

# **Increased Safety Measures for Energy Development on the Outer Continental Shelf, for 30 CFR Part 250**

## **Environmental Assessment and Finding of No Significant Impact**

**U.S. Department of the Interior  
Bureau of Ocean Energy Management,  
Regulation and Enforcement**

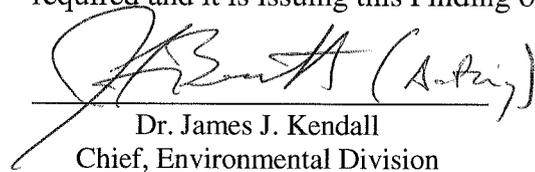
**Herndon, VA  
September 2010**

## FINDING OF NO SIGNIFICANT IMPACT (FONSI)

### Implementation of Interim Final Rule for Increased Safety Measures for Energy Development on the Outer Continental Shelf (OCS)

This Interim Final Rule implements certain safety measures outlined in the report entitled, "Increased Safety Measures for Energy Development on the Outer Continental Shelf" (Safety Measures Report), dated May 27, 2010. The President directed the Department of the Interior to develop this report as a result of the Deepwater Horizon incident and oil spill on April 20, 2010. On June 2, 2010, the Secretary of the Interior directed the former Minerals Management Service, (now the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE)), to adopt the recommendations contained in the Safety Measures Report and to implement them as soon as possible. The measures from the report implemented in this rule are intended to improve the safety of offshore oil and gas drilling operations by improving well control technology and procedures. This rule also addresses certain other requirements considered necessary to assure the safety of offshore oil and gas drilling operations.

The BOEMRE has evaluated this Interim Final Rule to determine whether its promulgation could result in significant environmental impacts to the human, biological or physical environment. The promulgation of the rule will improve the safety of offshore well control operations by improving well control reliability. This will reduce the likelihood of environmental impacts from loss of well control and associated explosions, rig failures and catastrophic oil spills. Promulgation of the rule will benefit environmental conditions on the Outer Continental Shelf (OCS) and coastal areas by reducing the likelihood of occurrence of, and effects from, catastrophic and other oil spills. Implementation of the rule's requirements will not require the use of new types of procedures, technologies, or materials that could result in environmental impacts. The rule implements additional protections against loss of well control without jeopardizing the well control protection that exists under current regulations. Based on these considerations, BOEMRE finds that the proposed action would not have a significant impact on the environment; it has determined that an environmental impact statement is not required and it is issuing this Finding of No Significant Impact (FONSI).

  
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Dr. James J. Kendall  
Chief, Environmental Division

  
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Date

## TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	Background and Overview .....	1
1.2	Purpose and Need.....	2
2.0	PROPOSED ACTION AND ALTERNATIVES.....	2
2.1	Proposed Action.....	2
2.2	No Action Alternative.....	5
3.0	AFFECTED ENVIRONMENT.....	5
4.0	ENVIRONMENTAL CONSEQUENCES.....	6
4.1	Proposed Action.....	6
4.2	No Action Alternative.....	14
5.0	REFERENCES .....	16
6.0	LIST OF PREPARERS .....	17

## 1.0 INTRODUCTION

This environmental assessment is based on the latest version of the Interim Final Rule, Increased Safety Measures for Energy Development on the Outer Continental Shelf as of 2:21 p.m., September 29, 2010.

### 1.1 *Background and Overview*

The Outer Continental Shelf Lands Act (OCSLA) directs the Secretary of the Interior (Secretary) to manage the orderly leasing, exploration, development, and production of mineral resources on the Federal Outer Continental Shelf (OCS). The Secretary has designated the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) as the agency responsible for the mineral leasing of OCS lands and for the supervision of offshore oil and gas operations after lease issuance. The regulations governing OCS exploration, development, and production activities are codified at 30 CFR Part 250 (*Oil and Gas and Sulphur Operations in the Outer Continental Shelf*).

This Interim Final Rule, Increased Safety Measures for Energy Development on the Outer Continental Shelf, will implement certain safety measures outlined in the report entitled, “Increased Safety Measures for Energy Development on the Outer Continental Shelf” (Safety Measures Report), dated May 27, 2010. The President directed the Department of the Interior to develop this report as a result of the Deepwater Horizon incident on April 20, 2010. On June 2, 2010, the Secretary of the Interior directed the former Minerals Management Service, (now BOEMRE), to adopt the recommendations contained in the Safety Measures Report and to implement them as soon as possible. The measures from the report promulgated in this rule are intended to improve the safety of offshore oil and gas drilling operations by improving well control technology and procedures. This rule also addresses certain other requirements considered necessary to assure the safety of offshore oil and gas drilling operations.

The Interim Final Rule incorporates best practices for well control into the regulations at 30 CFR Part 250 governing operations on the OCS. It introduces new inspection, training, maintenance, and equipment requirements that will improve well control reliability. As a result of improvements in well control reliability, the likelihood of the occurrence of oil spills will be reduced. In particular, this EA finds that the rule will reduce the likelihood of the occurrence of, and impacts from, catastrophic OCS oil spills, such as the Deepwater Horizon spill.

With the awareness that the promulgation of the rule will reduce the likelihood of occurrence of the environmental impacts from another catastrophic oil spill such as Deepwater Horizon, this EA also evaluates whether promulgation of the rule could introduce other environmental impacts by requiring new technologies or operational procedures, or from technological uncertainties associated with the rule that could compromise well control protection provided under current regulations.

## **1.2 Purpose and Need**

The purpose of the proposed Federal action is to promulgate regulations under 30 CFR Part 250 to improve the reliability of well control procedures and ensure safe OCS oil and gas operations. Pursuant to the OCSLA, the BOEMRE is to administer oil and gas operations on the OCS in a manner that is safe for the human, marine, and coastal environment. The Deepwater Horizon incident resulted in the death of 11 workers and an oil spill of national significance. This Interim Final Rule will therefore amend drilling regulations related to well control and well control equipment to increase the safety and reliability of drilling operations on the OCS. This includes requirements related to blowout preventers, well casing and cementing, secondary intervention, recordkeeping, training, and certification. The purpose of this rulemaking is to assure increased well control reliability so as to reduce the likelihood of occurrence of catastrophic and other oil spills on the OCS. Implementation of these regulations is of high importance for improving future environmentally safe drilling operations on the OCS.

## **2.0 PROPOSED ACTION AND ALTERNATIVES**

This chapter describes the proposed action and the no action alternative, as required by Council on Environmental Quality (CEQ) regulations implementing National Environmental Policy Act (NEPA).

The BOEMRE is evaluating other actions prescribed in the Safety Report. These recommendations will be addressed in future rulemakings and are not appropriate to identify as alternatives to be analyzed in this assessment.

### **2.1 Proposed Action**

The proposed action is the promulgation of the Increased Safety Measures for Energy Development on the Outer Continental Shelf Interim Final Rulemaking. This rulemaking will modify the regulations under 30 CFR Part 250, to include 20 new or revised sections that will clarify policy and procedures and incorporate improved drilling and safety standards. The new regulations are intended to improve the reliability of well control procedures and reduce the occurrence of associated oil spills. This rule will not affect the likelihood of occurrence of OCS oil spills from other sources such as pipeline or vessel accidents. Catastrophic oil spills, however, are most likely to occur as a result of loss of well control that can result in a blowout and uncontrolled releases of gas, condensate, oil, drilling fluids, or water into the environment until well control is restored, which, as the Deepwater Horizon incident demonstrated, can be several months.

This rule specifically introduces new well control requirements to ensure that there are adequate physical barriers in the well to prevent oil and gas from escaping into the environment. These well control requirements address casing and cementing design and installation, tighter cementing practices, the displacement of kill-weight fluids, and the testing of independent well barriers. The rule also includes requirements for subsea blowout preventers (BOP) that will help

ensure that they will operate in the event of an emergency and that remotely operated vehicles (ROV) are capable of activating. These increased requirements for well control are expected to decrease the likelihood of a loss of well control (USDO, 2010.)

Table 1 lists the revised portions of 30 CFR Part 250 as they appear in the Increased Safety Measures for Energy Development on the Outer Continental Shelf Interim Rule. The sections listed as “analyzed” in the table below were subjected to additional analysis for environmental effects in this Environmental Assessment.

Table 1. Changed or Added Sections to 40 CFR Part 250

Section Name	Subsection
Part 250.198 Documents Incorporated by Reference.	(a) previously codified (3) informational/advisory (h) previously codified (63) previously codified/subsection analyzed (79) subsection analyzed
Part 250.415 What must my casing and cementing programs include?	(c) previously codified (d) previously codified (e) previously codified (e)(2) previously codified (f) subsection analyzed
Part 250.416 What must I include in the diverter and BOP descriptions?	(d) previously codified (e) subsection analyzed (f)(1) subsection analyzed (f)(2) subsection analyzed (f)(3) subsection analyzed (g) informational/advisory (g)(1) informational/advisory (g)(2)(i) informational/advisory (g)(2)(ii) administrative
Part 250.418 What additional information must I submit with my APD?	administrative
Part 250.420 What well casing and cementing requirements must I meet?	(a) previously codified (a)(4) previously codified (a)(5) previously codified (a)(6) subsection analyzed (b) previously codified (b)(3) subsection analyzed
Part 250.423 What are the requirements for pressure testing casing?	(a) previously codified (b) subsection analyzed (c) subsection analyzed
Part 250.442 What are the requirements for a subsea BOP system?	(a) previously codified/subsection analyzed (b) previously codified (c) previously codified (d) subsection analyzed (e) subsection analyzed

Section Name	Subsection
	(f) subsection analyzed (g) subsection analyzed (h) administrative (i) administrative (j) administrative (k) previously codified (l) subsection analyzed
Part 250.446 What are the BOP maintenance and inspection requirements?	previously codified/administrative
Part 250.449 What additional BOP testing requirements must I meet?	(h) previously codified (i) previously codified (j) subsection analyzed (j)(1) subsection analyzed (j)(2) administrative (k) subsection analyzed (k)(1) administrative (k)(2) administrative
Part 250.451 What must I do in certain situations involving BOP equipment or systems?	(i) subsection analyzed
Part 250.456 What safe practices must the drilling fluid program follow?	(i) previously codified (j)(1-4) subsection analyzed
Part 250.515 Blowout prevention equipment.	(b) previously codified (b)(5) this section analyzed in 250.442(a) (e) this section analyzed in 250.442(a)
Part 250.516 Blowout preventer system tests, inspections, and maintenance.	(d) previously codified (d)(6) previously codified (8) subsection analyzed (8)(i) subsection analyzed (8)(ii) administrative (9) subsection analyzed (9)(i)(ii) administrative (g)(1)(2) previously codified (h) previously codified/administrative
Part 250.615 Blowout prevention equipment.	(b) previously codified (b)(5) this section analyzed in 250.442(a) (e) this section analyzed in 250.442(a)
Part 250.616 Blowout preventer system testing, records, and drills.	(h) subsection analyzed (h)(1) subsection analyzed (h)(1)(i) subsection analyzed (h)(1)(ii) administrative (h)(2) subsection analyzed (h)(2)(i) administrative (h)(2)(ii) administrative (h)(3) subsection analyzed

<b>Section Name</b>	<b>Subsection</b>
Part 250.617 What are my BOP inspection and maintenance requirements?	Section analyzed
Part 250.1500 Definitions.	informational/advisory
Part 250.1503 What are my general responsibilities for training?	administrative
Part 250.1712 What information must I submit before I permanently plug a well or zone?	(e) previously codified (f) previously codified (f)(14) previously codified (g) subsection analyzed
Part 250.1721 If I temporarily abandon a well that I plan to re-enter, what must I do?	section analyzed

## **2.2 No Action Alternative**

This alternative would keep the existing 30 CFR Part 250 regulations that apply to well control in place. Any updated policies and practices in this Interim Final Rule to reduce the risk of accidents and oil spills resulting from loss of well control would not be promulgated. This alternative would result in regulations that fail to reflect measures determined by BOEMRE to be necessary for both increased safety of oil and gas operations on the OCS and better protection of the environment by improving the reliability of well control procedures and reducing the likelihood of the occurrence of associated oil spills.

## **3.0 AFFECTED ENVIRONMENT**

Well control accidents can result in immediate local impacts from explosions, fires, and discharges, which can cause human injury and mortality and impacts to the biota and water and air quality. The Deepwater Horizon incident has shown that a catastrophic oil spill resulting from a well control accident can affect biologic, physical, socioeconomic, and sociocultural resources over extensive coastal and offshore areas (i.e. the marine, terrestrial, and atmospheric environments). The Deepwater Horizon spill, for example, contacted over 500 miles of shoreline with light to heavy oiling. Examples of environmental resources that would be exposed to the affects of a catastrophic OCS oil spill include:

### **Biologic**

- Marine Mammals
- Marine and Coastal Birds
- Fish Resources and Essential Fish Habitat
- Marine Turtles
- Coastal Habitats
- Seafloor Habitats

### **Physical**

Air Quality  
Water Quality

### **Socioeconomic**

Areas of Special Concern  
Population, Employment, and Regional Income  
Tourism and Recreation  
Commercial and Recreational Fisheries

### **Sociocultural**

Environmental Justice  
Archeological Resources  
Subsistence

Descriptions and analyses of the effects of oil spills on these environmental resources are included in the following documents:

MMS, 2007, Outer Continental Shelf Oil & Gas Leasing Program: 2007-2012, Final Environmental Impact Statement, 2 vols.

MMS, 2007, Gulf of Mexico OCS Oil and Gas Lease Sales: 2007-2012, Final Environmental Impact Statement, 2 vols.

MMS, 2008, Beaufort Sea and Chukchi Sea Planning Areas, Oil and Gas Lease Sales 209, 212, 217, and 221, Draft Environmental Impact Statement, 4 vols.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 *Proposed Action***

The proposed action promulgates interim rules for increased well control safety measures. The purpose of the rule is to reduce the likelihood of occurrence of catastrophic OCS oil spills such as the Deepwater Horizon spill by reducing the likelihood of occurrence of blowouts and other well control accidents. At the same time, the implementation of the requirements of the rule creates the potential for other environmental impacts to occur as a result of new technologies and procedures that may be needed to implement the requirements of the rule, or if the rule requirements jeopardize well control protection provided under existing regulations. This section evaluates whether any of these impacts can be reasonably expected to occur. A discussion is provided first of the expected environmental benefits of the rule that will result from a reduction in the likelihood of occurrence of a catastrophic oil spill.

### **Environmental Benefits**

The primary environmental benefit of the interim rule will result from reducing the likelihood of occurrence of catastrophic oil spills. The Deepwater Horizon spill resulted in geographically

widespread immediate direct impacts to numerous marine and coastal environmental resources, as well as anticipated longer term effects associated with the recovery, restoration, and ongoing re-release of oil into the environment from oiled shorelines. The occurrence of sequential catastrophic spills could result in a non-linear accumulation of effects as a result of a spill affecting an existing stressed baseline environment. The environmental impacts of one or more catastrophic spills would likely be aggravated by ongoing environmental stresses occurring from human use and climate change effects. The intent of the rule is to implement requirements that reduce the likelihood of occurrence of these scenarios by improving well control reliability.

A representative estimate of the environmental and other costs from a deepwater catastrophic blow out oil is approximately \$16.3 billion (USDOJ Interim Final Rule 2010, 65). BOEMRE has estimated the recurrence interval of a catastrophic spill on the OCS to be 26 years based on the occurrence of a single deepwater catastrophic blowout and oil spill (Deepwater Horizon) out of 4,123 deepwater wells drilled to date in the Gulf of Mexico, and a forecasted future drilling activity rate in the Gulf of Mexico of 160 wells per year.

The actual amount of increased reliability of well control operations brought about by promulgation of the interim rule is uncertain at this time. While the amount of improvement in well control reliability cannot be quantified at this time, it is reasonable to expect that a measurable improvement in well control reliability will result from promulgation of this rule because the rule modifies existing regulations to mandate adherence to established industry and government well control best practices. For example, although the causes of the blowout at the Deepwater Horizon facility are not fully known at this time, preliminary information suggests failure to follow best cementing and casing practice was a factor in the blowout. It is reasonable therefore to assume that uniform adherence to these best practices will make the occurrence of related catastrophic oil spills statistically less likely to occur by some as yet undetermined amount.

While the magnitude of the impacts of the Deepwater Horizon oil spill are still being assessed, substantial impacts to the resources listed in Chapter 3 are expected to occur (for example, the following links describe preliminary impacts to and concerns about endangered marine turtles: [Southeast, Florida, NPS Oil Spill Response.](#)) The analysis of the No Action Alternative in Section 4.2 presents existing information on the magnitude and kinds of impacts to many of the environmental resources listed in Chapter 3 from the Deepwater Horizon spill.

## **Potential Environmental Impacts**

### Economic Impacts

The BOEMRE estimates that the rule will cost \$183 million annually for operators to implement for as long as these regulations are in force (DOI, 2010, 63). BOEMRE estimates that these regulations will increase the cost of drilling a deepwater well by 2% (USDOJ, 2010, p. 71). The costs of the revised safety requirements will be borne by the OCS lessees who explore for and produce oil and gas and will be dependent on the number of wells drilled. The costs will occur for equipment, inspections, maintenance, training, reporting and other requirements of the rule. These extra costs could reduce investments in marginal oil fields, resulting in reduced employment and income from OCS development.

### **Biologic, Physical, and Sociocultural Impacts**

This section considers whether environmental impacts could be associated with promulgating the rule. While the rule's purpose is to maintain environmental conditions in marine and coastal areas by reducing the likelihood of the occurrence of catastrophic and other oil spills on the OCS, this section considers whether or not the rule introduces inspections, maintenance, testing, or equipment configurations that require new procedures, materials, or discharges expected to result in environmental impacts. Impacts from discharges or accidents associated with testing and maintenance could affect human health and safety, local water and air quality, and biota and habitats near the drilling activity. The section also evaluates whether or not the regulatory changes from the rule could jeopardize well control protection provided under existing regulations potentially resulting in oil spills that could affect diverse environmental resources over large areas. This section does not consider the economic impacts of implementing the rule, which were evaluated separately above.

### **Rule subsections not warranting detailed analysis**

The Interim Rule includes 20 sections and numerous subsections. Some subsections of this rule address strictly administrative and informational/advisory matters that would not have any significant environmental impacts, or requirements that have been previously codified into regulation. Examples include definitions of terms, requirements for training, and developing written procedures. No harmful environmental impacts are anticipated as a result of these parts of the Interim Rule and further analysis is not warranted. Other parts of the Interim Rule address the implementation, maintenance, and inspection of enhanced barriers, pressure tests, BOP systems, and seafloor ROV function checks that could introduce procedures, materials, discharges, or new technologies possibly resulting in harmful environmental effects. These parts of the rule underwent further analysis.

### **Activities which are informational or advisory in nature**

#### ***250.198 (a)(3) Documents Incorporated by Reference***

Section 250.198(a)(3) of the Interim Rule, "Documents Incorporated by Reference," states that documents incorporated by reference into the regulations are requirements. As a result, all recommendations in American Petroleum Institute (API) Recommended Practices (RP) documents that are incorporated by reference become rule requirements to which operators must adhere (there is an exception if the relevant regulation incorporates only a part of the incorporated document or provides that strict compliance is not required). The API RP documents are created with input from oil and gas operators, drilling contractors, service companies, consultants, and regulators and are intended to facilitate the broad availability of proven and sound engineering and operating practices. The incorporation of these documents by reference requires that all OCS well control technology, testing, inspection and maintenance components and procedures and their certifications will be based on and evaluated against these recommended practices. Although documents incorporated by reference have always been requirements, this section clarifies that effect.

### ***250.1500 Definitions.***

The revision of this section (previously codified) clarifies several terms in reference to well control to ensure that rig personnel are trained in deepwater well control and in the specific duties, equipment, and techniques associated with deepwater drilling. These definitions only clarify existing industry terminology.

### **Updates and revisions to 30 CFR Part 250 that are requirements previously codified into regulation**

- 250.198 (a), (h) (63) Documents Incorporated by Reference*
- 250.415 (c), (d), (e)(2) What must my casing and cementing programs include?*
- 250.416 (d) What must I include in the diverter and BOP descriptions?*
- 250.420 (a)(4),(5) What well casing and cementing requirements must I meet?*
- 250.423 (a) What are the requirements for pressure testing casing?*
- 250.442 (a),(b),(c),(k) What are the requirements for a subsea BOP system?*
- 250.446 What are the BOP maintenance and inspection requirements?*
- 250.449 (h), (i) What additional BOP testing requirements must I meet?*
- 250.456 (i) What safe practices must the drilling fluid program follow?*
- 250.1712(e), (f)(14) What information must I submit before I permanently plug a well or zone?*

The following are illustrative discussions of two sections from this list:

#### **250.442 (a),(b),(c) What are the requirements for a subsea BOP system?**

The language in this section already exists in federal regulations under Section 250.442, for example, “subsection b” can be found under existing “subsection d” and “subsection k” can be found under the existing “subsection e”, etc. This is no more than a reorganization of the existing language found in federal regulations.

#### **250.446 What are the BOP maintenance and inspection requirements?**

The language in this section already exists in federal regulations under Section 250.446. The section has been revised to include the requirement, “You must document the procedures used, record the results, and make available to BOEMRE upon request.” This requirement is purely administrative and does not warrant further analysis.

### **Regulations for which the impacts are limited to administrative effects**

- 250.418 What additional information must I submit with my APD?*
- 250.423 (b)(3),(4) What are the requirements for pressure testing casing?*
- 250.423 (c)(1),(2) What are the requirements for pressure testing casing?*
- 250.442 (h),(i),(j) What are the requirements for a subsea BOP system?*
- 250.446 What are the BOP maintenance and inspection requirements?*
- 250.449 (j)(2),(k)(1),(2) What additional BOP testing requirements must I meet?*
- 250.516 (d)(8)(ii), (d)(9)(i),(ii) Blowout preventer system tests, inspection, and maintenance*
- 250.616 (h)(1)(ii), (h)(2)(i),(ii) Blowout preventer system testing, records, and drills.*
- 250.1500 through 250.1510 [AMEND]*

The following are illustrative discussions of two sections from this list:

**250.616 (h)(1)(ii) Blowout preventer system testing, records, and drills.**

This subsection simply requires documentation of test results and does not warrant further analysis.

**250.418 What additional information must I submit with my APD?**

This section requires that the BOEMRE receive a request for approval, certification that all requirements of subsection 250.420 (a)(6) of this regulation have been met, and a description of the qualifications required by subsection 250.416 (f). This requirement is for purely administrative processes and does not warrant further analysis.

**Rule subsections analyzed for potential environmental impacts**

Subsections of the rule related directly or indirectly to the following topics are considered for further analysis:

BOP Systems  
Cementing, Casing and Mechanical Barriers  
Well Plugging and Abandonment  
Fluid Displacements

Each topic will be evaluated to determine whether the promulgation of the rule could introduce the potential for harmful environmental impacts. The rule includes requirements for well control systems and their inspection, maintenance, testing, and requirements for independent third-party certification that the requirements of the rule have been followed.

Most of the rule's requirements that pertain to the topics listed above are to provide documentation in Applications for Permit to Drill (APDs) and Applications for Permit to Modify (APMs) to BOEMRE for review and approval prior to initiating well drilling activities, and to use an appropriate selection of best practices for drilling conditions that exist at the site. BOEMRE will have the opportunity then to evaluate whether or not the selection of best practices described in an APD or APM is appropriate for drilling at the site. The rule also requires verification by a third party that best practices are being used, that the proposed combination of best practices is appropriate for the drilling conditions at the site, and that the tests and inspections required by the rule had been done.

***BOP Systems***

The following Interim Rule sections and subsections apply to BOP systems and their testing and maintenance:

**250.198 (h)(63) Documents Incorporated by Reference**

**250.416 (g)(2)(ii) What must I include in the diverter and BOP descriptions?**

**250.442 (d),(e),(f),(g),(l) What are the requirements for a subsea BOP system?**

- 250.449 (j)(1), (k) What additional BOP testing requirements must I meet?**
- 250.451 What must I do in certain situations involving BOP equipment or systems?**
- 250.515 (b)(5), (e) Blowout prevention equipment.**
- 250.516 What are the Blowout preventer system tests, inspection, and maintenance requirements?**
- 250.615 Blowout prevention equipment.**
- 250.616 Blowout preventer system testing, records, and drills**
- 250.617 What are my BOP inspection and maintenance requirements?**

### *BOP System Requirements*

Section 250.442 adds requirements to existing regulations that specify the configuration of annular and pipe BOPs and shear rams to assure adequate capacity, redundancy, and shearing capacity to protect against loss of well control. It also adds requirements for Remotely Operated Vehicle (ROV) intervention capability into a subsea BOP stack to close pipe and shear rams and unlatch the Lower Marine Riser Package (LMRP), as well as requirements for ROV availability at the well site and ROV training. The Impacts of Research Activities states:

*“The use of ROVs has greater potential for disturbing the water column and the benthos than surface-deployed samplers or divers. These vehicles use mechanical propulsion systems which stir up the water column. Further, ROVs can be in the water for long periods of time, use umbilical cords which can disturb the benthos, and are difficult to control, thereby creating the probability of benthos destruction if operated near the bottom.”* (Wharton, 1999).

Research has shown that these disturbances can be reduced,

*“...by using quieter thruster motors and either infrared illumination or low-light cameras.”* (Spanier, 1993).

The section requires autoshear and deadman systems on dynamically positioned rigs to shut in the wellbore automatically in cases of accidents. Other parts of this section address training, management systems, and failsafe control interfaces. This section adds additional protections to those required by existing regulations. It does not eliminate, replace, or jeopardize any of the protections provided under existing regulations. The requirements will therefore help to maintain marine and coastal environmental conditions by improving well control reliability and decreasing the likelihood of occurrence of catastrophic and other oil spills.

### *BOP Inspection and Testing*

The BOP inspection and testing requirements are contained in sections 250.449, 250.516, 250.616, and 250.617. These tests and inspections will assure that ROV intervention capabilities, rams, LMRP disconnect and other components of the BOP stack function correctly. These inspections and test will be done during either the stump or initial test. The stump test is performed on the facility surface before the BOP stack is connected to the wellbore. Mishaps that occur during the stump test could potentially affect the BOP stack, rig personnel safety and the facility itself. The initial test is conducted after the BOP stack is connected to the wellbore prior to drilling the wellbore below the conductor or surface casing so an accidental oil spill

during the test is highly unlikely. For subsea BOP systems, the initial test will take place on the seafloor over the wellbore. Existing BOEMRE environmental review procedures require that the area of the seafloor potentially affected by drilling operations be determined to be free of cultural and biologic resources prior to approving drilling operations, and they require the application of appropriate mitigations if bottom disturbing activities have the potential to affect benthic habitats and features. Therefore the initial test will be done on an area of the seafloor already approved for drilling activity under BOEMRE NEPA review procedures, perhaps with specified mitigations.

Section 250.451 requires the operator to inspect and perform a full pressure test of the BOP stack when the blind–shear rams or casing shear rams are used in an emergency after the situation is fully controlled. This will ensure the integrity of the BOP and that the BOP will fully function and hold pressure after the incident. Tests and inspections will be done after BOEMRE review and concurrence to assure the well is fully under control and the wellbore is adequately sealed prior to removing the BOP stack from the wellhead. The BOP stack must be disconnected from the wellhead and brought to the facility surface for inspection.

In conclusion, no harmful environmental impacts are anticipated as a result of the BOP inspection and testing requirements of the Interim Rule.

### ***Cementing, Casing, and Mechanical Barriers***

Cementing, casing, and mechanical barriers are considered together because they provide for the physical integrity of the wellbore. The following Interim Rule sections and subsections apply to cementing, casing, and mechanical barriers:

#### **250.198(h)(79) Documents Incorporated by Reference.**

#### **250.415 What must my casing and cementing programs include?**

#### **250.420 What well casing and cementing requirements must I meet?**

#### **250.423 What are the requirements for pressure testing casing?**

Cementing and casing protect the physical integrity of the wellbore and prevent uncontrolled flow of fluids into the wellbore. Mechanical barriers are seals achieved by mechanical means that isolate all potential flowing zones below the well head, BOP, or diverter. Section 250.415, “What must my casing and cementing programs include?” requires operators to submit in their APD to BOEMRE an evaluation of the best practices identified in API RP 65-Part 2, Isolating Flow Zones During Well Construction. The operator must also document how they evaluated and applied required best practices for cementing and the factors affecting cementing in the well. Section 250.423 requires operators to perform a pressure test on the casing seal assembly to ensure proper installation of casing or liner in the subsea wellhead or liner hanger, and a negative pressure test to ensure proper installation of casing for the intermediate and production casing strings to ensure that the casing, along with the cement, provides a seal. BOEMRE will review the APD to determine that best practices will be used to perform any of these requirements and that the best practices selected are appropriate for the conditions that exist for the well.

Cementing and installation of casing are ordinary drilling procedures that are described and approved in an operator's APD. The Interim Rule will mandate that these practices be done according to current industry best practices. No harmful environmental impacts are expected to occur from the cementing and casing operations done as a result of the rule because none have been observed in those operations that voluntarily employ this practice.

### ***Well Plugging and Abandonment***

#### **250.1712 What information must I submit before I permanently plug a well or zone?**

#### **250.1721 If I temporarily abandon a well that I plan to re-enter, what must I do?**

These sections add requirements that a professional engineer certify that there are at least two independent tested barriers, including one mechanical barrier, across each flow path during abandonment activities. These certifications will be submitted to BOEMRE with the operator's APM. This section requires certification that well control procedures required by other sections of the rule were applied to a well abandonment operation. No harmful environmental effects would occur as a result of the certification.

### ***Fluid Displacements***

The following Interim Rule section addressed fluid displacements:

#### **250.456 What safe practices must the drilling fluid program follow?**

A new requirement was added that requires approval from BOEMRE before displacing kill-weight drilling fluid from the wellbore. The high density of kill-weight drilling fluid counterbalances flow into the well. The operator must submit the reasons for displacing the kill-weight drilling fluid and provide detailed step-by-step procedures describing how the operator will safely displace these fluids. The step-by-step displacement procedures must address the following:

- (1) Number and type of independent barriers that are in place for each flow path;
- (2) Tests to ensure integrity of independent barriers;
- (3) BOP procedures used while displacing kill weight fluids; and
- (4) Procedures to monitor fluids entering and leaving the wellbore.

These new requirements better ensure that well control is not compromised when displacing kill-weight fluid out of the wellbore, and that the discharge/removal of fluids is done according to appropriate regulations and mitigations. These requirements add an additional review and evaluation by BOEMRE prior to an operator's initiating kill-weight displacements to assure that best practices will be used during the process. Adherence to best practices during these operations will contribute to the improvements in well reliability. This section of the rule does not introduce requirements for new materials, procedures or technologies that could have harmful effects on the environment. The OCS Oil & Gas 2007-2012 Final Environmental Impact Statement addresses drilling fluids and mud and is hereby incorporated by reference (IV-40)

No harmful environmental impacts are expected as a result of this section of the rule.

## Conclusion

The sections of the rule that were analyzed for potential environmental impacts add additional inspections, certifications, and system requirements to improve well control reliability without replacing or jeopardizing the well control protections that exist under current regulations, or without introducing the potential for additional impacts from new technologies, materials and procedures required by the rule. No significant harmful environmental impacts are expected to be associated with promulgation of the Interim Rule.

### 4.2 No Action Alternative

To take “no action” would mean that the revisions to 30 CFR Part 250 would not be incorporated into Federal regulation. The costs to OCS operators that would result from this rule would be avoided if no action is taken. However, if the revisions to 30 CFR Part 250 regulations are not implemented, the intended benefits of improving well control reliability to reduce the likelihood of occurrence of catastrophic and other oil spills will not be realized. Under the No Action Alternative a reduction in risk of additional OCS oil spills affecting coastal and marine environments would not be realized.

The risks of well blowouts, including catastrophic blowouts, under the no action alternative would be greater than the risk under the proposed action. The Deepwater Horizon blowout on April 20, 2010 in the Gulf of Mexico resulted in 11 fatalities and was the largest oil spill in U.S. waters (4.9 million barrels<sup>1</sup>). The following are examples of the most significant of impacts that have occurred or could have occurred from the Deepwater Horizon incident and response activities. Implementing the No Action Alternative will fail to reduce the risk of impacts such as those described below.

*Biological Resources:* Unlike impacts from smaller spills that have occurred in the Gulf of Mexico whose effects are localized and short-term, the Deepwater Horizon spill has demonstrated that a high volume, extended spill resulting from a blowout has the potential to result in impacts that could affect the long-term population status of biological resources over extended areas. In addition, multiple federally and state-listed, threatened and endangered species have been impacted.<sup>2</sup>

*Marine Mammals:* Marine mammals have been observed swimming in oil after spills.<sup>3</sup> Therefore, it cannot be assumed they would avoid the impacted area. The oil could harm marine mammals through several ways, including, but not limited to, the breathing of fumes from the oil (and possibly dispersants), persistence on their skin, and the consumption of oiled food sources. In addition, the large number of response vessels could place marine mammals at a greater risk of vessel collisions, which could cause fatal

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<sup>1</sup> <http://www.deepwaterhorizonresponse.com/go/doc/2931/840475/>

<sup>2</sup> <http://www.fws.gov/home/dhoilspill/pdfs/NewWildlifeOfGulf.pdf>;  
<http://www.fws.gov/home/dhoilspill/pdfs/FedListedBirdsGulf.pdf>

<sup>3</sup> [http://mmc.gov/oil\\_spill/welcome.html](http://mmc.gov/oil_spill/welcome.html)

injuries.

*Sea Turtles:* The majority of the sea turtles impacted by the Deepwater Horizon incident have been Kemp's ridleys, listed as endangered under the ESA.<sup>4</sup> Shoreline oiling and response efforts may affect future population levels and reproduction.<sup>5</sup> Nests could also be disturbed or destroyed by cleanup efforts. Further, sea turtles take many years to reach sexual maturity. Deaths of sub-adult and adult sea turtles may also significantly reduce the future population numbers and viability.

*Coastal and Marine Birds:* The Gulf coastal habitats are essential to the annual cycles of many species of breeding, wintering and migrating waterfowl, wading birds, shorebirds, and songbirds. The spill and response activities could interfere with migration. The worst impacts to oiled birds, or those which have ingested oil with their prey, would be if the oil spill occurs during the nesting season. An oil spill could result in the loss of entire colonies of breeding birds on barrier islands surrounded by oil, along with the loss of all eggs and nestlings.

*Fisheries:* A catastrophic spill has the potential to cause the loss of a year class, effecting future stock populations. In addition to impacts of oil in coastal waters on shellfish, oyster beds have been damaged by freshwater diversions releasing tens of thousands of cubic feet of freshwater per second for months in an effort to keep oil out of the marshes. These actions were taken by the State to protect against perceived greater coastal oil spill impacts that would occur without the freshwater release. These oyster beds could take 2-5 years to recover.<sup>6</sup>

*Coastal Habitats:* During the spill, over 500 miles of shoreline were impacted, varying from light to moderate to heaving oiling. The majority of the Gulf coast is sensitive shoreline types (i.e., sheltered tidal flats; vegetated low banks; salt/brackish-water marshes; freshwater marshes/swamps; scrub-shrub wetlands) that tend to accumulate oil and are difficult to clean causing oil to persist in coastal and estuarine areas.<sup>7</sup> Loss of vegetation could lead to erosion and permanent land loss.

*Terrestrial Mammals:* Critical habitat is specific geographic areas that are essential for the conservation of a threatened or endangered species. With the oiling over 500 miles of shoreline, it is foreseeable that an entire critical habitat for a species with a relatively small critical habitat could have been completely oiled. For example, the endangered Alabama beach mouse (*Peromyscus polionotus ammobates*) only has 1,211 acres of frontal dunes covering just 10 miles of shoreline designated as critical habitat.<sup>8</sup>

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<sup>4</sup> <http://www.nmfs.noaa.gov/pr/health/oilspill.htm>;  
<http://www.deepwaterhorizonresponse.com/go/doctype/2931/55963/&offset=0>

<sup>5</sup> [http://www.deepwaterhorizonresponse.com/posted/2931/Managing\\_Sea\\_Turtles\\_During\\_the\\_Oil\\_Spill\\_Response\\_786623.pdf](http://www.deepwaterhorizonresponse.com/posted/2931/Managing_Sea_Turtles_During_the_Oil_Spill_Response_786623.pdf)

<sup>6</sup> [http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/07/widespread\\_oyster\\_deaths\\_found.html](http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/07/widespread_oyster_deaths_found.html);  
<http://www.wwtv.com/news/gulf-oil-spill/Concerns-Raised-About-Health-Of-Oyster-Beds-Impacted-By-Fresh-Water-Diversions-98867889.html>

<sup>7</sup> <http://www.BOEMRE.gov/5-year/PDFs/PRP2007-2012.pdf>

<sup>8</sup> <http://www.fws.gov/daphne/abm/pdf/ABM-FactSheet-finalCH-1-30-07.pdf>

*Economics:* It is estimated that the economic consequences of the Deepwater Horizon incident will lead to a net loss of just under \$20 billion for the U.S. economy in 2010, which will lower U.S. economic growth in 2010 by roughly 0.1 percent and will lower growth in the most affected Gulf states. For example, the fishing industry, including seafood processing and related wholesale and retail businesses, supports over 200,000 jobs with related economic activity of \$5.5 billion.<sup>9</sup> Other immediate economic impacts include a decline in tourism. Jobs related to cleanup activities would not fully mitigate job losses in the fishing, tourism and oil and gas industries.

*Commercial and Recreational Fishing:* While various (and varied) tests have shown no detectable oil or dispersant odors or flavors, and the results of sensitive chemical analyses have shown concentrations well below the levels of concern (i.e. background levels), the NOAA Fisheries Service closed large portions of the Gulf of Mexico during the spill as a precautionary measure to ensure public safety and assure consumer confidence in Gulf seafood.<sup>10,11</sup> Up to 36.6% of the Gulf of Mexico Exclusive Economic Zone was closed to recreational and commercial fishing at one time.<sup>12</sup> This could represent 50-75% of the Gulf seafood production.<sup>13</sup> Portions of the Gulf state waters were also closed to commercial and recreational fishing.

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<sup>9</sup> <http://www.fas.org/sgp/crs/misc/R41262.pdf>

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<sup>11</sup> <http://sero.nmfs.noaa.gov/ClosureSizeandPercentCoverage.htm>

<sup>12</sup> [http://sero.nmfs.noaa.gov/sf/deepwater\\_horizon/FB\\_Closure%20info\\_Eng.pdf](http://sero.nmfs.noaa.gov/sf/deepwater_horizon/FB_Closure%20info_Eng.pdf)

<sup>13</sup> <http://www.foodsafetynews.com/2010/05/noaa-closes-spill-area-to-fishing/>

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### **The Department of the Interior Mission**

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

### **The Bureau of Ocean Energy Management, Regulation and Enforcement Mission**

As a bureau of the Department of the Interior, the Bureau of Ocean Energy Management, Regulation and Enforcement's (BOEMRE's) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The BOEMRE **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The BOEMRE strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending BOEMRE assistance and expertise to economic development and environmental protection.