

# The Oil Pollution Environmental Review Act of 2011 (OPERA)



 COLUMBIA | SIPA

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**MPA**  
IN ENVIRONMENTAL SCIENCE AND POLICY

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## List of Acronyms

**OPERA** – Oil Pollution Environmental Review Act

**BOEM** – Bureau of Ocean Energy Management

**BOEMRE** - Bureau of Ocean Energy Management, Regulation and Enforcement

**BSEE** – Bureau of Safety and Environmental Enforcement

**CEQ** – Council on Environmental Quality

**DOE** – Department of Energy

**DOI** – Department of the Interior

**EA** – Environmental Assessment

**EIS** – Environmental Impact Statement

**EPA** – Environmental Protection Agency

**HR 52** – House Resolution 52 (see also OPERA)

**MMS** – Minerals Management Service

**NEPA** – National Environmental Policy Act

**NOAA** – National Oceanic & Atmospheric Administration

**OCS** - Outer Continental Shelf

**OCSLA** – Outer Continental Shelf Lands Act

**OESC** - Ocean Energy Safety Advisory Committee

**ONRR** - Office of Natural Resources Revenue

## Executive Summary

In response to the *Deepwater Horizon* oil spill on April 20, 2010, Congressman Gerry Connolly introduced a bill to promote stricter regulation of offshore drilling activity. This bill, the Oil Pollution Environmental Review Act, sought to prevent such drilling accidents from occurring in the future. The Deepwater Horizon spill, with its serious social, environmental, and economic impacts, highlighted the risks of offshore drilling to the American public and the need for regulatory change. The Oil Pollution Environmental Review Act was just one of a host of response measures taken by the offshore drilling industry, Congress, federal agencies and the Obama Administration. It sought to enhance drilling regulation through the following measures: (1) by defining drilling as a major federal action under the Outer Continental Shelf Lands Act, and (2) by repealing the thirty day deadline for approval of geological exploration plans. This first measure implies that for all offshore drilling projects, companies would need to conduct a detailed environmental analysis including monitoring and accident mitigation measures.

Though the Oil Pollution and Environmental Review Act failed to pass through Congress, our team developed an implementation plan for this bill as part of an educational management exercise. Our program design includes measures to carry out the actions required under the bill, as well as measures to enhance the bill's general spill prevention objective. The elements of our program design are organized into three pillars based on the goal they contribute to: stringent assessment, coordination activities, and human capital investment. The program design includes a description of each pillar and the measures they include, as well as staffing considerations, budgetary estimates, and the calendar for the first year of implementation. Overall the program would serve to enact practical measures that alter the regulation of offshore drilling in the United States in a way that leads to better protection of our citizens and our natural environment.

## Introduction

The Oil Pollution Environmental Review Act (OPERA) calls for all new Outer Continental Shelf (OCS) exploration and development plans to be defined as major federal actions under the Outer Continental Shelf Lands Act (OCSLA), subject to detailed environmental analysis as required under the National Environmental Protection Act (NEPA). Companies pursuing offshore drilling projects are required to conduct an Environmental Impact Statement (EIS), including extensive data on how the proposed activities would be conducted and monitored, as well as preparation of accident mitigation measures. The bill would also repeal the current deadline, which requires the Secretary of the Interior to approve or reject geological and/or geophysical exploration plans in the OCS within thirty days of submission.

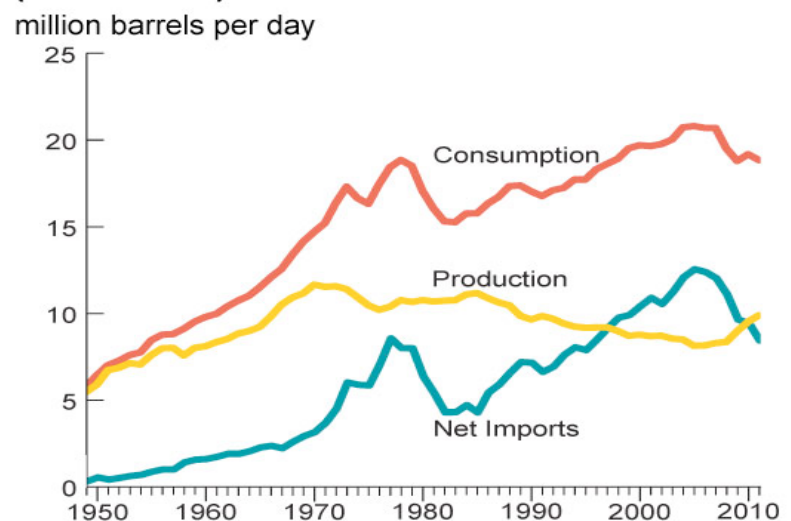
### Energy in the U.S.

The United States is very reliant on petroleum and natural gas, which account for roughly 36 percent and 25 percent respectively of total U.S. energy sources according to a 2011 estimate.<sup>1</sup> Offshore drilling activity in particular supplies about 24 percent of the United States' oil and 2 percent of its natural gas,<sup>2</sup> meaning that offshore oil accounts for about 8.64 percent of total U.S. energy, while offshore natural gas accounts for 6.25 percent of the national total.

As of 2011, about 45 percent of the oil consumed in the U.S. comes from other heavy oil producer countries, mainly Canada, Saudi Arabia, Venezuela, Nigeria and Mexico,<sup>3</sup> in order to meet its increasing demand for energy. U.S. oil production peaked in 1970, when the U.S. was still the world's biggest oil producer. Reliance on oil imports has since then grown tremendously up until 2005, when imports peaked, starting to reverse the trend.<sup>4</sup> (See *Figure 1*)

However, the embargo of 1973, and the resulting oil shortage, persists in the American ethos. Energy independence has thus become the promise of many American Presidents ever since. Though the fact that oil is sold as a commodity on the global market renders the term "energy independence" merely a campaign slogan, there has been real pressure to increase domestic oil production. The idea is that this will increase the United States' energy security in order to avoid being vulnerable to another shutoff anywhere in the world in the future.<sup>5</sup> Since 2008, there has been a boom in energy production in the U.S., and a 2012 report by the International Energy Agency indicates that the U.S. is well on track of becoming once again the world's biggest oil producer within five years and of becoming a net oil exporter by 2030.<sup>6</sup>

### U.S. Petroleum and Other Liquids, Consumption, Production, and Imports (1949-2011)



*Figure 1: United States Petroleum consumption, production and imports.*

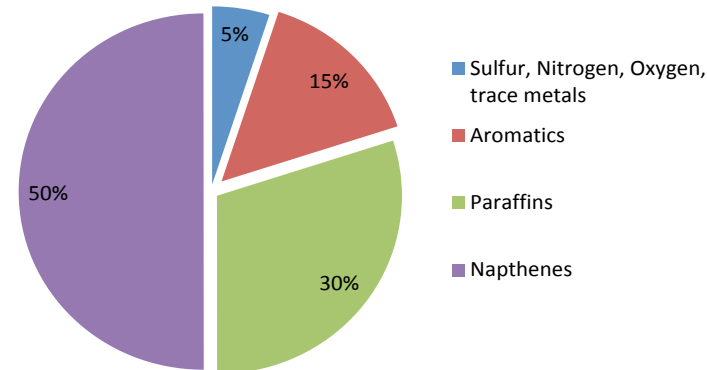


## Risks of Offshore Drilling

The increase in energy consumption in the U.S. and the goal of energy security are undeniable, and energy production industries are of great economic value to our country. In 2009, the federal government generated \$9.9 billion in revenue from oil, coal and natural gas activity<sup>a</sup>. Yet energy sources, including their direct and indirect consequences, should be examined cautiously. Offshore drilling poses many risks, and scientific studies have shown that even the small amounts of oil released from standard operating procedures can damage the environment. In the event of an accident, both the oil spill and the cleanup measures pose an environmental threat as well, with the degree of impact varying depending on the chemical composition of the oil itself, the depth of the spill, the fragility of local ecosystems, and local weather conditions.

### Oil Composition

Crude oil, or oil found in its natural state, has a complex chemical composition. It is comprised primarily of different hydrocarbons – aromatics, naphthenes and paraffins – and a small percentage is made up of trace metals and various other elements (e.g. Sulfur, Nitrogen, Oxygen). The percentage make-up of these components is important because certain types of aromatic hydrocarbons are particularly toxic.<sup>b</sup> On average, crude oil is comprised of 50% naphthenes, 30% paraffins, 15% aromatics and 5% trace elements, (see *Figure 2*) but these figures can vary depending on source location. Saudi Arabian oil, for instance, is typically 60% paraffins, while oil from Western Texas is usually about 22% aromatic.<sup>c</sup>



**Figure 2:** Chemical composition of crude oil on average.

Within the category of aromatic hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) pose a great threat in the event of an oil spill due to their toxicity and persistence in the environment. According to the Department of Health and Human Services (DHHS), some PAHs may reasonably be expected to be carcinogens.<sup>7</sup> In addition, their cyclical, alternating single-double bond molecular structure makes them particularly difficult to break down chemically (see *Figure 3*). As a result, this component of oil persists the longest in the marine environment after a spill, evaporating slowly over the course of weeks or months.<sup>8</sup> Depending on the chemical composition of the oil and the prevalence of durable chemical compounds, evaporation rates can vary from 10-75 percent of the spill's volume.<sup>d</sup>

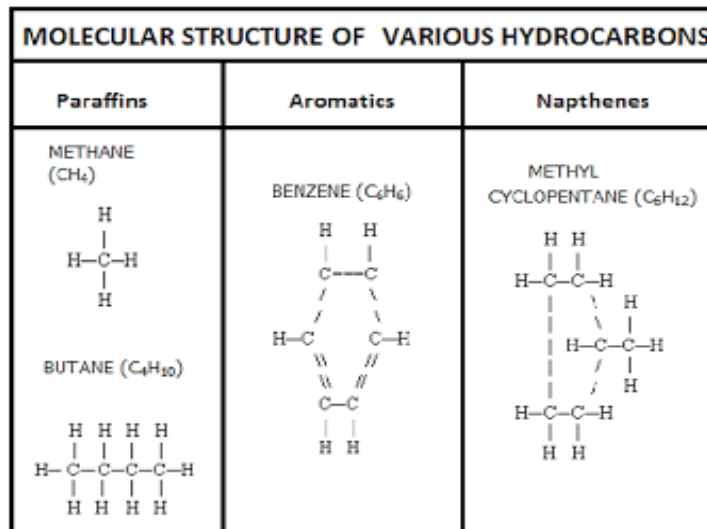
<sup>a</sup> Issa, Darrel. "Royalties for oil and other energy sources." *Politifact.com*.h 4 May 2010.

<sup>b</sup> Harbut, Michael and Kathleen Burns. "Gulf Oil Spill Health Hazards." *Sciencecorps*. Web. 4 Dec. 2012. <<http://tetradyn.com/bottomseal/chem-bio-med-health-docmts/crudeoilhazards.htm>>.

<sup>c</sup> "EPA Comments on Chemical RTK HPV Challenge Submission: Crude Oil Category." *U.S. Environmental Protection Agency*. 20 May 2004. Web. <<http://www.epa.gov/hpv/pubs/summaries/crdoilct/c14858ct.pdf>>.

<sup>d</sup> Fingas, Merv. "Evaporation of Oil Spills." *Environment Canada* 1.0 (1994) 189-212.





*Figure 3: Molecular structure of hydrocarbons.*

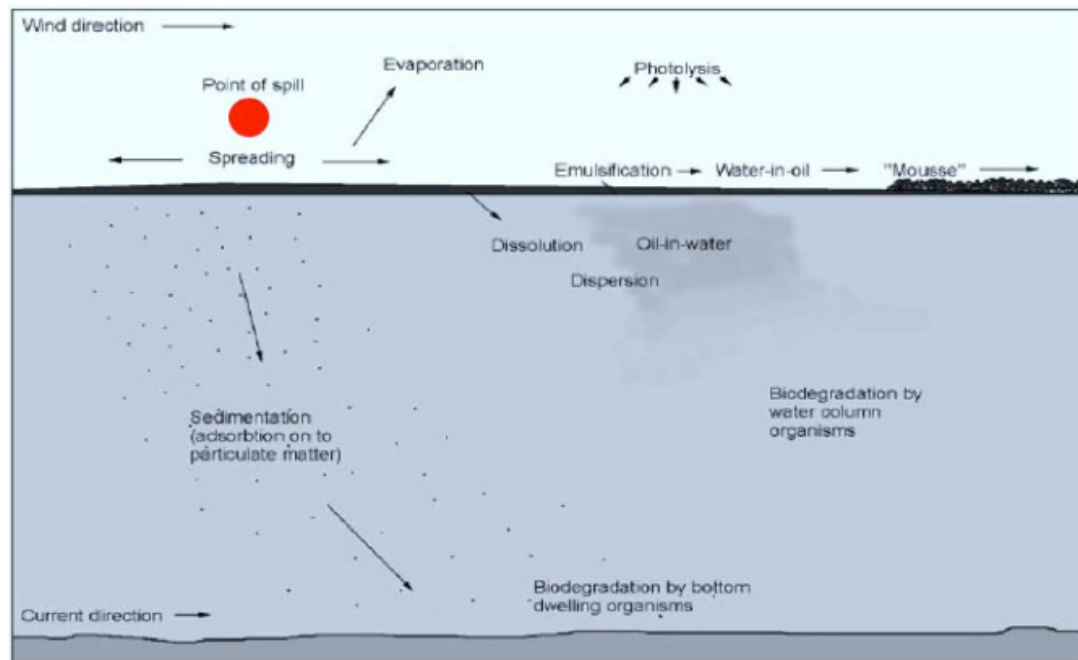
## Deepwater Drilling

The depth of the spill also affects its environmental impact. Research indicates that the deeper a spill, the more difficult it is to clean up, allowing it to persist in the environment longer.<sup>9</sup> In recent years, the depletion of oil at shallower depths has forced the oil industry to upgrade its methods in order to drill to greater depths. Deepwater drilling is defined as any drilling occurring at depths of more than 500 feet and by this classification, there are currently over 600 deepwater wells in the Gulf of Mexico.<sup>10</sup> Rising oil prices have enabled the industry to expand in this expensive endeavor, which was estimated in 2011 to have had a global expenditure of \$145 billion.<sup>11</sup> The depth of a spill directly depends on the drilling method in use. Certain drilling methods, like “jackups,” were designed to operate in relatively shallow water back when offshore drilling was new. Their depth-potential has increased with time to their current depth of 350-500 feet below the surface. This is still shallow compared to other types of drilling methods, like semisubmersibles, which typically operate at 10,000 feet below the surface, and the newest models operate up to 12,000 feet.<sup>12</sup> As the drilling methods grow more complex and depths increase, more advanced techniques are required to compensate for spill cleanup.

## Environmental Impact of Oil Spills

An oil spill’s impact also varies depending on the fragility of the ecosystems and species affected. Because ecosystems are variable and complicated, oil’s impact on these systems is similarly variable and difficult to anticipate.<sup>13</sup> There is some evidence that certain ecosystems are more vulnerable than others. For example, marshes appear to be the most highly affected and least capable of recovery,<sup>14</sup> whereas rocky shores have recovered rapidly.<sup>15</sup> Regardless of which type of ecosystem, there is immediate mortality of many organisms directly following an oil spill, with the strongest effects observed in the benthic and zooplankton communities.<sup>16</sup> Many organisms survive the initial contact with oil but suffer what is known as a sub-lethal effect<sup>17</sup> or have reductions in breeding capacity.<sup>18</sup> The sub-lethal effect means that their overall fitness is impacted, which may eventually lead to death. This effect typically occurs in fish larvae.<sup>19</sup> The most complex impacts occur at the ecosystem level. Animals can also ingest the oil, either accidentally or from their prey species.<sup>20</sup> The toxic compounds can then bioaccumulate, increasing the impacts on organisms higher in the food chain, including humans.<sup>21</sup> Local environmental conditions – temperature and weather at the time of the spill – help determine the

overall impact of an oil spill by affecting oil spreading and evaporation. Temperature plays a critical role in terms of oil spreading, with warmer waters increasing the breadth of offshore spills. Warm water lowers both surface tension and specific gravity, which is the ratio of oil to water density. This allows oil to float and spread more horizontally, as seen in *Figure 4*. At the same time, heat lowers oil's viscosity, making its consistency more fluid and enabling spreading. Weather also plays an important role in the effects of an oil spill. For example, the wind from storms breaks down the surface oil into smaller parts, which then get mixed into the water column.<sup>22</sup>



*Figure 4: Pathways by which oil may enter the marine ecosystem.*

## Spill Remediation

Depending on the persistence of the spill, remediation efforts may be necessary. There are three different types of remediation methods – physical, chemical, and thermal – which vary in terms of their environmental impact. Physical methods do not alter the chemical properties of oil, and therefore have a low impact on marine life. These methods include booms, which serve as barriers to contain oil, and skimmers, which collect oil from the surface. Chemical methods, which include the use of dispersants and solidifiers, alter the composition of oil. Dispersants do not remove oil, but break it down into smaller pieces that are dispersed into the water column to be degraded by the existing microorganisms.<sup>23</sup> Sometimes additional microorganisms are introduced to the site to accelerate the degradation process, a method known as bio-remediation.<sup>24</sup> While the impacts of dispersants on marine life are not entirely certain, there is evidence that they may lead to higher rates of bioaccumulation of oil components in fish.<sup>25</sup> Solidifiers change the physical state of oil from liquid to solid to make recovery easier. This method is used less frequently than dispersants, due to the economic costs of recovering solidified oil, which is removed manually, using shovels and pool nets, as well as the negative environmental impacts of sunken solidified oil on benthic communities.<sup>26</sup> Finally, thermal remediation is the use of burning to remove oil, and is effective when employed immediately after a spill occurs. Burning, however, can pose a health concern for humans at particulate exposure levels above 150  $\mu\text{g}/\text{m}^3$  within 24 hours.<sup>27</sup>

## BP *Deepwater Horizon* Spill

The Oil Pollution Environmental Review Act was proposed in response to the *Deepwater Horizon* spill in the Gulf of Mexico. On April 20, 2010 BP's *Deepwater Horizon* oil drilling rig, located 41 miles off the coast of Louisiana, exploded due to a methane gas leak deep underwater at the Macondo well. As a result of the accident, eleven workers were killed. The subsequent spill persisted for 86 days,<sup>28</sup> during which time an estimated 210 million gallons of oil were released into the gulf.<sup>29</sup> The *Deepwater Horizon* spill became the largest accidental offshore oil spill in recorded history, at a spill volume 1.5 times that of the next biggest spill.<sup>30</sup> The spill lasted for such a long time due to numerous technical failures and the lack of tested and quick capping technologies, which are used to cover a leaking well.<sup>31</sup> The direct cause of the spill was a combination of two mechanical failures. Initially a cement casing failure allowed seawater to enter the underwater well, which weakened the pressure of the drilling mud that prevents oil from rising.<sup>32</sup> Under normal circumstances, in the event of rising oil, the blowout preventer (a system of valves designed to cope with high pressure and used to control the flow of oil and gas) automatically cuts the well flow. In the case of *Deepwater Horizon*, this back-up mechanism also failed.<sup>33</sup> The only accepted and tested response at this point was to drill a relief well, a three month process. BP began drilling the relief well on May 2 and sent out a response crew to recover the oil as it spilled; however, the technology and manpower was outmatched by the size of the spill. BP spent the next several weeks attempting to stop the spill with such initiatives as a containment dome, a junk shot, and top kill. None were successful; meanwhile thousands of gallons of oil continued to spill into the Gulf each day. Finally, on July 15 the oil stopped flowing, though the well was still in a precarious condition and was constantly being monitored. With its widespread impact, the spill highlighted the dangers of offshore drilling, bringing the entire industry under public and governmental scrutiny.

The *Deepwater Horizon* spill significantly affected human health, the environment, and the local economy. Again, eleven workers died when the *Deepwater Horizon* rig collapsed and several others were injured.<sup>34</sup> This impact is in line with drilling's dangerous history; among the ten greatest oil spills between 1962 and 2008, over 770 drilling platform workers were killed.<sup>35</sup> Of more pervasive concern are the possible effects of oil – which contains toxic and carcinogenic chemicals – on cleanup crews and local residents, as well as its presence in seafood.<sup>36</sup> In the case of *Deepwater*, concern also arose over the potential impact of cleanup methods – in particular the use of chemical dispersants – on the local ecosystem.

Finally, the spill reminded Americans of the economic costs of drilling. During the spill, up to 40 percent of the Gulf was closed for fishing, resulting in serious losses for the fishing industry.<sup>37</sup> The economic impacts are still being felt today according to a study published this year, that estimates an \$8.7 billion economic loss for the Gulf economy from 2010-2017 as a result of *Deepwater Horizon*.<sup>38</sup> There were also economic costs for BP itself, which spent an estimated \$13 billion on cleanup,<sup>39</sup> plus another \$4.5 billion in fines so far. This does not include the fines under the Clean Water Act, which can potentially add as much as another \$21 billion to the total, nor the class action lawsuit involving tens of thousands of fishermen, coastal area residents, and small business that were harmed by the spill.<sup>40</sup> BP has already set up a \$20 billion compensation fund to pay the victims.<sup>41</sup>

In the immediate wake of the spill, the American public questioned why the standard regulatory actions failed to catch the mechanical failures and prevent the spill from happening in the first place. As time passed and the leak continued, the public also began to question why BP and the government were so

unprepared in terms of spill response for deepwater well drilling. In the weeks following the spill the Minerals Management Service (MMS), the agency responsible for OCS drilling regulation, announced that in April 2009, it had granted BP's lease at *Deepwater Horizon* a Categorical Exclusion, meaning its drilling activity was exempt from a detailed analysis of environmental impact.<sup>42</sup>



*Figure 5: A wave of crude oil from the Deepwater Horizon spill off the coast of Alabama.*

## What was the response to the *Deepwater Horizon* Spill?

The *Deepwater Horizon* incident illustrated the need for the U.S. government to improve offshore drilling regulation in order to protect its people and the environment. Immediately following the spill, U.S. Secretary of the Interior Ken Salazar imposed a six-month moratorium on all new deepwater offshore drilling operations on the Outer Continental Shelf<sup>43</sup> to allow for adequate assessment of damage and research on technological failures. President Obama then signed an executive order to establish the bipartisan presidential National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling,<sup>44</sup> which had the task to look into what went wrong, and to make recommendations on how to prevent and mitigate the impact of any future spills that result from offshore drilling.

The Commission's final report,<sup>45</sup> which was published and released in January 2011, determined that this spill was entirely preventable. It also describes the different roles the Administration, the drilling industry, and Congress each play in making offshore oil drilling safer and which actions they must take to achieve that goal. The conclusions were that without significant reforms in enhancing the safety standards the industry is being held accountable for and without stronger oversight and enforcement of offshore operations by the government, the public and the environment are at risk of another disaster like the Deepwater Horizon spill reoccurring in the future.

The Deepwater Horizon accident spurred changes by the Administration and the industry, both of which decided to implement some of the Oil Spill Commission's final report recommendations. Congress, meanwhile, has struggled to come to any agreement on how to further address the identified issues.



## Organizational Changes

On May 19th 2010, barely a month after the accident, Secretary of the Interior, Ken Salazar, signed an order to restructure the Minerals Management Service (MMS)<sup>46</sup> as it was found to have a few inherent conflicts of interest in its missions of promoting resource development, enforcing safety regulations, and maximizing revenues from offshore operations. As a replacement, three separate entities were created:

- *The Office of Natural Resources Revenue (ONRR)*

Responsible for royalty and revenue management, including the collection and distribution of revenue, auditing and compliance, and asset management

- *The Bureau of Ocean and Energy Management (BOEM)*

Responsible for reviewing data and laws, leasing areas of the Outer Continental Shelf, plan administration, environmental studies, NEPA analysis, resource evaluation, economic analysis and the renewable energy program, making sure to develop the nation's offshore resources in both an economically and an environmentally responsible way

- *The Bureau of Safety and Environmental Enforcement (BSEE)*

Responsible for ensuring comprehensive oversight, safety, and environmental protection in all offshore energy activities including Permitting and Research, Inspections, Offshore Regulatory Programs, Oil Spill Response, and newly formed Training and Environmental Compliance functions

(See Appendix A and B for the organization charts pre- and post-*Deepwater Horizon*.) This restructuring was done for the purpose of improving management, oversight, and accountability of activities on the OCS; ensuring a balanced and responsible production of energy resources on the OCS; providing safe and environmentally responsible exploration and production, and enforcement of applicable rules and regulations; and ensuring a fair return to the taxpayer from offshore royalty and revenue collection and disbursement activities.

## Administrative Measures and Programs

A few other measures and programs have also been implemented, or are about to be implemented by the Administration in the near future: tougher regulations to enhance worker and environmental safety on rigs, the Council on Environmental Quality's (CEQ) Categorical Exclusion guidance, the Ocean Energy Safety Advisory Committee (OESC), and an environmental baseline.

On October 12, 2010, the Obama Administration lifted the moratorium on deepwater drilling<sup>47</sup> but only after announcing the creation of a new "gold standard" of safety, spill response and blowout containment standards for operators and that offshore rigs would not resume drilling until these new federal requirements are met. Some of the new safety measures included the inspection of the blowout preventer by an independent third party, the filing of a report showing how operators would prevent or reduce a blowout at the wellhead, and the requirement to have all casing designs and cementing procedures certified by a professional engineer. With these new standards in place, it took another four months before the approval of the first deepwater drilling permit since the end of the moratorium.<sup>48</sup> In October 2010 also, the BOEM issued a Notice of Intent (NOI) to review Categorical Exclusions for projects in the OCS.<sup>49</sup> This was followed by a guidance issued by the CEQ on November 23, 2010, explaining the review process for Categorical Exclusions. The intent of these two measures was to hinder the granting of Categorical Exclusions for high-risk projects, as was the case with *Deepwater Horizon*. In

February 2011, the BSEE chartered the OESC<sup>50</sup> to advise the Secretary of the Interior on offshore drilling safety issues. The OESC was founded with the recognition that there needs to be better and more collaboration between the government, the industry and academia. The committee's members, all of which are appointed by the Secretary of the Interior, therefore come from a variety of stakeholder groups: the academic community, non-governmental organizations, the offshore oil and gas industry, and federal agencies. Finally, as part of the BOEM Budget Fiscal Year 2013,<sup>51</sup> an environmental baseline project is being planned with the intention of providing information by which clean up targets can be generated after an oil spill.

## Industry's Response

Following the release of the Commission's final report, the oil industry adopted one of its key recommendations, which was the creation of an independent safety institute. The American Petroleum Institute board endorsed the creation of a Center for Offshore Safety in the spring of 2011.<sup>52</sup> The goal of this center is to "promote the highest level of safety for offshore operations, through an effective program that addresses management practices, communication and teamwork, and which relies on independent, third-party auditing and verification."

## Congressional Response

Some of the strongest recommendations from the Commission were directed at the U.S. Congress, as only Congress has the authority to raise the liability cap for spills (currently at \$75 million), to provide adequate funding for regulatory agencies, or to amend the Outer Continental Shelf Lands Act (1953), which is the law governing all offshore oil and gas drilling projects. Congress usually responds to environmental disasters and more specifically to a large oil spill with a piece of legislation intended to prevent it from happening again. The Oil Pollution Act was passed unanimously by Congress in 1990 as a direct response to the Exxon-Valdez spill,<sup>53</sup> which was at the time the largest oil spill in U.S. history. Therefore, there was hope that a similar act would be possible after the *Deepwater Horizon* incident. In the months following the spill, congressional representatives introduced many bills on the topic of offshore oil drilling, including the Oil Pollution Environmental Review Act. In general, these bills sought to create legislation that would ensure safer drilling practices or hold drilling companies more responsible for offshore operations, but none of them were enacted. This time around, Republicans and Democrats in the House and the Senate could find no common ground, the main arguments at the time being that new laws could have unintended consequences for the industry's other ongoing projects<sup>54</sup> and that they could hurt smaller-scale energy companies.<sup>55</sup>

## Oil Pollution Environmental Review Act

One of the many bills introduced after the *Deepwater Horizon* spill was the Oil Pollution Environmental Review Act. Congressman Gerry Connolly (D-VA) first sponsored the bill, also known as H.R. 5506, on June 10, 2010, roughly seven weeks after the *Deepwater Horizon* spill. This was not unusual for Connolly, who had previously led in the House of Representatives as a trailblazer for environmental legislation, such as initializing the largest investment in clean energy in U.S. history.<sup>56</sup> He declared OPERA an effort to "mandate a full environmental review of every aspect of all offshore

drilling activity off the U.S. coast.”<sup>57</sup> The bill was referred to the Subcommittee on Energy and Mineral Resources but was not discussed on the legislative agenda. It was re-introduced by Congressman Connolly as H.R. 52 in January 2011 and was once again referred to the Subcommittee on Energy and Mineral Resources, where it remains awaiting consideration before possibly being sent to the House.

The bill consists of two primary provisions (*see Appendix C: OPERA Bill Text*). The first proposes to amend OCSLA, requiring any drilling activity in the OCS to be treated as a major federal action, significantly affecting the quality of human and natural environment.<sup>58</sup> This provision would categorize major federal actions under NEPA as the issuance of any exploration/surveying plans, development production plans, development operation coordination documents, and lease sales. This provision would therefore require a detailed environmental analysis of these proposed activities and of foreseeable subsequent actions. The first provision effectively removes the option of granting Categorical Exclusions to offshore drilling activities. Categorical Exclusions are intended to be awarded to development plans that do not significantly alter the natural landscape, such as hiking trails. This begs the question as to why *Deepwater Horizon's* Macondo well received such an exclusion. Upon the passage of OPERA, the option of awarding such exclusions to drilling projects would effectively be eliminated. The second provision repeals the 30-day deadline for the Secretary of the Interior to approve or reject these geological exploration plans. The overarching goal of OPERA was to increase regulation of drilling activities in order to better ensure safety for oceanic ecological systems as well as coastal residents.

### Why did OPERA fail to pass?

Given the political uproar against lax drilling regulations following the *Deepwater Horizon* rig explosion and subsequent oil spill, lawmakers in Congress sought to create legislation that would ensure safer drilling practices and hold drilling companies responsible for offshore operations. Prior to the catastrophe, however, the Obama Administration had indicated its enthusiasm for offshore drilling production.<sup>59</sup> Both sides of the aisle were cautiously optimistic about the prospects of domestic drilling.

Former aides to Congressman Connolly have stated that the OPERA legislation was to serve as a vehicle for amendments.<sup>60</sup> In the context of post-*Deepwater Horizon* disaster, many bills were introduced in Congressional Committees, so the likelihood of each one passing was extremely unlikely. Therefore, OPERA was not designed to pass through Congress successfully, but rather to construct useful language to be used in larger bills. OPERA was drafted in order to bring Congressional attention to the dangers of offshore drilling and develop appropriate language for policy change. An altered version of OPERA was later incorporated into the Consolidated Land, Energy and Aquatic Resources (CLEAR) Act of 2010.<sup>61</sup> The CLEAR Act was a Democrat-supported bill that focused on increasing transparency and accountability within federal administration of energy resources. The bill passed the House of Representatives in July 2010 but was rejected by the Senate.

OPERA was introduced as a stand-alone bill twice and had very few cosponsors both times. In 2010 five Democrats supported the bill, and in 2011 only two Democrats backed it. None of the supporters were representative of Gulf States. These numbers are likely an indication of party politics when considering the lack of Republican Party co-sponsorship. Demographically and historically, “it is hard to be elected as an environmentalist in Gulf districts” – those districts that were most affected by the 2010 Gulf Oil spill.<sup>62</sup> Without the support of the Gulf constituency and consequently its Representatives, OPERA’s prospects of passage were unlikely.



## Implementation of Program Design

As part of an educational management exercise, our team was assigned the task of developing an implementation plan for the Oil Pollution and Environmental Review Act. For the purposes of this exercise we assumed that the bill had passed through Congress despite the many barriers hindering its passage in reality. In addition to the text of the bill itself, our extensive research on the environmental issues of oil drilling and the *Deepwater Horizon* spill guided the development of our implementation program. For this reason, our program not only carries out the actions required under OPERA, but also includes measures to bolster the main goals of the bill in terms of oil spill prevention.

We identified four main issues that lead to sub-par drilling regulation and enforcement: inconsistent environmental assessment criteria, strong opposition to regulation, low technical expertise in government agencies, and the absence of an environmental baseline. These four issues can be summarized as a general lack of standardized assessment and monitoring of oil and gas drilling projects. Since the environmental baseline is already being addressed by the BOEM, our implementation plan consists of measures to address the first three issues. The following sections describe our implementation plan for the enactment of OPERA, including budgetary calculations, staffing requirements, performance management and the first year calendar.

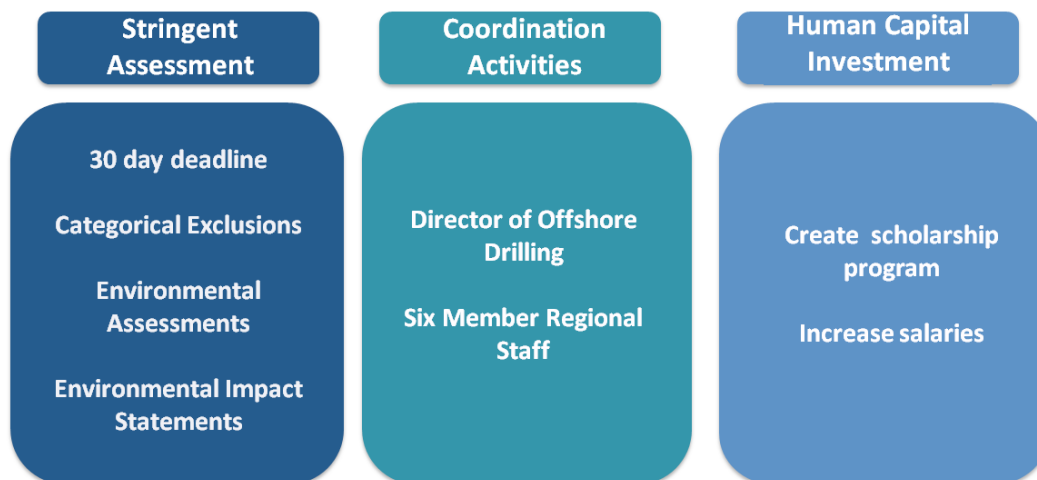
### Areas of Discretion

Since OPERA is vague, we were able to exercise discretion in designing our program. It is likely that legislators purposely left much of the bill vague due to the uncertainty surrounding offshore drilling regulation at the time. When OPERA was presented in June 2010, the Secretary of the Interior had announced plans to dissolve MMS, but the restructuring had not yet been completed. As we developed the program design, we looked at the current responsibilities of the newly created agencies to inform our decisions and determine which agencies would be best suited to carry out particular aspects of the program.

OPERA is also a brief bill, containing only two main provisions which target just a few of the many issues related to offshore drilling. Because there are many other drilling issues unaddressed by OPERA, we decided to use our discretion and expand the program design beyond the explicit nature of the bill, in order to bolster the general goals that OPERA intends to achieve. This expansive program design was limited in part by different measures that have already been taken to make oil drilling safer. Due to limited access to government data, our program design depends on various estimates, particularly in terms of budget calculation. In areas of uncertainty, we made assumptions based on the best available information. In terms of calculating salary-related figures, we relied on data on different government pay grades, current average salary increases, different job titles within each agency, and the number of employees at particular agencies.

### Three Pillars of the Program

Our implementation plan consists of various measures grouped into three different pillars based on cost and complexity (see *Figure 6*). The first pillar carries out mandatory OPERA provisions and their basic implications, while the second two pillars include measures that enhance the bill's overall goal of improved drilling accident prevention.



*Figure 6: Three pillars of the program design.*

### *First Pillar - Stringent Assessment*

The first pillar includes the two explicit provisions of the bill: the classification of offshore drilling activity as a major federal action affecting the environment and the repeal of the 30-day deadline for the Secretary of the Interior. This pillar also includes the implied effects of these provisions: making EISs mandatory and eliminating Categorical Exclusions, meaning 100 percent of drilling projects would undergo environmental analysis. Mandatory EIS's would make EAs unnecessary, so we also propose the elimination of the EA from the approval process. Additionally, in alignment with the bill's goal to increase the quality of environmental analysis, we include a measure to create a stricter Environmental Impact Statement.

OPERA's classification of offshore drilling activity as a "major federal action affecting the quality of the human environment" eliminates the potential for drilling companies to receive Categorical Exclusions. OPERA's second provision repeals the 30-day deadline for the Secretary of Interior to approve proposed geological exploration plans. This repeal seeks to provide the Secretary with ample time to review proposals and make informed decisions. Both of these changes would be effective immediately following the passage of OPERA. The Secretary of the Interior would simply need to perform the administrative tasks required to create a Federal Register Notification. This involves creating a document that describes the new changes, and that meets the required standards as outlined in the Federal Register Document Drafting Handbook. This document would then be submitted to the Office of the Federal Register and a notification would be released upon approval. The Secretary of the Interior would also alert all relevant parties of the changes in the approval process by posting a notice online on the DOI and BOEM websites, and by distributing signed letters explaining the changes and how they will affect future oil drilling projects.

By requiring a detailed environmental analysis of all proposed offshore drilling activities, OPERA implies that EISs will become mandatory. An EIS is a detailed analysis that focuses on the potential geological, biological, socio-economic impacts of a drilling project, as well as the impact on air and impact of waste discharged. It also requires a detailed spill response plan, assuming the greatest possible volume of oil loss. Once EIS's become mandatory, the less-detailed EA would be rendered functionally irrelevant. The most efficient course of action would be to eliminate it, which would optimize the assessment process for both companies and government officials. The Secretary of the Interior would need to submit a Federal

Register Notification about the change. Through the Federal Register, the public may comment on the change. The DOI would respond to the comments and publish its final position in the Federal Register as a final action with an implementation date. As a simple procedural change, the elimination of the EA would require no organizational or staffing changes and would not factor into the budget.

While the issuance of the notifications has no budgetary or staffing impact on our program, the classification of drilling as a “major federal action” would have a significant impact on the approval process of projects. Once Categorical Exclusions are eliminated and all drilling projects must submit to an EIS, there would be an increase in environmental analysis documentation subject to the approval of the BOEM. To compensate for this increased workload, the agency would need to hire new staff and increase the usage of contract staff. In addition, BOEM workload would also increase as a result of the development of the stricter EISs. We would also need to contract a specialist in order to create the new stricter EIS. Together the requirement of EIS statements for all drilling projects and the development of a stricter EIS would force companies to conduct more in-depth analysis of potential drilling projects, as well as more elaborate accident response plans.

The BOEM will assess previous EIS and create new guidelines that it will determine as the most effective and least time consuming possible. In order to ensure that these new standards do not indefinitely detain the approval of new drilling projects, the time between submittal and approval/rejection of proposals will be monitored by the BOEM. If they find that this time span is lengthening dramatically more staff may need to be hired or new guidelines will need to be considered.

### *Second Pillar - Coordination Activities*

The second pillar seeks to improve management and coordination of the agencies involved with offshore drilling, the BOEM and the BSEE. This falls in line with one of the Oil Spill Commission’s main recommendations, which called for the creation of an “independent agency within the Department of the Interior with enforcement authority to oversee all aspects of offshore drilling safety, as well as the structural and operational integrity of all offshore energy production facilities, including both oil and gas production and renewable energy production.”<sup>63</sup>

This recommendation has already in part been addressed by the BOEM when, in November 2011, the position of Chief Environmental Officer was created.<sup>64</sup> This Chief Environmental Officer is in charge of heading the environmental review and science functions while also leading communications and working to coordinate all agencies with a role in offshore drilling such as NOAA and the Department of Energy (DOE). However, we are still concerned that this new position would not report directly to higher authorities, and that science and the integrity of environmental reviews could still be suppressed in favor of leasing, which is something the now defunct MMS was found guilty of doing in order to ensure faster approval of oil industry projects.<sup>65</sup>

To protect scientific integrity and to add a higher level of focus to coordination and policy development for environmental assessment and quality of drilling processes, the Department of the Interior, upon the passage of OPERA, will create a new office, the Office of Offshore Drilling, which would consist of the Director of Offshore Drilling and a six-member regional staff, that would be placed under the authority of the Deputy Secretary’s Office. This office would be responsible for overseeing offshore drilling in order

to ensure proper assessment of environmental quality and the impact of drilling operations.

The Secretary of the Interior will appoint the new position of the Director of Offshore Drilling either internally or externally. The chosen Director, who will be the Chief scientist and who will set the scientific agenda to inform about offshore energy decisions, should have prior working experience in offshore drilling management. The Director should also demonstrate a strong and comprehensive knowledge of the environmental effects of offshore drilling, as well as a strong commitment to public-private sector transparency. The Director will be assigned two staff members for each of the three offshore drilling regions: the Pacific, the Gulf, and Alaska. At least two of these staff members would be filled through internal transfers from within the DOI to expedite start-up and facilitate training of new members. The Department of the Interior's Human Resources will hire all staff members of this new office.

The Director of Offshore Drilling, who is the interagency liaison, will also take over primary responsibility for the environmental baseline program already planned for 2013 by the BOEM. This baseline will be generated with BOEM's own resources. However, numerous other agencies and departments within the federal government already have access to information that may be useful for this baseline construction, which explains the need for the Director of Offshore Drilling to coordinate this project.

The benefits expected from the Director of Offshore Drilling are difficult to quantify, primarily the increase in interagency cooperation and information sharing. Indicators that the Deputy Secretary of the Interior will be responsible for monitoring are the frequency of interagency meetings and the increase in speed of completion for interagency tasks. If this office is not performing as expected the Secretary of the Interior may need to adjust, restructure, or stop it.

### *Third Pillar - Human Capital Investment*

The third pillar of the program centers on investment in new and existing staff members in order to enhance the technical expertise of employees and to make the government positions related to offshore drilling more competitive with private positions. It consists of two measures: to further educate scientists and specialists through a scholarship program, and to offer a salary increase for employees in critical positions.

The first measure is the development of a scholarship program, which would educate employees to better serve the industry's needs. All BOEM and BSEE employees would be eligible for this competitive program, though employees in the key positions of inspectors and assessors would be targeted during the selection process. Accepted scholars would be eligible for tuition assistance for graduate programs to pursue further training that would enhance their work at the agency. The Office of Human Resources for the Department of the Interior runs all benefit programs for Interior agencies, and as such would take charge of this program. Potential scholars would be nominated and recommended by their supervisors to the agency directors. The BOEM and BSEE agency directors would have final authority over who receives the grants, and would inform the Office of Human Resources of their chosen employees.

Scholars would need to fulfill a minimum employment period at the agency in order to receive the assistance, and would be required to compensate the agency for a portion of the tuition fees in the event of a breach of contract. Annual employee performance reviews are required for all federal agencies. Therefore past and current job performance records exist and are readily available to the Office of Human Resources. By comparing the rate of performance increase among those who received the added training to other employees it will be possible to determine if the training program increases the

rate of improvement and advancement of these employees. If this program does not create a significant gain in these measures then it will be at the discretion of the Secretary of the Interior to cease it. In April 2012 the Director of the BSEE, James Watson, announced a plan to increase the base salary for new and existing geologists, geophysicists, and petroleum engineers in the Gulf region by up to 25 percent.<sup>66</sup> As part of our program design, we would expand the salary hike to include all three drilling regions. We would also expand the plan to include inspectors in the BSEE. This measure would help the BOEM better compete with private industry for potential employees, as well as retain existing employees for longer periods of time. It would also better compensate employees for the risk they accept as professionals in the offshore drilling development and production field.

The Office of Human Resources currently posts information on start and end dates of employment as well as technical salary levels. If the Secretary of the Interior, after analyzing this information, determines, at a time of his discretion, that the program has not been effective at increasing retention then the salaries of these positions will be frozen until such time as inflation ensures that they are at the previous comparative level with other positions. If, however, the Secretary determines that this change is effective, the pay increase will be made permanent.

## Budget and Staffing

As mentioned in the previous section, the first pillar would require additional staffing in order to complete the increased workload of the new approval process. We determined a total cost of \$1.2 to complete this pillar. Our team estimated that the increase in quantity and quality of EIS's subject to BOEM approval would require a 10 percent staff increase. Based on our estimate of 100 current employees, this increase would result in the hiring of ten new staff members. The budget for this first pillar includes the cost of salary and fringe benefits for new employees, as well as equipment such as computers and workstations for the ten new staff members. We assumed an average salary of \$90,000 plus 25 percent fringe benefits for a total of \$1.1 million. We estimated that computers would cost \$20,000 and that workstations would cost \$10,000. We also accounted for the one-time contracting of a specialist for the task of developing the new strict EIS at \$50,000.

The second pillar will require a total funding of \$879,250 in order to create the Office of Offshore Drilling. The salary and fringe benefits for the full-time position of the Director of Offshore Drilling corresponds to \$173,750 while the salary and fringe benefits for the staff team, which includes six environmental analysts in full time position, corresponds to \$675,000. Finally, \$27,000 is allocated to cover operational costs, including national air tickets, per diem travel costs, computers, working stations and office supplies.

For the third pillar, our costs for the scholarship program include the cost of tuition itself and transportation costs. We plan on granting ten scholarships per year, five at the amount of \$50,000 and five at the amount of \$60,000. This tiering of scholarship awards accounts for tuition differences among universities. We will also help cover the costs of plane tickets, offering five national flights at \$500 each and five international flights at \$1,000 each. Through our expansion of the salary increase program, we will offer a 25 percent pay raise plus 25 percent fringe benefits on the new salary to 150 employees. At an estimated \$90,000 salary for the current average employee, the salary program will cost about \$4.2 million. In conjunction the third pillar measures cost \$4.7 million.

We estimate a total overall budget of \$6.8 million to implement OPERA, with the majority of the funding being dedicated to staffing costs and salary increases. For the line-item breakdown, see Appendix D.

## First Year Calendar

In order to implement the program design that OPERA calls for, the program itself must also include a comprehensive master calendar that will serve as reference for completing the necessary steps toward total implementation. For this calendar we assumed the passage of the bill in October 2012. This calendar details the activities over one year, beginning in January 2013; however, the last two months of 2012 will be utilized to complete work as well. Given the agencies involved in OPERA’s implementation, one year is the most feasible timeframe to use because it is easier to manage than a two to five year projection plan, and it is more thorough than a six month plan. Beginning in January, the calendar is then divided into three sub-components applying to each of the pillars of the program design: stringent assessment, coordination activities, and human capital investment. Each pillar’s calendar includes incremental benchmark deadlines to be used as times to measure the progress of implementation, as indicated by the grey boxes in Figure 8 below.

ACTIVITIES	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
<b>STRINGENT ASSESSMENT</b>														
1.1) Federal Register														
1.2) Public Comment Period														
1.3) Coordination Plan														
1.4) New EIS														
1.5) Environmental Baseline														
<b>COORDINATION ACTIVITIES</b>														
2.1) Hire Director of Drilling														
2.2) Hire Six Regional Staff														
<b>HUMAN CAPITAL INVESTMENT</b>														
3.1) Scholarship Program														
3.2) Select salary increases														

*Figure 8: Benchmark for the first year of OPERA’s implementation.*



## Conclusion

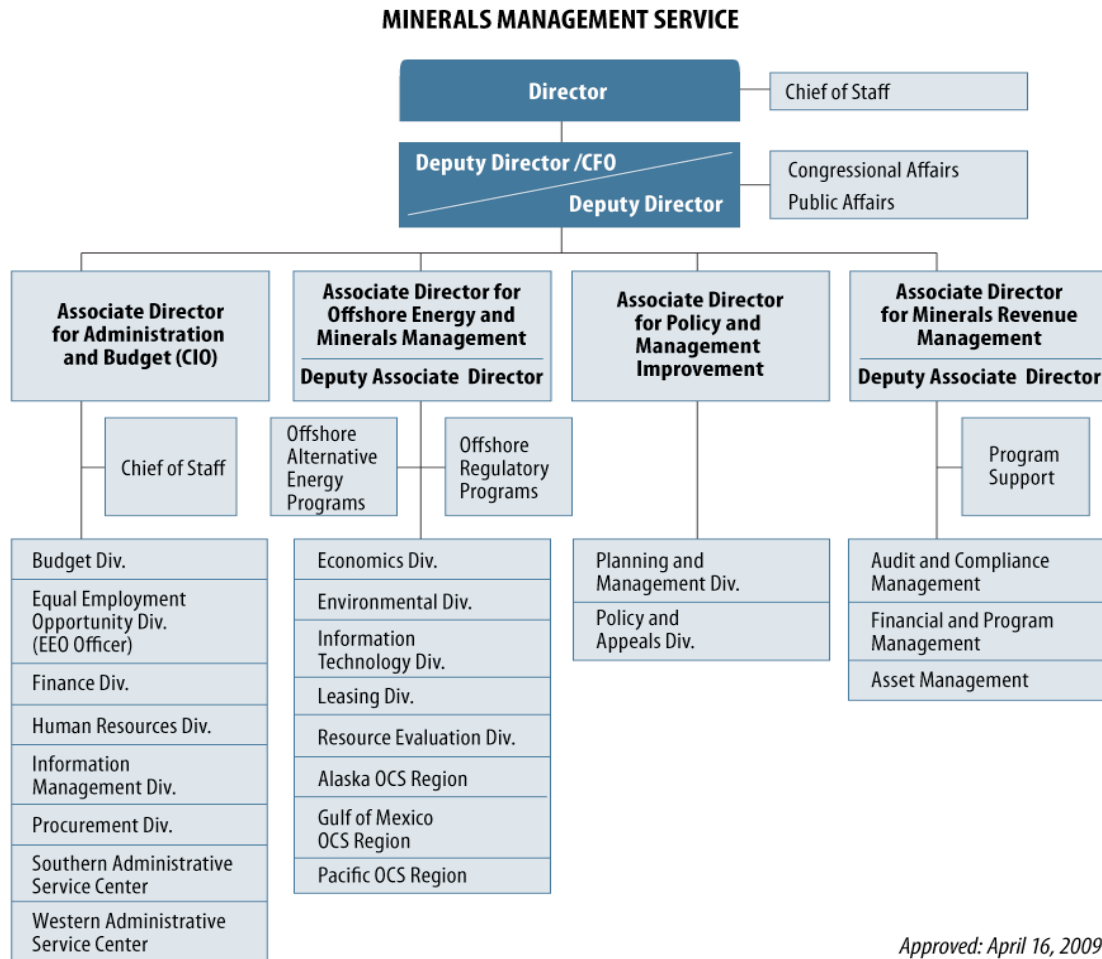
Beyond the social, environmental and economic effects of the *Deepwater Horizon* incident, this record-breaking spill made an indelible impact on U.S. public opinion towards offshore drilling. It illuminated the presence of issues in the drilling lease acquisition process, and in industry preparedness to address accidental events. In response both government and industry imposed a host of measures to address the issues that allowed the spill to occur, including federal agency reorganization, an industry safety center, a federal safety committee. Members of Congress proposed numerous bills, including Congressman Connolly's Oil Pollution Environmental Review Act.

In spite of the many reforms enacted in response to *Deepwater Horizon*, there is still room for improvement. The Oil Pollution Environmental Review Act calls for two key legislative changes - the designation of offshore drilling as a major federal action, and the elimination of the thirty day approval period - which have not yet taken place. Together, these measures would ensure a more thorough review process of offshore drilling activities. The bill's passage would also provide an opportunity to put more federal changes in place that target the general goal behind the bill: safer offshore drilling. Our OPERA program design, with its inclusion of coordination activities and human capital investment, in addition to the mandated stringent assessment measures, shows how the implementation program for OPERA could be expanded beyond the mandatory actions it calls for. Our program design is comprised of various changes that the BOEM and BSEE could implement in the event of the OPERA's passage, as well as the logistical tasks such as staffing needs, monetary requirements, and performance management tasks that would need to take place in order to carry out these actions.

Oil is likely to remain a significant part of the U.S. energy portfolio in the near future, given increasing energy demands and the current political climate. This means that offshore drilling activities will continue in spite of the risks to the environment and industry employees, but efforts can be taken to reduce the frequency and volume of oil spills to minimize the negative environmental, social, and economic effects in the event of a drilling accident. Our OPERA program design would contribute to the many efforts that have already taken place to balance offshore drilling and environmental protection.



# Appendix A: MMS Organizational Chart before the *Deepwater* spill



Approved: April 16, 2009

**Source:** U.S. Department of the Interior, *Budget Justifications and Performance Information, Fiscal Year 2011: Minerals Management Service*, p. 26, at <http://www.boemre.gov/adm/PFD/2011/BudgetJustification.pdf>.

## Appendix B: After Reorganization of BOEMRE/MMS Functions

Assistant Secretary for Land and Minerals Management		Assistant Secretary of Policy, Management and Budget
<b>Bureau of Ocean Energy Management</b>	<b>Bureau of Safety and Environmental Enforcement</b>	<b>Office of Natural Resources Revenue</b>
Environmental Analysis and NEPA	Safety, Technical and Environmental Review of Plans	Revenue Collection and Projections
5-Year Program (Oil and Gas)	Safety and Technical Inspections and Enforcement	Enforcement
Leasing Process Management	Environmental Inspections of Enforcement	Accounting/Financial Reporting
Development/Exploration/Production Plan Management	Safety and Environmental Research	Asset Valuation
Resource Management	Rulemaking (for Safety and Environment)	Economic and Market Analysis
Rulemaking (for Resource Utilization)		
Environmental Studies		

**Source:** U.S. Department of the Interior, "Implementation Report: Reorganization of the Minerals Management Service," issued July 14, 2010, p. 6. Available at <http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=38543>.

## Appendix C: OPERA Bill Text

### H.R.52 -- OPERA (Introduced in House - IH)

112th CONGRESS

1st Session

H. R. 52

To amend the Outer Continental Shelf Lands Act to require that treatment of the issuance of any exploration plans, development production plans, development operation coordination documents, and lease sales required under Federal law for offshore drilling activity on the outer Continental Shelf as a major Federal action significantly affecting the quality of the human environment for the purposes of the National Environmental Policy Act of 1969, and for other purposes.

#### IN THE HOUSE OF REPRESENTATIVES

January 5, 2011

Mr. CONNOLLY of Virginia (for himself and Mr. TONKO) introduced the following bill; which was referred to the Committee on Natural Resources.

#### A BILL

To amend the Outer Continental Shelf Lands Act to require that treatment of the issuance of any exploration plans, development production plans, development operation coordination documents, and lease sales required under Federal law for offshore drilling activity on the outer Continental Shelf as a major Federal action significantly affecting the quality of the human environment for the purposes of the National Environmental Policy Act of 1969, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

#### SECTION 1. SHORT TITLE.

This Act may be cited as the 'Oil Pollution Environmental Review Act' or 'OPERA'.

#### SEC. 2. APPLICATION OF NEPA TO OFFSHORE DRILLING ACTIVITY.

(a) In General- The Outer Continental Shelf Lands Act (43 U.S.C. 1331 et seq.) is amended by adding at the end the following new section:

#### 'SEC. 32. APPLICATION OF NATIONAL ENVIRONMENTAL POLICY ACT OF 1969.

'(a) In General- The head of any Federal agency shall treat the issuance of any exploration plans, development production plans, development operation coordination documents, and lease sales required under Federal law for offshore drilling activity on the outer Continental Shelf as a major Federal action significantly affecting the quality of the human environment for the purposes of section 102 of the National Environmental Policy Act of 1969, and requiring detailed environmental analysis of such proposed actions and reasonably foreseeable subsequent actions.

'(b) Definitions- In this section the term 'offshore drilling activity'--

'(1) means drilling for oil or gas under a lease, or conducting a major geophysical seismic survey, under the Outer Continental Shelf Lands Act; and

'(2) includes such drilling or surveying for exploration, development, or production.'

(b) Repeal of 30-Day Deadline for Approval of Exploration Activities- Section 11(c)(1) of the Outer Continental Shelf Lands Act (43 U.S.C. 1340(c)(1)) is amended by striking 'The Secretary shall approve such plan, as submitted or modified, within thirty days of its submission, except that the' and by inserting 'The'

## Appendix D: Total Program Design Budget

Action	Category	Sub-Category	Item	Cost/Unit	Quantity	Total
<b>1.1) Implement priority as a Major Federal Action</b>						\$ -
						\$ -
						\$ -
<b>1.2) Implement repealing 30 days deadline of approval</b>						\$ -
						\$ -
						\$ -
<b>1.3) Eliminate Categorical Exclusion and Environmental Assessment (EA)</b>						\$ -
						\$ -
						\$ -
<b>1.4) Design and implementation of a more stringent EIS</b>						\$ -
	staff	salary	contract new environmental analysts	\$ 90,000	10	\$ 900,000
	staff	Fringe Benefits (25%)	contract new environmental analysts	\$ 22,500	10	\$ 225,000
	equipment	Equipment	Computer	\$ 1,000	20	\$ 20,000
	equipment	Equipment	workstation	\$ 500	20	\$ 10,000
	Contract	Technical assistance	contract specialist create the EIS framework	\$ 50,000	1	\$ 50,000
						\$ -
						<b>Category Subtotal</b> \$ 1,205,000
<b>2.2) Office of Offshore Drilling</b>						\$ -
	staff	salary	Director of Offshore Drilling	\$ 139,000	1	\$ 139,000
	staff	Fringe Benefits (25%)	Director of Offshore Drilling	\$ 34,750	1	\$ 34,750
	travel	air tickets	national air tickets	\$ 500	10	\$ 5,000
	travel	per diem	per diem	\$ 300	10	\$ 3,000
	staff	salary	Environmental Analyst	\$ 90,000	6	\$ 540,000
	staff	Fringe Benefits 25%	Environmental Analyst	\$ 22,500	6	\$ 135,000
	equipment	Equipment	Computer	\$ 1,000	7	\$ 7,000
	equipment	Equipment	workstation	\$ 500	7	\$ 3,500
	equipment	Supplies	office supplies	\$ 1,000	12	\$ 12,000
						\$ -
						\$ -
						<b>Category Subtotal</b> \$ 879,250
<b>3.1) Implementation of a scholarship program (10 per year)</b>						\$ -
	training	training	scholarships	\$ 50,000	5	\$ 250,000
	training	training	scholarships	\$ 60,000	5	\$ 300,000
	travel	air tickets	national air tickets	\$ 500	5	\$ 2,500
	travel	air tickets	international air tickets	\$ 1,000	5	\$ 5,000
<b>3.2) Implement a increase in the salaries</b>						\$ -
	staff	salary	increase salaries 25%	\$ 22,500	150	\$ 3,375,000
	staff	Fringe Benefits 25%	increase salaries 25%	\$ 5,625	150	\$ 843,750
						<b>Category Subtotal</b> \$ 4,776,250
						<b>Total Budget</b> \$ 6,860,500

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