Without the benefit of limitation of liability, the P & I/COFR structure would fall away as the risk of pollution would be uninsurable to the detriment of both claimants and to any clean-up operation.

6. continuance of oil imports to the United States

In 2009 oil tankers delivered almost 60% of the United States' liquid fuels/oil consumption of 18.8 million barrels per day. Oil tankers were also responsible for some 1.7 million barrels per day of the transportation of the US' exports of refined oil products. The bulk of these shipments were provided by independent, internationally operated tank ship owners who have a highly commendable safety record, including an exceptionally low spill record over the last decade.

The economic and strategic importance of ensuring the continuing availability of safe and reliable marine transportation of crude oil and petroleum products to and from the United States is therefore widely recognized. This would, however, be seriously jeopardized by further increases in limits or the removal of the right to limit liability for pollution. These owners may not be willing to risk their whole operation and asset base in order to trade in waters where OPA 90 applies. It must be appreciated that the asset base of tanker owners is very different from those involved in offshore drilling and exploration. They have nothing like the capital resources of a multi-national oil major. The capital market values of our top three largest Members quoted on NASDAQ /NYSE are a very small percentage of the capital market value of any large international oil company. Most of our Members are much smaller national based entities with relatively small profit margins. Without the certainty of statutory limits and availability of commercial insurance, only the very largest, self-insuring, tanker operators would be able to risk exposure to the OPA 90 regime and it is likely that the risk would significantly outweigh the benefits. This would lead to far fewer ships trading to the US, a shortage of imports and higher prices for consumers.

I hope these comments are helpful to your Committee's deliberations. Thank you again for the opportunity to participate in this hearing.

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U.S. TRAVEL
ASSOCIATION

Statement for the Record of the

U.S. TRAVEL ASSOCIATION

For the Committee on Transportation and Infrastructure

Hearing on:

"Deepwater Horizon: Oil Spill Prevention and Response Measures, and Natural Resource Impacts."

May 19, 2010

U.S. Travel Association

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The U.S. Travel Association thanks Chairman James L. Oberstar, Ranking Member John L. Mica, and all the Members of the Committee on Transportation and Infrastructure for holding this important hearing. The U.S. Travel Association welcomes the opportunity to submit its views to the Members of the Committee on the response efforts to the Gulf Coast oil spill, and how state, local, and federal entities – in coordination with private business – can better respond in the future to similar emergencies.

The U.S. Travel Association is the national, non-profit organization representing all components of the $704 billion travel industry. We represent over 2000 members ranging from travel service providers, airlines and travel associations, to hotels and destinations. Our mission is to promote travel to and within the United States. Travel annually generates $1.7 trillion in economic activity and sustains 7.7 million direct travel generated jobs in the United States. In addition to those directly employed by the industry, millions of Americans are indirectly employed as a result of the business generated by travel, including caterers, audio/visual companies and retailers. In 2009, travel spending by U.S. and international visitors resulted in more than $111 billion in tax revenue for federal, state and local government.

Because of the direct link between the vitality of the travel industry and the overall strength of the economy, any disruption or impediment to travel in the United States can have broad and far reaching consequences. In order for travel to thrive – and by extension the economy – many destinations rely on a clean, sustainable, and growing natural environment.

From pristine beaches to expansive national parks, the natural environment attracts tourists, generates business, and contributes to the livelihood of millions of Americans. But man-made environmental catastrophes such as the Deepwater Horizon oil spill threaten to damage or permanently destroy these sanctuaries and, in the process, cause significant economic harm. Unfortunately, examples of this strict cause and effect relationship – between the environment, travel, and the economy – can be seen throughout recent history.

One such tragedy, that bears a striking resemblance to the current situation in the Gulf of Mexico, is the 1989 Exxon Valdez Oil Spill that dumped over 10 million gallons of oil into the Prince William Sound. In 1990, a study examining the impacts of the Exxon Valdez Oil Spill on Alaska's tourism industry found that 43 percent of businesses in the spill-affected areas felt that their business had been "significantly or completely" affected by the oil spill and 59 percent reported spill-related cancellations. The same study found that visitor spending in the summer following the oil spill dropped by 35 percent in the most spill-affected regions and lost $19 million in direct visitor spending statewide.

While the full impacts of the recent oil spill in the Gulf of Mexico are still unclear, it remains certain that the travel industry in the Gulf Coast states of Louisiana, Mississippi, Alabama, and Florida could suffer sharp declines if adequate steps are not taken to stop the spread of oil to the coastline, mitigate the environmental damage already caused by the spill, and accurately communicate the full extent of the damage to the general public. Furthermore, immediate marketing efforts are necessary to promote the Gulf Region to potential travelers. Any decline – no matter how small – in leisure or business travel in the Gulf Coast region would have significant economic impacts.

In 2008, travel expenditures in Louisiana, Mississippi, Alabama, and Florida accounted for $94 billion dollars in direct spending. In the same year, travel expenditures generated $13.6 billion in tax receipts, $24 billion in payroll, and sustained 1 million travel-related jobs. Using the 2008 data as a baseline, even a 1 percent drop in travel to the Gulf Coast region as a result of the recent oil spill could lead to the loss of $942 million in travel expenditures, $136 million in tax receipts, $241 million in payroll, and the loss of 10,280 jobs.

It is important to note that at present, the Gulf Coast tourism industry largely reports that their destinations and coastal attractions remain unharmed and open for business. Yet, evidence of travel cancellations to the Gulf Coast region has begun to surface. For example, the Florida Restaurant and Lodging Association estimates that occupancy rates along the Florida Panhandle beaches, between Pensacola and Panama City, are already down by 30 percent from 2009.

As was the case in the 2009 outbreak of the H1N1 flu virus and the 2005-2006 outbreak of the avian flu virus, travel to and within the United States suffered sharp declines because of an over-reporting in the news media of the threats posed by a "worst-case scenario" outbreak of the viruses – rather than accurate reporting of the limited danger posed by the outbreaks at that time. It is essential for the national and international news media to maintain an objective and reliable voice throughout any disaster and refrain from promoting unwarranted fear in the general public, which only serves to amplify the severity of a disaster.

Federal, state, and local policy makers should also consider how their actions and words impact travelers during emergency relief and disaster response efforts. For example, state of emergency declarations are often not the result of an assessment of danger posed to the public, but rather a procedural step enabling state and federal resources to be used accessed for disaster relief. Such declarations – when separate from an assessment of danger – can cause unjustifiable fear in the general public and result in an unnecessary slow-down of travel and economic activity.

Lastly, as the situation in the Gulf of Mexico continues to unfold, the U.S. Travel Association urges the responsible parties and Congress to consider the full economic impacts of the oil spill on the travel economies of the Gulf Coast when compensating for damages, and providing disaster relief. We also encourage the responsible parties, Congress, and the administration to ensure that losses incurred by affected destinations due to a decline in traveler visitation are accounted for in disaster relief assistance and payment of damages. Compensation funds will be badly needed in marketing efforts to attract travelers back to a region after a spill-affected property or natural resource has been restored.

To that end, the U.S. Travel Association applauds BP's recent announcement that it will provide $70 million in marketing assistance to the Gulf Coast states of Louisiana, Mississippi, Alabama, and Florida. This grant is an important first-step in ensuring that people from around the globe continue to travel to the beaches and coastal destinations of the gulf. However, our applause for this grant is tempered by the stark realization that the full economic impacts of the oil spill remain unknown. The U.S. Travel Association strongly urges the responsible parties and the federal government to provide the necessary economic assistance in direct proportion to the short and long term impacts of the oil spill.

If the responsible parties, Congress, and the federal government fail to mitigate or appropriately respond to the negative impacts of the oil spill on the travel industry, the country risks further job loss, financial hardships, and prolonged economic stagnation during an already troubling time.

We thank the Committee for holding this hearing and giving us the opportunity to comment. Additionally, we look forward to working with you on these and other important issues in the future.

An Open Letter to President Obama

A Call for Leadership on Clean Energy and Climate

May 18, 2010

Dear Mr. President,

Over the past year, you've been a leader in trying to create a balanced and broadly supported energy policy that prioritizes clean energy. In light of the massive and ongoing environmental disaster in the Gulf of Mexico, we applaud your decision to put expanded offshore oil drilling on hold.

The images of oil burning off the Louisiana coast are rightfully disturbing to Americans in the same way images of the Cuyahoga River ablaze more than 40 years ago. Facing what could become the greatest environmental disaster in our history, the American people are increasingly angry about the real costs of dirty and dangerous fossil fuels to the environment and the economy, not to mention the real costs in terms of lives lost.

This deadly disaster reminds us of the danger of our existing dependence on fossil fuels, and that the need for safer and cleaner energy alternatives has never been more clear or urgent. Add to that the risks to our soldiers and broader national security because of our dependence on oil and the time for a transition to a clean energy economy is now. America's continued dependence on dirty sources of energy represents a failure of political leadership over the last 30 years. Without leadership, the current debate in Congress over our energy future will represent another failed chapter to make the fundamental changes America needs.

Mr. President, you were elected, in part, based on a promise to everyday Americans that you would bring change to our energy future; a transition to a new clean energy economy that creates jobs, reduces our dependence on oil and makes our nation more secure by cutting greenhouse gas pollution. While in office you have taken many important steps to act on your vision of creating a clean energy economy including the enactment of stronger fuel efficiency standards; passing major new investments in clean energy; and directing the Environmental Protection Agency to tackle the threat of climate change.

But those steps alone will not be sufficient to realize the transformative change we all seek. Making good on your promise will require that you put the full weight of your office behind an urgent campaign to move America beyond dirty energy and to usher in a clean energy economy, while holding polluters accountable for the costs of their pollution.

So, Mr. President, we ask you to urgently convene all stakeholders and lead the effort to craft a comprehensive clean energy and climate policy that will be enacted this year and will move America toward energy independence built on clean American power.

Sincerely,

More Than 1100 Obama Letter Signers

Alabama
Conservation Alabama, (AL)

Alaska
Alaska Chapter Sierra Club, (AK)
Alaska Interfaith Power and Light, (AK)
Alaska Youth for Environmental Action, (AK)
Chuitna Citizens Coalition, Inc., (AK)
Cook Inlet Keeper, (AK)
Copper Country Alliance, (AK)
Homer Electric Association Members Forum, (AK)
Mako's Water Taxi, (AK)
MEA Ratepayers Alliance, (AK)
Repower Alaska, (AK)
Republicans for Environmental Protection- Alaska, (AK)
Sierra Club Alaska, (AK)
Sitka Global Warming Group, (AK)
Sitka Local Foods Network, (AK)
Sunny Cove Sea Kayaking, (AK)
The Physical Therapy Place, LLC, (AK)
Turtle Island Records, (AK)
Anna Davidson, Yupik Environmentalist, (AK)
Heather Kendall-Miller, Attorney, (AK)
Kate Troll, Author, Environmentalist, (AK)
Rep Beth Kerttula, House Minority Leader, (AK)

Arizona
Environment Arizona, (AZ)
Sierra Club - Grand Canyon Chapter, (AZ)
Chad Campbell, State Representative, (AZ)
Daniel R. Patterson, State Representative, District 29, (AZ)
Eddie Ableser, State Representative, (AZ)
Edward Ableser, State Representative, (AZ)
Matt Heinz, State Representative, District 29, (AZ)

Arkansas
Advanced Custom Design, (AR)
Applied Technology Group, (AR)
Arkansas Wildlife Federation, (AR)
Audubon Arkansas, (AR)
Cadtechs, (AR)
Climate Change Task Force, (AR)
Conway Chiropractic & Wellness Center, (AR)
Earth Cause Organization, (AR)
OMNI Center for Peace Justice and Ecology, (AR)
Ozark Headwaters Sierra Club, (AR)
Repower Arkansas, (AR)
Sierra Club, Arkansas Chapter, (AR)
Stroud Consulting, (AR)
Winds of Change, (AR)
Ellen McNulty, Green Team S Central Jurisdiction, United Methodist Women's Division
John Hardin, Community Pastor, Eikon Church, (AR)
Kathy Webb, State Representative, District 37, Arkansas House of Representatives, (AR)
Leo Hauser, (AR)
Scharmel Roussel, Ark. Interfaith Power & Light Steering Committee Member, (AR)
Yvonne Segal, Owner, Promolife, Inc , (AR)

California
4-rth, LP, (CA)
Bay Localize, (CA)
California Coastal Protection Network, (CA)
California Coastkeeper Alliance, (CA)
California Council of Land Trusts, (CA)
CALPIRG, (CA)
Campus Center for the Environment, (CA)
Coalition for Clean Air, (CA)
DeRemus Photography, (CA)
Environment California, (CA)
Gaia Development, (CA)
Local Clean Energy Alliance, (CA)
Pacific Environment, (CA)
Planning and Conservation League, (CA)
REAS, (CA)
Renewable Energy Consulting Services, Inc , (CA)
Sener Inc, (CA)
Seventh Generation Advisors, (CA)
Surfrider Foundation, (CA)
The Regeneration Project/Interfaith Power and Lighrt, (CA)
The Vote Solar Initiative, (CA)
Transition US, (CA)
Tres Amigos Verdes, (CA)
Fran Pavley, State Senator, California 23rd State Senate District, (CA)
Kathleen McNamara, Owner, Academy Avenue Films, (CA)
Maitreyi Siruguri, Cool Schools Coordinator, (CA)
Matthew Abely, University of Portland College Ecology Club, (CA)

Colorado
Advanced Energy Solutions, (CO)
Alpine Analytics, (CO)
Alpine Bank, (CO)
Audubon Colorado, (CO)
Baosol LLC Adaptive, (CO)
Center for Native Ecosystems, (CO)
Colorado 1Sky, (CO)
Colorado Cleantech Industry Association, (CO)
Colorado Conservation Voters, (CO)
Colorado Council of Trout Unlimited, (CO)
Colorado Interfaith Power and Light, (CO)
Colorado Solar Energy Industry Association, (CO)
Eco-Justice Ministries, (CO)
Environment Colorado, (CO)
High Country Citizens Alliance, (CO)
Insulated Component Structures-Rocky Mountain, INC., (CO)
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ProgressNow Colorado, (CO)
Rocky Mountain Chapter- Sierra Club, (CO)
Serious Materials, (CO)
Sierra Club-Rocky Mountain Chapter, (CO)
Sustainable Automation, Inc., (CO)
Sustinably Built, (CO)
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Dr. Charles Olmsted, former Professor at Northern Colorado University and former Board Member of NWF, (CO)
Edward Vigil, State Representative, House District 62, (CO)
Forrest Orswell, employee of CSU and the former Colorado staffer for the Theodore Roosevelt Conservation Partnership., (CO)
Jeremy Dubin, Owner, Healing Arts Family Physicians, (CO)
John Schuenemeyer, Ph.D, President, Southwest Statistical Consulting, LLC, (CO)
Linda Helm, Vice President, Fine Print Imaging ... Nurturing Art for Conservation, (CO)
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Rep. Randy Fischer, Colorado State Representative, (CO)
Sen. John P Morse, Colorado Senate Majority Leader, (CO)

Connecticut
Audubon Connecticut, (CT)
CONNPIRG, (CT)
Environment Connecticut, (CT)
Wesleyan Environmental Organizers Network, (CT)
Kelly Kennedy, Esq , Communications Direcotr, Connecticut League of Conservation Voters, (CT)

Delaware
Delaware Nature Society, (DE)

District of Columbia
350 org, (DC)
Americans for Informed Democracy, (DC)
Boyd Strategies, (DC)
Campus Progress, (DC)
Clean Water Action, (DC)
Climate Protection Action Fund, (DC)
Earth Aid, (DC)
ecoAmerica, (DC)
Environment America, (DC)
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Greater Washington Interfaith Power & Light, (DC)
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Union of Concerned Scientists, (DC)
Unitarian Universalist Association, (DC)
World Wildlife Fund, (DC)
Young Democrats of America, (DC)
Will Byrne, Executive Director, The DC Project, (DC)

Florida
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AC Graphics, (FL)
ACTgreen Partnership, Inc , (FL)
Adrian Brunori consulting LLC, (FL)
Alberto Cardona P E , P.A., (FL)
Alliance for a Livable Pinellas, (FL)
Alliance for Florida, (FL)
Arco Courier, (FL)
Better World Alternatives, (FL)
Celadon Solutions Inc, (FL)
Climate Change is Elementary, (FL)
CR Surf Travel Company, (FL)
Crackerman Crackers LLC, (Fl)
Creative Recycling, (FL)
Dharma Merchant Services, (FL)
Earthlinked Technologies, (FL)
Eco-Tech Construction, LLC, (FL)
Ecowise Solutions, (FL)
Environment Florida, (FL)
Environmental Affairst Group, (FL)
ESC LLC, (FL)
Florida Wildlife Federation, (FL)
Goldsborough Company Inc., (FL)
I D E A S. (Intellectual Decisions on Environmental Awareness Solutions), (FL)
Investors Capital Partners, (FL)
it Feels Good to be Green, (FL)
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Megazona LLC, (FL)
MityMo Design, LLC, (FL)
NovaCharge, (FL)
Origin Influence, (FL)
Pollock & Associates, (FL)
Pro-Earth Energy Solutions, (FL)
Remotely Connected, (FL)
Repower Florida, (FL)
Sierra Club Florida, (FL)
Smart Cool Tampa Bay, (FL)
Sojourner Truth Center, (FL)
Solar Evolution Engineering, (FL)
Solar Source, (FL)
St Petersburg Audubon Society, (FL)
Student Environmental Awareness Society, (FL)
Sustainable Earth Foundation, (FL)
Tampa Bay Outfitters, LLC, (FL)
The Engineering Connection, Inc , (FL)
The Environmental PR Group, (FL)
The Growing House, (FL)
UMA Solar, LLC, (FL)
United States EnviroFuels, LLC, (FL)
USF Anthropology Club, (FL)
VB Engineering Inc , (FL)
Veterans Energy Solutions. (FL)
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Wayne's Solar Inc , (FL)
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Wind Energy Consulting & Contracting Inc , (FL)
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Georgia
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Georgia Conservation Voters, (GA)
Southern Energy Network, (GA)
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College Ecology Club, (HI)
Conservation Council for Hawaii, (HI)
Hawaii Green IT, (HI)

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Phylis King, Idaho Representative, Idaho House of Representatives, (ID)

Illinois
AJC--American Jewish Committee, Chicago Regional Office, (IL)
Balanced Wind, LLC, (IL)
Environment Illinois, (IL)
Faith in Place/Illinois Interfaith Power & Light Campaign, (IL)
Midwest Sustainable Energy, (IL)
Protestants for the Common Good, (IL)
Respiratory Health Association of Metropolitan Chicago, (IL)
Two Green Giants, (IL)
Carlos Munoz, OCIO, (IL)
Karen May, State Representative, (IL)
William D Burns. 26th District State Representative, (IL)
William D Burns, State Representative, (IL)

Indiana
Benefits-Solutions, Inc , (IN)
Butler University Environmental Concerns Organization, (IN)
Center for Urban Ecology at Butler University, (IN)
Eco Source, Inc., (IN)
Galvin Strategies, (IN)
Green Way Supply, (IN)
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Repower Indiana, (IN)
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Mary Ann Sullivan, State Representative, (IN)
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Rose D. Lige, Chief Financial Officer, Wynter Power Services, LLC, (IN)

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Iowa Environmental Council, (IA)
Iowa Interfaith Power & Light, (IA)

Kansas
AeiCG, (KS)
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Kansas Wildlife Federation, (KS)

Kentucky
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Austyn Gaffney, Kentucky Student Environmental Coalition, (KY)
Lee A. Dew, PhD, Professor Emeritus of history, Kentucky Wesleyan College, (KY)
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Environment Maine, (ME)
Gulf of Maine Custom Homes, (ME)
Katahdin Energy Works, (ME)
Maine Audubon, (ME)
Maine Center for Economic Policy, (ME)
Maine Interfaith Power and Light, (ME)
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Medomak Valley High School, (ME)
National Resources Council of Maine, (ME)
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Craig Hickman, Organic Farmer, Man of the People, (ME)
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Diane Russell, State Representative, (ME)
Edward Gorham, Retired President ME AFL-CIO, (ME)
Gary McGrane, USW, (ME)
Herb Adams, State Representative, (ME)
John J Napolitano, Business Manager, United Association LU716, (ME)
Jon Hinck, Maine State Representative, (ME)
Linda Fairbrother, Member, USW#1188, (ME)
Melissa Walsh Innes, Maine State Representative, (ME)
Pam Person, Chair, Adult Education Committee, Unitarian-Universalist Church of Ellsworth, (ME)
Philip Polk, President, USW Local # 4-00027, (ME)
Priscilla J. Jenkins, Chair and Councilwoman, Winthrop Green Committee, (ME)
Ron Michaud, Mayor of Saco Maine, (ME)
Sam Spencer, Democratic National Committeeman for Maine, (ME)
Sean Flaherty, Maine State Representative District 127, (ME)
Sean Flaherty, State Representative, (ME)
Senator Lawrence Bliss, Maine State Senator, (ME)
Sharon Treat, State Representative, Maine Legislature, (ME)
Stacy Dostie, Representative, (ME)

Maryland
1Sky, (MD)
Advantage Diagnostics Home Energy Services, (MD)
Assateague Coastal Trust, (MD)
Audubon Maryland, (MD)
Brennan+Company Architects, (MD)
Chesapeake Physicians for Social Responsibility, (MD)
Energy Solutions Group, (MD)
Environment Maryland, (MD)
Environmental Task Force of Cedar Lane Unitarian Universalist Church, (MD)
Maryland League of Conservation Voters, (MD)
Maryland PIRG, (MD)
Maryland Student Climate Coalition, (MD)
MQT Editing and Writing, (MD)
One Less Car, (MD)
Progressive Cheverly, (MD)
Sierra Club, Maryland Chapter, (MD)
UMD for Clean Energy, (MD)
Ellen Vaughan, Program Director, Renewable Natural Resources Foundation, (MD)
James Hubbard, Maryland Delegate, (MD)
Kumar Barve, Delegate, (MD)
Sen. Paul Pinsky, District 22 Senator, (MD)

Massachusetts
Ceres, (MA)
Conservation Law Foundation, (MA)
Environment Massachusetts, (MA)
Global Warming Education Network, (MA)
K.M Ryan Plumbing Company, (MA)
M J Bradley & Associates, Inc , (MA)
Massachusetts League of Environmental Voters, (MA)
Repower Massachusetts, (MA)
Sierra Club, Massachusetts Chapter, (MA)

Rep Frank I. Smizik, State Representative-Chair House Commitee on Climate Change

Michigan
Al's Painting, Inc , (MI)
Bridges Training Communities, (MI)
Ecology Center, (MI)
Enenergy Efficiency/Environmental Health Services - Task Force, (MI)
Environment Michigan, (MI)
Great Lakes Environmental Law Center, (MI)
Heat Transfer International, (MI)
Interfaith Council for Peace and Justice, (MI)
Lake Effect Energy Corporation, (MI)
Mackinac Bands of Ojibwa and Odawa Indians, (MI)
Metro Worksite Services, Inc., (MI)
Michigan Businesses for Clean Energy, (MI)
Michigan Environmental Council, (MI)
Michigan Interfaith Power & Light, (MI)
Michigan League of Conservation Voters, (MI)
Renewable Services, LLC, (MI)
Repower Michigan, (MI)
Republicans for Environmental Protection, (MI)
Residential Electric, (MI)
Salon Re, (MI)
Shepherd Advisors, (MI)
Sierra Club Michigan Chapter, (MI)
Spartans Repowering America, (MI)
The Candy Trail, (MI)
Tip of the Mitt Watershed Council, (MI)
Voices for Earth Justice, (MI)
Christos Michalakis, UFCW Political Director, (MI)
Dave Coulter, Oakland County Commissioner, (MI)
David Woodward, Oakland County Commissioner, (MI)
Gloria Rivera, IHM, Coordinator, Great Lakes Bioneers Detroit, (MI)
Laren Corie, Natural Solar Building Designer, Thermal Attic, (MI)
Peter Cummings, President, Ceeflow, Inc , (MI)
Rebekah Warren, State Representative, (MI)
Ron Frederick, City Councilman, (MI)
Sam Simonetta, Owner, Lean Clean Energy Services, (MI)
Steve Bieda, Rep , (MI)
Susan M Page, President, Twin Lakes Association, (MI)
Suzanna Raker, Author, (MI)

Minnesota
1000 Friends of Minnesota, (MN)
CLEAN (Coalition of Legislators for Energy Action Now), (MN)
Environment Minnesota, (MN)
Fresh Energy, (MN)
Minnesota Public Interest Research Group, (MN)
Norwex Enviro Products, (MN)
Pinnacle Commercial & Development, (MN)
Sierra Club North Star Chapter, (MN)
Transit for Livable Communities, (MN)
Will Steger Foundation, (MN)
Windustry, (MN)
Zanby, Inc , (MN)
Charles A. Slocum, President, Williston Group, (MN)
Ellen Anderson, State Senator, (MN)
Kate Knuth, Minnesota State Representative, (MN)
R T Ryback, Mayor of Minneapolis, (MN)

Mississippi
Debora L. Mann, Assistant Professor of Biology and Director of Environmental Studies, Millsaps College, (MS)

Missouri
Clean Power Design, (MO)
Dynamic Earth Equipment Co., (MO)
Gladewinds, (MO)
Global Fayre, (MO)
Green Action, Washington University in St. Louis, (MO)
Human Rights Action Service, (MO)
John Bardgett & Associates, (MO)
KD Equities LLC, (MO)
Metropolitan Community Church of Greater St. Louis, (MO)
Microgrid Energy, (MO)
Missouri Chapter, Sierra Club, (MO)
Missouri Student Environmental Coalition, (MO)
Missouri Votes Conservation, (MO)
Missourians For a Balanced Energy Future, (MO)
PAR Development Association /Par Retail Services, (MO)

More Than 1100 Obama Letter Signers

Par Retail Services, (MO)
Pilgrim Congregagational Church UCC, (MO)
Repower Missouri, (MO)
Second Presbyterian Church, (MO)
Sierra Club, (MO)
Sisters of St. Joseph of Carondelet, (MO)
Surplus Exchange, (MO)
Sustained Energy Systems, (MO)
The Energy Savings Store, (MO)
Women's Voices Raised for Social Justice (Environment Focus Group), (MO)
Brian Wahby, MO At-large delegate to the DNC, (MO)
Byron DeLear, (MO)
Cindy Circo, Elected Official, (MO)
David Alexander, Ph.D., (MO)
Debbie Woehrman, Charmain of Missouri Votes Conservation, (MO)
Denis DeCou, Executive Director for Nat'l Conference for Community & Justice of Metropolitan St. Louis, (MO)
Elizabeth Souder, Lawyer, Husch Blackwell Sanders LLP, (MO)
Eric Hadley, Science Curriculum and Instructional Coordinator for Ferguson-Florissant School District, (MO)
Gerald Nickelson, President of IUE-CWA Local 86114, (MO)
Grant Weber, Owner, Westwind, (MO)
Harris H. Wilder, Attorney-at-Law, (MO)
Hedy Epstein, Holocaust Survivor/ Political Activist, (MO)
Jan Marcason, Elected Official, (MO)
Jeannette Mott Oxford, Elected Official, (MO)
Jo Ann Hughes, Co Chair of West County Democrats, (MO)
John O'Connor, Ph.D., (MO)
Jude Huntz, Human Rights Director of KC Catholic Diocese, (MO)
Mark Baker, Chair of Cape Girardeau County Democrats, (MO)
Richard Martin, Managing Director of Government Relations (Husch Blackwell Sanders LLP), (MO)
Richard R. Oswald, President of Missouri Farmers Union, (MO)
Stephen Gregali, Elected Official - 14th Ward, Elected Official, (MO)
Wayne Goode, Board Member, Missouri Votes Conservation, (MO)
Woody Overton, Principal, Overton Group, (MO)

Montana
AirWorks, Inc , (MT)
Alternative Energy Resources Organization (AERO), (MT)
American Wildlands, (MT)
Big Dipper Ice Cream, Helena, (MT)
Big Dipper Ice Cream, Missoula, (MT)
Browns Meadow Farm, (MT)
Caring for Creation Network, (MT)
Centennial Timber Frames, Inc , (MT)
Clark Fork Coalition, (MT)
Coney Island, (MT)
Detour Destinations, (MT)
Earth Care Missoula, (MT)
Eco Auto Inc, (MT)
Ecology Project International, (MT)
Energetechs, (MT)
Environment Montana, (MT)
Flathead Diversion Specialist, (MT)
FourOSix, (MT)
Gallik Law Office, PLLC, (MT)
gamePods, (MT)
Green Directory Montana, (MT)
High Plains Architects, (MT)
homeWORD, Inc., (MT)
International Brotherhood Of Electrical Workers 768, (MT)
Jeannette Rankin Peace Center, (MT)
kikaPaprika, (MT)
MAST - Missoula Advocates for Sustainable Transportation, (MT)
Mission Mountain Audubon, (MT)
Montana Audubon, (MT)
Montana Chapter of the Sierra Club, (MT)
Montana Conservation Voters Education Fund, (MT)
Montana Environmental Information Center, (MT)
Montana Harvest, (MT)
Montana Renewable Energy Association, (MT)
Montana Wind Resources, LLC, (MT)
MontPIRG, (MT)
NATURAL HOUSEBUILDERS and TERRY DAVENPORT DESIGN, INC , (MT)
Northern Plains Resource Council, (MT)
Open Road Bicycles, (MT)
Park Cafe and Grocery, (MT)
Phoenix Rising, Inc, (MT)
Pita Pit, (MT)
PowerHouse Integrated Conservation Systems, (MT)
Repower Montana, (MT)
Saunders Jewelry, (MT)
Solar Montana, (MT)
Solar Plexus LLC, (MT)
Sustainable Business Council, (MT)
Sustainable Obtainable Solutions, (MT)
Swift Building Lofts, (MT)
Teamsters Local #2, IBT, (MT)
The Painted Pot, (MT)
The University of Montana, (MT)
Turman Larison Contemporary, (MT)
University of Montana Climate Action Now (UM CAN), (MT)
University of Montana Forum for Living with Appropriate Technology, (MT)
Winpower West, (MT)
Allison DePuy, Owner, DePuy Building, (MT)
Amy M. Carter, Reverend, University Congregational, United Church of Christ, (MT)
Betsy Hands, Representative, (MT)
Bill Carey, County Commissioner, (MT)
Billie Shepard, Business Owner, Panhandler Plus Store, (MT)
Chuck Hunter, State Representative, (MT)
Cliff Larsen, State Senator, (MT)
Cory Cullen, Owner, New World Recycling, (MT)
Deborah Richie Oberbillig, Author, (MT)
Franke Wilmer, Representative, (MT)
Genevieve King, Director, Sustainable Business Council, (MT)
Jade Lancaster, Store Owner, One Love Baby Boutique, (MT)
James McCall, Owner and President, Rainbow Run Fly Shop, (MT)
Jan Peccia, Co-owner, The Montana Book Company, (MT)
Janet R. Allison, Ph D., Psychologist, (MT)
Jason Wiener, Alderman, Ward One, (MT)
John Calsbeek, Curator, Missoula Art Museum, (MT)
John Thompson, Carpenter and Home Inspector, (MT)
John Wood, Secretary, Open Road, (MT)
Jonathan Matthews, Executive Committee, Montana Chapter of the Sierra Club, (MT)
Katie Stanton, Marketing Director, Missoula Art Museum, (MT)
Lindsay Schack, Architect, (MT)
Margaret and David Scott, Trustees, Flathead Valley Community College, (MT)
Mary Jane Mcallister, Teacher, Lewis and Clark Elementary, (MT)
Matt Kuntz, Author and veteran, (MT)
Michele K Reinhart, State Representative, House District 97, (MT)
Mike Phillips, State Representative, Montana, (MT)
Pam Walzer, City Council Alderwoman, (MT)
Patrick Cassidy, Owner, On Broadway Restaurant, (MT)
Patrick Judge, Writer, (MT)
Richard Barrett, Professor of Economics at the University of Montana and Montana State House Representative, (MT)
Steve McArthur, MR , Witness and Justice committee, (MT)
Sue Malek, Representative, Montana State Legislature, (MT)
Teresa K. Henry, Representative, MT Legislature, (MT)
Thomas J. Trebon, President, Carroll College, (MT)
Vicky Bohlig, Owner GreenPath Properties, (MT)
Walter Redfield, (MT)
Wendy Weaver, (MT)

Nebraska
Bold Nebraska, (NE)
Nebraska Wildlife Federation, (NE)
Nebraskans for Peace, (NE)
Repower Nebraska, (NE)
Stephens Law Office, P C., (NE)
Heath Mello, State Senator, (NE)
Marian Langan, Director, Spring Creek Prairie Audubon Center, (NE)

Nevada
Alive Today Enterprises, (NV)
Ding Communications, Inc , (NV)
Energy Convergence of Nevada, (NV)
Environment Nevada, (NV)
Las Vegas Ballet School, (NV)
Nevada Conservation League, (NV)
Nevada Wildlife Federation, (NV)
Norma Mary's Cottage, (NV)
One55Water a City Cafe, (NV)
ProgressNow Nevada, (NV)
Sierra Club Southern Nevada Group, (NV)
Sierra Club, Toiyabe Chapter, (NV)
Toiyabe Chapter of the Sierra Club, (NV)

More Than 1100 Obama Letter Signers

New Hampshire
American Biomass Corporation, (NH)
Barker Architects, (NH)
BEAM Construction Associates Inc., (NH)
Cafe Indigo, (NH)
Consortium for Justice and Society at NH Institute of Politics, (NH)
Constantly Pizza, Inc, (NH)
Demers Properties, (NH)
Ecological Solutions, Inc, (NH)
Environment New Hampshire, (NH)
Fisherman's Finest, (NH)
Frase Electric LLC, (NH)
GONDWANA, LLC, (NH)
H A P P Y., (NH)
IBEW, (NH)
Image 4, (NH)
Lakes Region Living Lightly Association, (NH)
New England Nordic Ski Association, (NH)
New Hampshire Medical Society, (NH)
New Hampshire Sierra Club, (NH)
Project Laundry List, (NH)
Real Green Goods, (NH)
Repower New Hampshire, (NH)
S & W Sports, (NH)
Sustain Ability, (NH)
Temple Energy Committee, (NH)
True Brew Barista, (NH)
Turtleridge Farm, (NH)
Wagner Forest Management, (NH)
Your Home Your World, (NH)
Barbara Sullivan, (NH)
Barrett N. Rock, Professor of Natural Resources, (NH)
Betty Hall, Honorable, (NH)
Beverly Edwards, Member Temple Energy Committee, (NH)
Boyd Smith, (NH)
Brian Adams, Energy Auditor LEED, (NH)
Cheryl L. Schlenker, Realtor, Cheryl L Schlenker, (NH)
Clinton Jones, Organic Farmer, (NH)
Craig Lawson, Renewable Business Development Manager, (NH)
Don LaTourette, (NH)
Gary Hirshberg, CEO, Stonyfield Farm, (NH)
Howard Shaffer, 2001 Congressional Fellow, (NH)
Hunter Brownlie, (NH)
Jack Harrod, Chairman, Energy Committee, (NH)
Jane Doherty, Environmental Responsibility Committee, Episcopal Diocese of NH, (NH)
Janet Ward, Ms., (NH)
Jim Rubens, (NH)
Joe Howard, (NH)
John E Carroll, Professor, (NH)
Julia M. Di Stefano, Dr , Union of Concerned Scientists, (NH)
Laurel Redden, Administrator,NH Council of Churches, (NH)
Linda Johnson, Minister, (NH)
Margaret A Fogarty, (NH)
Margaret Gale, Librarian, (NH)
Mark R Windt, M D , Physician, (NH)
Maura Adams, Environmental Stewardship Manager St Paul's School, (NH)
Patricia Martin, Secretary, Rindge Energy Committee, (NH)
Paul A. Doscher, (NH)
Paul Stillwell, (NH)
Randy Bryan, (NH)
Richard L. Russman, Hon., (NH)
Rob Werner, Concord City Council, (NH)
Ronald G. Lawler, Professor of Chemistry, Brown University, (NH)
Seth Marshall, State Representative, (NH)
Stephen Lemaire, NH Community Tree Steward, Earth Team Volunteer, (NH)
Susan Thorne, Associate Architect, AIA LEED AT, (NH)
Suzanne Butcher, State Representative, (NH)
William J. Poleatewich Jr., CEO President, Dawn Solar Systems Inc , (NH)

New Jersey
AES (Accredited Energy Solutions), (NJ)
Association of New Jersey Environmental Commisions, (NJ)
Bovio Advanced Comfort & Energy Solutions, (NJ)
Business Partner Network, LLC , (NJ)
Ecological Systems, (NJ)
Environment New Jersey, (NJ)
Green Energy NJ, (NJ)
GreenFaith, (NJ)
Home Energy Matters, Inc., (NJ)
Home Energy Team, (NJ)
Innovative Engineering, Inc., (NJ)
Isles, Inc., (NJ)
Kent International, (NJ)
New Jersey Environmental Lobby, (NJ)
New Jersey Sierra Club, (NJ)
NJ US Green Building Council, (NJ)
NJ Vet Sales, (NJ)
Powell Energy and Solar, LLC, (NJ)
Quality Air Specialists, Inc., (NJ)
Ram Service Inc , (NJ)
RimLife Green Technologies LLC, (NJ)
Scout Inspection & Energy Audit LLC, (NJ)
SunPower Corporation, (NJ)
Sunshine Solar Systems, Inc., (NJ)
US Energy Renovations LLC, (NJ)
Work Environment Council, (NJ)
Zero to Sixty Communications, (NJ)
Dr Robert Laumbach, Professor, (NJ)
Gerald Anthony, Paramus Environmental Commissioner, (NJ)
James Avery, Professor, Dept. of Political Science, Richard Stockton College of New Jersey, (NJ)
Joan G Ehrenfeld, Professor, Department of Ecology, Evolution, and Natural Resources, SEBS, Rutgers University, (NJ)
Joan Quigley, Assemblywoman, (NJ)
Michael Kennish, Professor, Institute of Marine and Coastal Science, Rutgers University, (NJ)
Patrick Hossay, Professor, Dept. of Political Science &
Sustainability and Environmental Policy, Richard Stockton College of New Jersey, (NJ)
Scott Olson, Deputy Mayor, (NJ)

New Mexico
Audubon New Mexico, (NM)
Central New Mexico Audubon Society, (NM)
CleanSwitch, (NM)
Concept Green, LLC, (NM)
Conservation Voters New Mexico, (NM)
Environment New Mexico, (NM)
Full Circle Health Center, (NM)
League of Women Voters of New Mexico, (NM)
Local Vicar, Felician Sisters, (NM)
New Energy Economy, (NM)
New Mexico Conference of Churches, (NM)
New Mexico Interfaith Power and Light, (NM)
New Mexico Physicians for Social Responsibility, (NM)
New Mexico Wildlife Federation, (NM)
NM Students PIRG, (NM)
Paradigm Development Partners, (NM)
Positive Energy, Inc , (NM)
Renewable Energy Industries Association, (NM)
Santa Fe Area Home Builders Association, (NM)
Santa Fe Green Building Council, (NM)
Catholic Deacon Leroy & Lucy Sanchez, Catholic Deacon, (NM)
Faren Dancer, Board of Directors, New Mexico Home Builders Association, (NM)
Fr. Larry Bernard, O F M., Pastor, St. Joseph Church, (NM)
Judith McCarthy, MoveOn org, (NM)
Kristina Turner, (NM)
Michael McCally, MD, Physicians for Social Responsibility, (NM)
Mimi Stewart, State Representative, NM House of Representatives, (NM)
Rev Palmer S Clark, Rev. United Methodist, Retired, (NM)
Robert A Mang, Vice Chair, New Voice of Business and Chair, New Mexico Chapter, New Voice of Business, (NM)
Robert M Bernstein, MD, (NM)
Sharon Thomas, Las Cruces City Counclor, District 6, Mayor Pro Tem, (NM)

New York
Brooklyn League of Young Voters Education Fund, (NY)
Columbia University Food Sustainability Project, (NY)
Environment New York, (NY)
Jewish Theological Seminary EcoReps, (NY)
Karbone, Inc., (NY)
NYPIRG, (NY)
Rain Mountain LLC, (NY)
Springwater Books, (NY)
Unitarian Universalist United Nations Office, (NY)
Brian Kavanagh, New York State Assemblymember, (NY)
Brienne Foley, Ms., (NY)
Colin Kinniburgh, (NY)

More Than 1100 Obama Letter Signers

North Carolina
Audubon North Carolina, (NC)
Blessed Earth Farm, (NC)
Blue Ridge Chapter, Trout Unlimited, (NC)
Busy Bee Cafe, (NC)
Carolina Solar Energy, (NC)
Clean Air Carolina, (NC)
Conservation Council of North Carolina, (NC)
Creative Enhancements, LLC, (NC)
Environment North Carolina, (NC)
Friends of Pocosin Lakes National Wildlife Refuge, (NC)
Greenbridge Developments, LLC, (NC)
Johnston County Wildlife Assoc., (NC)
Ladies In The Stream, (NC)
Land O'Sky Chapter of Trout Unlimited, (NC)
NC Camouflage Coalition, (NC)
NC Conservation Network, (NC)
NC Interfaith Power & Light, (NC)
NC Trout Unlimited State Councel, (NC)
NC Wildlife Federation, (NC)
New Planet Yoga, (NC)
North Carolina Justice Center, (NC)
North Carolina Sierra Club, (NC)
North Carolina Wildlife Federation, (NC)
Organization for Wildlife and Land Stewardship, (NC)
PenderWatch & Conservancy, (NC)
Southern Alliance for Clean Energy, (NC)
Sunset Wellness Therapeutic Massage & Bodywork, (NC)
Triangle Fly Fishers, (NC)
Western N. C. Physicians for Social Responsibility, (NC)
Wrightsville Beach Sea Turtle Project, (NC)
Carol Ann Tomko, Mecklenburg Audubon board member, (NC)
Dale E. Weston, Former Board Member, New River Foundation, (NC)
Dann Carnes, Owner, Fireplace Editions, (NC)
Debbie Osborne, Lake Norman Wildlife Conservationists, (NC)
Donna Surge, Director of Graduate Studies, Geological Sciences, University of North Carolina at Chapel Hill, (NC)
G. Richard Mode, President, Mode Rental Properties, (NC)
Gay Cheney, Emeritus Professor, UNCG, (NC)
Kim Leight, Vice President Capital Chapter, NC Wildlife Federation, (NC)
Myles Elledge, Senior Director, International Development, Research Triangle Institute
Pricey Harrison, Representative, NC House of Representatives, (NC)
Robert Smith, Consultant, Sun Power Systems, (NC)
Shea Tuberty, Associate Professor of Biology, Appalachian State University, (NC)
William "Bo" Cash, Owner, Table Rock Angler Fly Shop, (NC)

North Dakota
Comeau Electric, Inc, (ND)
Home Energy Science, (ND)
Repower North Dakota, (ND)
Al Larsien, Owner of Scan Design, (ND)
Betsy Perkins, (ND)
David C Thompson, Attorney At Law, (ND)
Dexter Perkins, Professor of Geology, University or North Dakota, (ND)
Edmund Gruchalla, Representative, (ND)
Greg Anderson, Pastor at University Lutheran Center, (ND)
JoNell Bakke, Senator, (ND)
Larry Herslip, Fmr. Representative, (ND)
Lonny Winrich, Representative, (ND)
Mary Larsien-Cantrell, Owner of Scan Design, (ND)
Mitch Vance, *2008 Democratic-NPL Nominee* for North Dakota State Treasurer, *(ND)*
Thomas Potter, (ND)
Tim Mathern, Senator, (ND)
Tom Fiebiger, Senator, (ND)
Tom Magin, Fmr. Vice President of The North Dakota AFL-CIO, (ND)

Ohio
Abrahim Kilani, Florist, (OH)
Audubon Ohio, (OH)
Blue Chip Solar and Wind, (OH)
Canton Audubon Society, (OH)
Cardinal Fastener & Specialty Co., Inc , (OH)
Clean Wave Ventures, (OH)
Climate Change Advocates of Cincinnati, (OH)
Decker Homes, Inc, (OH)
Dovetail Solar and Wind, (OH)
Earth Day Coalition, (OH)
Ecohouse, (OH)
Energy Optimizers, USA, (OH)
Environment Ohio, (OH)
Environmental Health Watch, (OH)
Enviroscapes Landscape Design, (OH)
Extreme Solar and Alternative Energy Solutions, (OH)
Go Sustainable Energy, LLC, (OH)
Greene Environmental Coalition, (OH)
Greener Stock, (OH)
Greenovate, (OH)
Initiative Consulting, (OH)
Izaak Walton League of America, Ohio Division, (OH)
KES Electrical Systems, LLC, (OH)
Mahoning Valley Audubon Society, (OH)
Midwest Sustainable Solutions, (OH)
New Leaf Home Design, (OH)
Ohio Leadership Council, (OH)
Ohio League of Conservation Voters, (OH)
Repower Ohio, (OH)
Sierra Club Ohio Chapter, (OH)
Silvertip Productions, Ltd., (OH)
Star Sailor Energy, Inc., (OH)
The Nature Conservancy, (OH)
Third Sun Solar and Wind Power, (OH)
Watt Works Inc., (OH)
Beau Daane, Business Recycling Specialist, (OH)
Chris Fridel, Assistant Training Director, (OH)
Chris Ronayne, Cleveland Planning Director (2002-2004) and Chief Development Officer and Chief of Staff 2005, (OH)
Chuck Lohre, LEED AP, (OH)
David Kriska, (OH)
Janice M. Zorman, Facility Director - Nature Center at Shaker Lakes, (OH)
John McGovern, Clean Transportation Program Coordinator, (OH)
John R. O'Meara, Executive Director, Columbus Metro Parks, (OH)
Michael Foley, State Rep; 14th House District, Ohio House of Representatives, (OH)
Michael J Piepsny, Executive Director, (OH)
Michael J Skindell, State Rep, 13th House District, Ohio House of Representatives, (OH)
Michele Holler, Chamber Board Secretary, (OH)
Michelle Dillingham, Project Manager, (OH)
Nancy L Adams, Ph D , (OH)
Richard P Sowell, Chief Maintenance Crew Leader, City of Hamilton Water Plant, (OH)
Shawn Hesse, RA, LEED AP BD+C, (OH)
Sr Mary Schrader, (OH)
Tom Butch, Member, Columbiana County Federation of Conservation Clubs, (OH)

Oklahoma
Deep Fork Audubon Society, (OK)
Tulsa Audubon Society, (OK)
Georgia Irion, President, Oklahoma Organic Gardening Association, (OK)

Oregon
Association of Northwest Steelheaders, (OR)
Climate Justice League (University of Oregon), (OR)
College Ecology Club (University of Portland), (OR)
Environment Oregon, (OR)
Focus the Nation, (OR)
Oregon Citizens' Utility Board, (OR)
Oregon Environmental Council, (OR)
Oregon League of Conservation Voters, (OR)
University of Portland Student Led Unity Garden, (OR)
Alan Bates, State Senator (D-3), (OR)
Angus Duncan, President, Bonneville Environmental Foundation, (OR)
Ben Cannon, State Representative (46), (OR)
Bill Bradbury, Former Secretary of State, (OR)
Brad Witt, State Representative (D-31), (OR)
Brent Barton, State Representative (D-51), (OR)
Carolyn Tomei, State Representative (D-41), (OR)
Charlie Tomlinson, Mayor of Corvallis, (OR)
Chris Garrett, State Representative (D-38), (OR)
Diane Rosenbaum, State Senator (D-21), (OR)
Jackie Dingfelder, State Senator (D-23), (OR)
Jefferson Smith, State Representative (D-47), (OR)
John Kitzhaber, Former Governor, (OR)
Jules Kopel Bailey, State Representative (D-42), (OR)
Kitty Piercy, Mayor of Eugene, (OR)
Lori Hollingsworth, Mayor of Lincoln City, (OR)
Maye Thompson, Environmental Health Program Director, Oregon Physicians for Social Responsibility, (OR)
Michael Dembrow, State Representative (D-45), (OR)
Suzanne Bonamici, State Senator (D-17), (OR)

More Than 1100 Obama Letter Signers

Oregon & Washington
Cascade Climate Network, (OR & WA)

Pennsylvania
Aqua Cura, (PA)
Arrival Boardshops, (PA)
Box Heart Gallery, (PA)
Citizens for Pennsylvania's Future (PennFuture), (PA)
Conemaugh Valley Conservancy, (PA)
Conservation Consultants, Inc., (PA)
Delaware RiverKeeper Network, (PA)
Enginuity Energy LLC, (PA)
Envinity, Inc , (PA)
Fly Fishers Paradise, (PA)
Green Field Energy Solutions, (PA)
Group Against Smog and Pollution (GASP), (PA)
Heritage Innovations, (PA)
Izaak Walton League, Berks County Chapter, (PA)
Izaak Walton League, Brownsville Area Chapter, (PA)
Izaak Walton League, Fairmont Springs Chapter, (PA)
Izaak Walton League, Greater Pittsburgh Chapter, (PA)
Izaak Walton League, Harry Enstrom Chapter, (PA)
Izaak Walton League, John Harris Chapter, (PA)
Izaak Walton League, Lancaster Red Rose Chapter, (PA)
Izaak Walton League, Lebanon Chapter, (PA)
Izaak Walton League, Oil City Chapter, (PA)
Izaak Walton League, Pinchot Chapter, (PA)
Izaak Walton League, Red Lion Chapter, (PA)
Izaak Walton League, York County Chapter, (PA)
Jack Berger, (PA)
James Walsh, (PA)
League of Young Voters Education Fund, (PA)
Lebanon Valley Conservancy, Inc., (PA)
Mon Valley Unemployed Committee, (PA)
PA Division, Izaak Walton League, (PA)
PennEnvironment, (PA)
Pennsylvania Citizens Organizing for Change, (PA)
Philadelphia Physicians for Social Responsibility, (PA)
Pittsburgh Interfaith Impact Network (PIIN), (PA)
Pittsburgh-UNITED, (PA)
Project for Nuclear Awareness, (PA)
Repower Pennsylvania, (PA)
Sierra Club - Allegheny Group, (PA)
Sierra Club - Pennsylvania Chapter, (PA)
Sisters of St Francis of Philadelphia, (PA)
Steve Connolley Hometown Energy Systems, LLC, (PA)
Sustainable Futures Communications, (PA)
The Center for the Celebration of Creation, (PA)
Trout Unlimited, Iron Furnace Chapter, (PA)
United Food and Commercial Workers (UFCW) Local 23, (PA)
Upper Perkiomen Watershed Coalition, (PA)
Ashlyn A. Gomez, Owner, Inkwell Business Writing, (PA)
Charles Day, Advisory Board Member, Project for Nuclear Awareness, (PA)
Donald Hahn, State College Borough Councilmember, (PA)
Edward Brinton, Advisor, Project for Nuclear Awareness, (PA)
Eugene DePasquale, State Representative, (PA)
Geoffrey Volcovici, The Green Initiative At King's College, (PA)
Jayne Klenner-Moore, Ph D , Associate Professor of CIS, (PA)
Jerry S. Priscaro, Father, (PA)
Lindsay Baxter, Sustainability coordinator of Pittsburgh, (PA)
Monica Medina McCurdy, PA-C, Board Member, Physicians for Social Responsibility, Philadelphia, (PA)
Rebecca Abruzzese, King's College, (PA)
Walter Tsou, Board member, Philadelphia PSR, (PA)

Rhode Island
Clean Water Action- Rhode Island, (RI)
Environment Council of Rhode Island, (RI)
Environment Justice League of Rhode Island, (RI)
Environment Rhode Island, (RI)
Lily's Garden Herbals, LLC, (RI)
Newport Biodiesel, (RI)

South Carolina
Agri-Tech Producers, LLC, (SC)
Becky's Soap Shoppe, (SC)
Brighter Solutions, (SC)
Charleston Audubon, (SC)
Clemson University Beyond Carbon Campaign, (SC)
Clemson University Students for Environmental Action (SEA), (SC)
Conservation Voters of South Carolina, (SC)
EcoBilt Energy Systems, (SC)
Kitchen Table Climate Study Group, (SC)
Repower South Carolina, (SC)
Rucker Printing, (SC)
SC Solar Council, (SC)
SC Solar Energy Inc, (SC)
Solar Business Alliance, (SC)
South Carolina Chapter Sierra Club, (SC)
South Carolina Coastal Conservation Leauge, (SC)
South Carolina Nature-Based Tourism Association, (SC)
South Carolina Wildlife Federation, (SC)
Sustainable Architecture, LLC, (SC)
the Home Team Advantage, (SC)
Upstate Forever, (SC)
Wildlife Action, Inc., (SC)
Winthrop Student Environmental Action Coalition, (SC)
Winthrop University Student Environmental Action Coalition, (SC)
Yancey Environmental Solutions, LLC, (SC)
Austin Jenkins, Member of the SCWF board and the Executive Director of the Katawba Valley Land Trust, (SC)
Frank Powell, Professor, Furman University, (SC)
Jan Hammett, LWV Resourse Chair, (SC)
Joseph Berry, Working Families Party, (SC)

South Dakota
Dakota Plains Energy, (SD)
Monks House of Ale Repute, (SD)
Repower South Dakota, (SD)
Sanaa's 8th St. Gourmet, (SD)
Sioux River Bicycles & Fitness, (SD)
South Dakota Farmer's Union, (SD)
South Dakota Young Democrats, (SD)
University of South Dakota Veterans Club, (SD)
Abigail Rosenthal, Associate Professor, Augustana College, (SD)
Bill Thompson, South Dakota Representive, (SD)
Bill Walsh, Business Owner & 2008 DNC Delegate, Dakota Travel, (SD)
Catherine Ratliff, Chair, Fall River County Democratic Party, (SD)
Catherine Ratliff, JD, NCC, (SD)
Chuck Groth, Chair, Beadle County Democrats, (SD)
Cory Allen Heidelberger, Blogger and Professor at Dakota State University, (SD)
Darrell Solberg, South Dakota Legislator, (SD)
Dean Schrempp, State Representative, (SD)
Denns Eisnach, Former mayor of Pierre, former chairman of South Dakota Public Utilities Commission, (SD)
Frank Kloucek, Senator, South Dakota Senate, (SD)
Jerry Larson, (SD)
John Mcintyre, former State Senator, (SD)
Judy Olson Duhamel, Chair (Retired), South Dakota Democratic Party, (SD)
Ken Haukaas, Economic Development Officer, Rosebud Sioux Tribe Chairman's Office, (SD)
Lois Facer, Administrator, (SD)
Marc Feinstein, Representative, South Dakota House of Representatives, (SD)
Mark Puetz, Sales, Marketing, Development, Puetz Corporation, (SD)
Mary Jones, Dr , (SD)
Nyla Griffith, Owner TDG Communications, (SD)
Paul O Hauffe, Author, (SD)
Randy Stratton, Owner, The Stratton Group, (SD)
Rev. Jean Morrow, Senior Pastor, Spirit of Peace United Church of Christ, (SD)
Reynold Nesiba, Associate Professor of Economics, Augustana College, (SD)
Ritchie Nordstrom, Chief Steward, AFSCME, (SD)
Rod Gutzler, Former Pennington County States Attorney, (SD)
Steve Gratzfeld, Owner, Meadowsweet Market, (SD)
Sue Nipe, Minnehaha County Auditor Candidate, (SD)
Susy Blake, State legislator, (SD)
Tom Barnett, South Dakota Bar Association, (SD)
William G Koupal, Owner, Koupal Communications, (SD)

Tennessee
Do You Know Where Your Children Are? Productions, (TN)
Tennessee Conservation Voters, (TN)

Texas
Breathe Yoga Studio, (TX)
ChilTex Alternative Energy Sources,LLC, (TX)
Congregation Agudath Jacob, (TX)
Environment Texas, (TX)
Erik Fowler, Real Estate Brokerage & Consulting, (TX)
Texas Conservation Alliance, (TX)
Senator Rodney Ellis, Texas State Senator, (TX)

More Than 1100 Obama Letter Signers

Turkey
Mustafa Ogut, Foreign Economic Relations Board of Turkey, (Turkey)

Utah
Golden Rule Project, (UT)

Vermont
Audubon Vermont, (VT)
Oasis Bike Works Inc, (VT)
Vermont League of Conservation Voters, (VT)
Elissa Parent, Miss, (VT)
Kristen Carmichael-Bowers, (VT)

Virginia
Adroit Solutions, Inc , (VA)
Algal Farms Inc , (VA)
Blue ridge Eco Shop, (VA)
Bose Research & Development Inc, (VA)
Chocolate Cravings, (VA)
CommonWealth Solar, LLC, (VA)
Continuum Energy Solutions, (VA)
Crude Accountability, (VA)
Donahue Improvements, (VA)
Environment Virginia, (VA)
Epic Gardens, (VA)
Friends of Dyke Marsh, (VA)
GMU Environmental Action Group, (VA)
Icons Sports Lounge & Grille, (VA)
Latitude 38 LLC, (VA)
M Stonegate Inc , (VA)
Nana's Homemade, (VA)
Nate's Taco Truck, (VA)
Repower Virginia, (VA)
Sierra Club Blue Ridge Group, (VA)
Sierra Club Chesapeake Group, (VA)
Sierra Club Fall of the James Group, (VA)
Sierra Club Mount Vernon Group, (VA)
Sierra Club New River Group, (VA)
Sierra Club Piedmont Group, (VA)
Sierra Club Rappahannock Group, (VA)
Sierra Club Shenandoah Group, (VA)
Sierra Club Virginia Chapter, (VA)
Sierra Club York River Group, (VA)
Students For Environmental Action at Randolph Macon College, (VA)
Sunnovations Inc , (VA)
Terra-Scapes, (VA)
The Stella Group, Ltd , (VA)
Urban Concepts, (VA)
Virginia Climate Initiative, (VA)
Virginia Conservation Network, (VA)
Virginia Council Trout Unlimited, (VA)
Virginia Interfaith Power & Light, (VA)
Virginia League of Conservation Voters, (VA)
Virginia Organizing Project, (VA)
Virginia Solar Energy Assoc, (VA)
Vivian's Inc, (VA)
Voices of Vietnamese Americans, (VA)
Amy L French, (VA)
Angie De Soto, Sustainability Coordinator, Virginia Tech University, (VA)
Ben Slocum, Manager, (VA)
Cassa Von Kundra, Councilor, (VA)
Christy Bryan, Concerned Citizen, (VA)
Daryl Varr, Staff Sergeant- USMC, (VA)
David Kuebrich, (VA)
Del Betsy Carr, Delegate, (VA)
Del David Englin, Delegate, (VA)
Del Kaye Kory, Delegate, (VA)
Del. Patrick Hope, Delegate, (VA)
Del. Robert Brink, Delegate, (VA)
Del. Scott Surovell, Delegate, (VA)
George Benford, CEO Business, (VA)
Hannah Wiegard, Environmental Caucus Chair Virginia Young Democrats, (VA)
Ingrid Mendez, Consultant, (VA)
Jason Albert, Manager, (VA)
Jason Von Kundra, (VA)
Jay C Ford, (VA)
Jessica Palmer, Mrs , (VA)
Joe Baker, (VA)
Judy Hinch, Sierra club, (VA)
Katie Morrisette, (VA)
Kaye Kory, Delegate, (VA)
Kim Chiapetto, DPVA Steering Committee, (VA)
Lauren Edmonds, Co-Facilitator, (VA)
Leigh McCallister, Assistant Professor, (VA)
Lenna Storm, Sustainability Manager, (VA)
Maria Childress, President Lynchburg United Young Democrats, (VA)
Marian Stein Leddington, Chair, YD of America Women's Caucus, (VA)
Mary Margaret Whipple, Virginia State Senator, (VA)
Mary Picardi, Public Policy Chairman, Lynnhaven River Now, (VA)
Meghan Czaikoski, (VA)
Mitch King, CEO, Old Mill Power, (VA)
Nathan Lott, Director, Virginia Conservation Network, (VA)
R. Christian Jones, Professor, George Mason University, (VA)
Sen Patricia Ticer, Senator, (VA)
Tench Phillips, Mr., (VA)
Thomas Golden, Mr , (VA)
Urbie Nash, (VA)
Vinod Goel, Business Owner, (VA)

Washington
Blue Marble Energy, (WA)
Climate Solutions, (WA)
CoolMom, (WA)
Earth Ministry, (WA)
Environment Washington, (WA)
Fifty Plus One, (WA)
Goose Networks Inc, (WA)
Pyramid Communications, (WA)
StJohn Group, Inc , (WA)
Washington Conservation Voters, (WA)
Washington Wildlife Federation, (WA)
WashPIRG, (WA)
Cecily Kowitz, (WA)
David Bangs, (WA)
David Benson, Attorney, Stoel Rives LLP, (WA)
Kelli Brethour, (WA)
Rep Dave Upthegrove, Chair, House Ecology and Parks, (WA)
Rep Jamie Pedersen, (WA)
Rep. Marcie Maxwell, (WA)
Rep. Mary Lou Dickerson, (WA)
Rep Sherry Appleton, (WA)
Sen Jeanne Kohl-Welles, (WA)
Senator Karen Fraser, (WA)
Susan Drummond, Attorney, (WA)

West Virginia
Coal River Mountain Watch, (WV)
Repower West Virginia, (WV)
West Virginia Chapter, Sierra Club, (WV)

Wisconsin
1000 Friends of Wisconsin, (WI)
Madison Peak Oil Group, (WI)
Midwest Environmental Advocates, (WI)
Milwaukee Riverkeeper, (WI)
One Wisconsin Now, (WI)
RENEW Wisconsin, (WI)
Sierra Club - Great Waters Group, (WI)
Sierra Club - John Muir Chapter, (WI)
Wisconsin Environment, (WI)
Wisconsin Great Lakes Coalition, (WI)
Wisconsin Land and Water Conservation Association, (WI)
Wisconsin Student Public Interest Research Group, (WI)
Kelda Helen Roys, State Representative, (WI)
Spencer Black, State Representative, (WI)
Steve Hilgenberg, State Representative, (WI)

Wyoming
Wyoming Conservation Voters, (WY)

May 18, 2010

Obama and the Oil Spill

By THOMAS L. FRIEDMAN

President Obama's handling of the gulf oil spill has been disappointing.

I say that not because I endorse the dishonest conservative critique that the gulf oil spill is somehow Obama's Katrina and that he is displaying the same kind of incompetence that George W. Bush did after that hurricane. To the contrary, Obama's team has done a good job coordinating the cleanup so far. The president has been on top of it from the start.

No, the gulf oil spill is not Obama's Katrina. It's his 9/11 — and it is disappointing to see him making the same mistake George W. Bush made with his 9/11. Sept. 11, 2001, was one of those rare seismic events that create the possibility to energize the country to do something really important and lasting that is too hard to do in normal times.

President Bush's greatest failure was not Iraq, Afghanistan or Katrina. It was his failure of imagination after 9/11 to mobilize the country to get behind a really big initiative for nation-building in America. I suggested a $1-a-gallon "Patriot Tax" on gasoline that could have simultaneously reduced our deficit, funded basic science research, diminished our dependence on oil imported from the very countries whose citizens carried out 9/11, strengthened the dollar, stimulated energy efficiency and renewable power and slowed climate change. It was the Texas oilman's Nixon-to-China moment — and Bush blew it.

Had we done that on the morning of 9/12 — when gasoline averaged $1.66 a gallon — the majority of Americans would have signed on. They wanted to do something to strengthen the country they love. Instead, Bush told a few of us to go to war and the rest of us to go shopping. So today, gasoline costs twice as much at the pump, with most of that increase going to countries hostile to our values, while China is rapidly becoming the world's leader in wind, solar, electric cars and high-speed rail. Heck of a job.

Sadly, President Obama seems intent on squandering his environmental 9/11 with a Bush-level failure of imagination. So far, the Obama policy is: "Think small and carry a big stick." He is rightly hammering the oil company executives. But he is offering no big strategy to end our oil addiction. Senators John Kerry and Joe Lieberman have unveiled their new energy bill, which the president has endorsed but only in a very tepid way. Why tepid? Because Kerry-Lieberman embraces vitally important fees on carbon emissions that the White House is afraid will be exploited by Republicans in the midterm elections. The G.O.P., they fear, will scream carbon "tax" at every Democrat who would support this bill, and Obama, having already asked Democrats to make a hard vote on health care, feels he can't ask them for another.

I don't buy it. In the wake of this historic oil spill, the right policy — a bill to help end our addiction to oil — is also the right politics. The people are ahead of their politicians. So is the U.S. military. There are many conservatives who would embrace a carbon tax or gasoline tax if it was offset by a cut in payroll taxes or corporate taxes, so we could foster new jobs and clean air at the same time. If Republicans label Democrats "gas taxers" then Democrats should label them "Conservatives for OPEC" or "Friends of BP." Shill, baby, shill.

Why is Obama playing defense? Just how much oil has to spill into the gulf, how much wildlife has to die, how many radical mosques need to be built with our gasoline purchases to produce more Times Square bombers, before it becomes politically "safe" for the president to say he is going to end our oil addiction? Indeed, where is "The Obama End to Oil Addiction Act"? Why does everything have to emerge from the House and Senate? What does *he* want? What is *his* vision? What are *his* redlines? I don't know. But I do know that without a fixed, long-term price on carbon, none of the president's important investments in clean power research and development will ever scale.

Obama has assembled a great team that could help him make his case — John Holdren, science adviser; Carol Browner, energy adviser; Energy Secretary Steven Chu, a Nobel Prize winner; and Lisa Jackson, chief of the Environmental Protection Agency. But they have been badly underutilized by the White House. I know endangered species that are seen by the public more often than them.

Obama is not just our super-disaster-coordinator. "He is our leader," noted Tim Shriver, the chairman of Special Olympics. "And being a leader means telling the rest of us what's *our job*, what do *we* need to do to make this a transformative moment."

Please don't tell us that our role is just to hate BP or shop in Mississippi or wait for a commission to investigate. We know the problem, and Americans are ready to be enlisted for a solution. Of course we can't eliminate oil exploration or dependence overnight, but can we finally start? Mr. President, your advisers are wrong: Americans are craving your leadership on this issue. Are you going to channel their good will into something that strengthens our country — "The Obama End to Oil Addiction Act" — or are you going squander your 9/11, too?