

**4310-MR-P**

**DEPARTMENT OF THE INTERIOR**

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

**30 CFR Part 250**

**[Docket ID: BOEM-2010-0034]**

**RIN 1010-AD68**

**Oil and Gas and Sulphur Operations in the Outer Continental Shelf-Increased  
Safety Measures for Energy Development on the Outer Continental Shelf**

**AGENCY:** Bureau of Ocean Energy Management, Regulation and Enforcement,  
(BOEMRE), Interior.

**ACTION:** Interim final rule with request for comments.

**SUMMARY:** This interim final rule implements certain safety measures recommended 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 the Safety Measures Report to identify measures necessary to improve the safety of oil and gas exploration and development on the Outer Continental Shelf in light of the Deepwater Horizon event on April 20, 2010, and resulting oil spill. To implement the practices recommended in the Safety Measures Report, the Bureau of Ocean Energy Management, Regulation and Enforcement is amending drilling regulations related to well control, including: subsea and surface blowout preventers, well casing and cementing, secondary intervention, unplanned disconnects, recordkeeping, well completion, and well plugging.

**DATES: Effective Date:** This rule becomes effective on [INSERT DATE OF

PUBLICATION IN THE FEDERAL REGISTER]. The incorporation by reference of the publication listed in the regulations is approved by the Director of the Federal Register as of [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Submit comments on the interim final rule by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. BOEMRE may not fully consider comments received after this date. Submit comments to the Office of Management and Budget on the information collection burden in this rule by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may submit comments on the interim final rulemaking by any of the following methods. Please use the Regulation Identifier Number (RIN) 1010-AD68 as an identifier in your message. See also Public Availability of Comments under Procedural Matters.

- Federal eRulemaking Portal: <http://www.regulations.gov>. In the entry titled “Enter Keyword or ID,” enter BOEM-2010-0034 then click search. Follow the instructions to submit public comments and view supporting and related materials available for this rulemaking. BOEMRE will post all comments.
- Mail or hand-carry comments to the Department of the Interior; Bureau of Ocean Energy Management, Regulation and Enforcement; Attention: Regulations and Standards Branch (RSB); 381 Elden Street, MS-4024, Herndon, Virginia 20170-4817. Please reference “Increased Safety Measures for Energy Development on the Outer Continental Shelf, 1010–AD68” in your comments and include your name and return address.

- Send comments on the information collection in this rule to: Department of the Interior; Bureau of Ocean Energy Management, Regulation and Enforcement; Attention: Cheryl Blundon; 381 Elden Street, MS-4024; Herndon, Virginia 20170-4817. Please reference Information Collection 1010-0185 in your comment and include your name and address.

**FOR FURTHER INFORMATION CONTACT:** Amy C. White, Office of Offshore Regulatory Programs, Regulations and Standards Branch, Bureau of Ocean Energy Management, Regulation and Enforcement, 703-787-1665, amy.white@boemre.gov.

**SUPPLEMENTARY INFORMATION:**

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**I. Background**

This interim final rule promulgated for the prevention of waste and conservation of natural resources of the Outer Continental Shelf, establishes regulations based on certain recommendations in the May 27, 2010, report from the Secretary of the Interior to the President entitled, “Increased Safety Measures for Energy Development on the Outer

Continental Shelf” (Safety Measures Report). The President directed that the Department of the Interior (DOI) develop this report as a result of the Deepwater Horizon event on April 20, 2010. This event, which involved a blowout of the BP Macondo well and an explosion on the Transocean Deepwater Horizon mobile offshore drilling unit (MODU), resulted in the deaths of 11 workers, an oil spill of national significance, and the sinking of the Deepwater Horizon MODU. On June 2, 2010, the Secretary of the Interior directed the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) (formerly the Minerals Management Service) to adopt the recommendations contained in the Safety Measures Report and to implement them as soon as possible.

The Safety Measures Report recommended a series of steps to improve the safety of offshore oil and gas drilling operations in Federal waters. It outlined a number of specific measures designed to ensure sufficient redundancy in blowout preventers (BOPs), promote well integrity, enhance well control, and facilitate a culture of safety through operational and personnel management.

The Safety Measures Report recommended that certain measures be implemented immediately through a Notice to Lessees and Operators (NTL). It identified other measures as being appropriate to address through an emergency rulemaking process. The Safety Measures Report recognized that other recommendations would require additional review and refinement through technical reviews by the DOI, through information supplied as a result of the numerous investigations into the root causes of the Deepwater Horizon explosion, and through the longer-term recommendations of DOI strike teams and inter-agency work groups. The Safety Measures Report recommended that these other measures be addressed through notice and comment rulemaking, as appropriate.

On June 8, 2010, BOEMRE issued an NTL addressing those recommendations identified in the Safety Measures Report as warranting immediate implementation (NTL No.2010-N05 – Increased Safety Measures for Energy Development on the OCS). This interim final rule clarifies existing regulatory requirements that were addressed by certain portions of NTL No. 2010-N05. This rule incorporates specific details included in 2010-N05 by codifying these into regulations. The rule does not codify the one-time requirements from NTL No. 2010-N05, such as the one-time requirement for recertification of all BOP equipment used in new floating operations, which will be evaluated and considered for future rulemakings as appropriate.

This interim final rule also addresses measures identified in the Safety Measures Report as appropriate for implementation through emergency rulemaking, with certain exceptions discussed later. It also includes other provisions from the Safety Measures Report that BOEMRE considers appropriate for immediate implementation in this interim final rule.

As provided for in the Safety Measures Report, BOEMRE will continue to review other safety measures. These include items that may be appropriate for rulemaking in the near future, as well as measures that will require further study, whether through DOI-led strike teams, inter-agency workgroups, or other means.

The following table provides a summary of the interim final rule requirements, estimated annual costs to implement the requirements, and the operator's ability to comply with the requirements. Additional discussion on all the requirements follows in the remainder of the preamble.

### **Summary of Interim Final Rule Compliance**

<b>Citation and Requirement</b>	<b>Recommendation</b>	<b>Applies to</b>	<b>Operator cost to Implement per Year*</b>	<b>Operator Ability to Comply with Requirement</b>
§ 250.198(a)(3) All documents incorporated by reference “should” and “shall” mean “must”	Based on NTL No. 2010 N05.	All operators		Administrative provision that does not impose compliance times beyond the substantive provisions involved.
§ 250.198(h)(79) Incorporation by Reference of API RP 65 – Part 2 Isolating Potential Flow Zones During Well Construction	Safety Measures Report: II.B.3.7: Enforce Tighter Primary Cementing Practices	All applications for permit to drill (APDs).**		Additional information provision does not impose compliance times beyond the substantive provisions involved.
§ 250.415(f) Written description of how the operator evaluated the best practices included in API RP 65- Part 2. The description must identify mechanical barriers and cementing practices to be used for each casing string.	Safety Measures Report: II.B.3.7: Enforce Tighter Primary Cementing Practices	Submitted with APD. Applies to all APDs.		New engineering requirement. BOEMRE believes that most operators will be able to comply with this requirement with no significant delays*** because this can be completed concurrently with other tasks.
§ 250.416(d) Include schematics of all control systems and control pods.	Safety Measures Report: I.B.5: Secondary Control System Requirement and Guidelines	Submitted with APD. Applies to all APDs.		Information is readily available. Should not delay submission of the APD.
§ 250.416(e) Independent third party verification that the blind-shear rams installed are capable of shearing any drill pipe in the hole.	Safety Measures Report: I.C.7: Develop New Testing Requirements. Also in NTL No. N05.	Submitted with APD. Applies to all APDs.		Because there are multiple engineering firms available to do this work, and because operators have had advance notice of this requirement in both the Safety Measures Report and NTL No. N05, BOEMRE believes that most operators will be able to comply with this requirement with no significant delay
§ 250.416(f) Independent third party verification that subsea BOP is designed for specific equipment on rig and specific well design.	Safety Measures Report: I.B.2: Order BOP Equipment Compatibility Verification for Each Floating Vessel and for Each New Well. Also in NTL No.	Submitted with APD. All APDs for well with subsea BOP stack. Subsea BOP stacks are usually employed in deepwater.	\$1,200,000	

Citation and Requirement	Recommendation	Applies to	Operator cost to Implement per Year*	Operator Ability to Comply with Requirement
	N05.			and provide information in the APD.
§ 250.416(g) Qualification for independent third parties.	Based on NTL No. 2010 N-05.	All APDs.		Related to requirements for independent third party certifications.
§ 250.420(a)(6) Certification by a professional engineer that there are two independent tested barriers and that the casing and cementing design are appropriate	Safety Measure Report: II.B.1.3: New Casing and Cement Design Requirements: Two Independent Barriers. This requirement was also addressed in NTL No. N05.	Submitted with APD. Applies to all APDs.	\$6,000,000	Because there are multiple engineering firms available to do this work and because operators have had advance notice of this requirement in both the Safety Measures Report and NTL No. N05, BOEMRE believes operators will be able to comply with this requirement with no significant delays and provide information in the APD.
§ 250.420(b)(3) Installation of dual mechanical barriers in addition to cement for final casing string.	Safety Measure Report: II.B.1.3: New Casing and Cement Design Requirements: Two Independent Barriers. This requirement was also addressed in NTL No. N05.	Completed during the casing and cementing of the well. It applies to all wells drilled.	\$10,300,000	Completed during the casing and cementing of the well. Compliance with this requirement may minimally increase the time to drill each well.
§ 250.423(b) The operator must perform a pressure test on the casing seal assembly to ensure proper installation of casing or liner. The operator must ensure that the latching mechanisms or lock down mechanisms are engaged upon installation of each casing string or liner.	Safety Measure Report: II.B.2.5: New Casing Installation Procedures. This requirement was also addressed in NTL No. N05.	Complied with after the installation of each casing string or liner for all wells drilled with a subsea BOP stack. It is tested after the installation of the casing or liner.		Because operators had advance notice of this requirement in both the Safety Measures Report and NTL No. N05, BOEMRE believes operators should be complying with this requirement.

<b>Citation and Requirement</b>	<b>Recommendation</b>	<b>Applies to</b>	<b>Operator cost to Implement per Year*</b>	<b>Operator Ability to Comply with Requirement</b>
§ 250.423(c) The operator must perform a negative pressure test to ensure proper casing installation. This test must be performed for the intermediate and production casing strings.	Safety Measure Report: II.B.2.6: Develop Additional Requirements or Guidelines for Casing.	Tested after running the casing. All wells, involves all rigs with surface and subsurface BOPs in all water depths.	\$45,100,000	Compliance with this requirement will increase the time to drill each subsea well resulting in additional costs. BOEMRE estimates several hours of additional drilling time for each well.
§ 250.442(c) § 250.515(e) § 250.615(e) Have a subsea BOP stack equipped with remotely operated vehicle (ROV) intervention capability. At a minimum, the ROV must be capable of closing one set of pipe rams, closing one set of blind-shear rams, and unlatching the lower marine riser package.	Safety Measure Report: I.B.5: Secondary Control System Requirements and Guidelines. This requirement was also addressed in NTL No. N05.	Applies to all subsea BOP stacks.		All rigs should be able to comply with requirement. All rigs currently have ROV intervention capability; approximately 80% of subsea BOP stacks currently have all the specified capabilities. Other 20% are expected to be able to comply promptly.
§ 250.442(c) § 250.515(e) § 250.615(e) Maintain an ROV and have a trained ROV crew on each floating drilling rig on a continuous basis.	Safety Measure Report: I.B.6: New ROV Operating Capabilities; II.A.1: Establish Deepwater Well-Control Procedure Guidelines	Ongoing requirement. All subsea BOP stacks regardless of water depth.		BOEMRE believes all rigs operating on OCS are already in compliance.
§ 250.442(f) § 250.515(e) § 250.615(e) Provide autoshear and deadman systems for dynamically positioned (DP) rigs.	Safety Measure Report: I.B.5: Secondary Control System Requirements and Guidelines	Anytime drilling occurs with subsea BOP stacks on DP rigs.		BOEMRE believes all DP rigs operating on OCS currently comply with this requirement.
§ 250.442(e) § 250.515(e) § 250.615(e) Establish minimum requirements for personnel authorized to operate critical BOP equipment.	Safety Measure Report: II.A.1: Establish Deepwater Well-Control Procedure Guidelines	Ongoing requirement. Applies to all personnel that operate subsea BOP stacks. Majority of drilling rigs		Requires trained ROV crew; for rigs not already in compliance, additional training or hiring of new crew may be necessary. Additional training



Citation and Requirement	Recommendation	Applies to	Operator cost to Implement per Year*	Operator Ability to Comply with Requirement
		that use subsea BOP stacks operate in deepwater.		could take days to weeks, depending upon how well existing crews are trained. However, BOEMRE believes no rigs should be operating without adequately trained personnel.
§ 250.446(a) § 250.516(h) § 250.516(g) § 250.617 Require documentation of BOP inspections and maintenance according to API RP 53.	Safety Measure Report: I.B.5: Secondary Control System Requirements and Guidelines	Ongoing requirement. All BOP stacks. All water depths.		All rigs should be able to comply with requirement.
§ 250.449(j) § 250.516(d)(8) § 250.616(h)(1) Test all ROV intervention functions on the subsea BOP stack during the stump test. Test at least one set of rams during the initial test on the seafloor.	Safety Measure Report: I.B.5: Secondary Control System Requirements and Guidelines; I.C.7: Develop New Testing Requirements.	During the stump test and initial test on the seafloor. All subsea BOP stacks. All water depths.	\$118,200,000	All rigs should be able to comply with requirement. This requirement not expected to result in significant delay. Compliance with this requirement will slightly increase the time to drill each deepwater well drilled with a subsea BOP, resulting in additional costs.
§ 250.449(k) § 250.516(d)(9) § 250.616(h)(2) Function test autoshear and deadman systems on the subsea BOP stack during the stump test. Test the deadman system during the initial test on the seafloor.	Safety Measure Report: I.B.5: Secondary Control System Requirements and Guidelines; I.C.7: Develop New Testing Requirements			
§ 250.451(i) If the blind-shear or casing shear rams are activated in a well control situation, the BOP must be retrieved and fully inspected and tested	Safety Measure Report: I.C.7: Develop New Testing Requirements. This requirement was also addressed in NTL No. N05.	Emergency activation of blind or casing shear rams.	\$2,600,000	Compliance with this requirement will increase drilling costs when such an emergency occurs.
§ 250.456(j) Before displacing kill-weight drilling fluid from the wellbore, the operator must receive approval from the District	Safety Measure Report: II.A.2: New Fluid Displacement Procedures	Submit with APD or application for permit to modify (APM). All		New requirement. Operator should be able to provide this information in APD or APM without significant

Citation and Requirement	Recommendation	Applies to	Operator cost to Implement per Year*	Operator Ability to Comply with Requirement
<p>Manager. 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.</p>		<p>wells where the operator wants to displace kill-weight fluids. This could occur on all rigs that use either a surface or subsurface BOP stack. Could occur with all water depths.</p>		<p>delay.</p>
<p>Subpart O, §§ 250.1500-250.1510 Requires that rig personnel are trained in deepwater well control and the specific duties, equipment, and techniques associated with deepwater drilling.</p>	<p>Safety Measure Report: II.A.1: Establish Deepwater Well-Control Procedure Guidelines</p>	<p>All wells drilled with subsea BOP stack.</p>		<p>BOEMRE believes that the majority of operators have addressed this requirement. There should not be any delay for this requirement.</p>
<p>§ 250.1712(g) § 250.1721(h) Certification by a professional engineer of the well abandonment design and procedures; that there will be at least two independent tested barriers, including one mechanical barrier, across each flow path during abandonment activities; and that the plug meets the requirements in the table in § 250.1715</p>	<p>Safety Measure Report: II.B.1.3: New Casing and Cement Design Requirements: Two Independent Tested Barriers</p>	<p>Submitted with APM. All abandonment operations regardless of BOP type or water depth.</p>		<p>Operator should be able to comply with no significant delay and provide information in application for permit to modify (APM). Estimate that this could take an operator as much as several days to comply with new requirement. Depends on operator's internal review process.</p>

\* Costs that were not provided did not add a meaningful value in comparison of the cost of drilling a well.

\*\* All APDs means all wells drilled with a surface BOP and all wells drilled with a subsurface BOP. Includes all water depths.

\*\*\* Requirements noted as “no significant delay” are anticipated to require no more than 1 week to achieve compliance. While individually each activity could take a day and possibly up to 5 days to complete, it is anticipated that companies will build this into their schedules with no resulting overall delay.

### Total Estimates of Costs and Benefits

Total Estimated Annual Compliance Costs	\$183.1 million
Total Estimated Annual Avoided Social Costs (Benefits)	\$631.4 million – B*

\*DOI estimated the cost of a hypothetical spill in the future at \$16.3 billion, and also estimated the baseline likelihood of a catastrophic blowout event and spill occurring, based on historical trends and the number of expected future wells, to be once every 26 years. These estimates are necessarily uncertain, and are discussed in more detail in the RIA. Combining the baseline likelihood of occurrence with the cost of a hypothetical spill implies that the expected annualized spill cost is about \$631 million. This rulemaking will not reduce the probability of a future spill to zero; therefore, “B” in the table above represents the adjustment in annual avoided social costs expected from this rulemaking based on the non-zero remaining probability of a spill after this rule is put into place. Thus, the difference between the avoided costs with and without their rule represents its expected benefits. This remaining probability is uncertain. For example, to balance the \$183 million annual cost imposed by these regulations with the expected benefits, the reliability of the well control system needs to improve by about 29 percent (\$183 million / \$631 million). Although we have found no studies that evaluate the degree of actual improvement that could be expected from dual mechanical barriers, negative pressure tests, and a seafloor ROV function test, we believe it reasonable to anticipate that such measures will increase the reliability of the well control systems, and therefore that the benefits of this rulemaking justify the costs.

## II. Request for Comments on Interim Final Rule and Effective Date

This is an interim final rulemaking with request for comments; it is effective immediately upon publication. The Administrative Procedure Act (APA) requires that an agency publish a proposed rule in the Federal Register with notice and an opportunity for public comment, unless the agency, for good cause, finds that providing notice and soliciting comments in advance of promulgating the rule would be impracticable, unnecessary, or contrary to the public interest (5 U.S.C. 553(b)). BOEMRE determined that there is good cause for publishing this interim final rule without prior notice and comment based on its findings, consistent with preliminary information that is available as a result of investigations into the Deepwater Horizon event, that certain equipment, systems, and improved practices are immediately necessary for the safety of offshore oil and gas drilling operations on the Outer Continental Shelf (OCS), and that these improved drilling practices are either not addressed or not sufficiently detailed by current regulations. Immediate imposition of the requirements contained in this interim final rule is necessary because BOEMRE views strict adherence to improved safety practices set

forth herein as necessary to achieving safer conditions that, together with other wild well control and oil spill response capabilities, will allow it to permit future OCS drilling operations. Following notice and comment procedures would be impracticable in these circumstances.

Furthermore, following notice and comment procedures would be contrary to the public interest because the delay in implementation of this interim final rule could result in harm to public safety and the environment. Failure to adhere to the safety practices required by this interim final rule increases the risk of a blowout and subsequent oil spill, with serious consequences to the health and safety of workers and the environment.

As discussed in Section 5, “Justification for the Interim Final Rulemaking,” while investigation and information-gathering into the Deepwater Horizon blowout and spill continues, preliminary evidence suggests problems with the Macondo well’s line of defense, which could include blowout preventer (BOP) systems, casing and cementing programs, and fluid displacement procedures. Evidence further suggests that it is unlikely that these problems are unique to the Deepwater Horizon event; for example, most BOPs used in drilling on the OCS are of similar design and are produced by a limited number of manufacturers. The interim final rule’s provisions thus incorporate targeted measures to promote the integrity of the well and enhance well control, including provisions specifically identified by the Safety Measures Report as warranting immediate implementation. For example, the requirement that operators have all well casing designs and cementing systems/procedures certified by a Professional Engineer.

Similarly, BOEMRE determined that the immediate necessity for improved equipment, systems, and practices also provides good cause to impose an immediate

effective date. The APA requires an agency to publish a rule not less than 30 days before its effective date, except as otherwise provided by the agency for good cause found and published with the rule (5 U.S.C. 553(d)(3)). Just as BOEMRE found that providing notice and an opportunity to comment is impracticable and contrary to the public interest, BOEMRE finds that a 30-day delay after publication of this interim final rule compromises the safety of offshore oil and gas drilling. To the extent that the 30-day period is intended to allow regulated parties to adjust to new requirements, information gathered by BOEMRE in advance of this rulemaking indicates that the oil and gas industry is well aware of the general provisions in this interim final rule. Most of the provisions in the rule were identified in the Safety Measures Report, and industry is already working to implement them.

We note that in developing the Safety Measures Report on which this interim final rule is based, the Department consulted with a wide range of experts in state and Federal governments, academic institutions, and industry and advocacy organizations. In addition, the draft recommendations of the Safety Measure Report were peer reviewed by seven experts identified by the National Academy of Engineering (NAE). Further explanation of the justification for this interim final rulemaking is provided in section V, “Justification for Interim Final Rulemaking.”

While BOEMRE will not solicit comments before the effective date, BOEMRE will accept and consider public comments on this rule that are submitted within 60 days of its publication in the Federal Register. After reviewing the public comments, BOEMRE will publish a notice in the Federal Register that will respond to comments and will either:

1. confirm this rule as a final rule with no additional changes, or

2. issue a revised final rule with modifications, based on public comments.

### **III. Overview of Requirements in the Interim Final Rule**

As recommended in the Safety Measures Report, this interim final rule imposes a number of prescriptive, near-term requirements. Other longer-term safety measures and performance-based standards recommended in the Safety Measures Report will be analyzed for implementation in future rulemakings. Information from the many investigations and other information sources will also be analyzed and considered in future rulemakings. In developing the Safety Measures Report on which this interim final rule is based, the Department consulted with experts in state and Federal government, academic institutions, and industry and advocacy organizations. In addition, draft recommendations were peer reviewed by seven experts identified by the NAE.

The primary purpose of this interim final rule is to clarify and incorporate safeguards that will decrease the likelihood of a blowout during drilling operations on the OCS. The safeguards address well bore integrity and well control equipment, and this interim final rule focuses on those two overarching issues. This rule will therefore promulgate OCS-wide provisions that will:

1. Establish new casing installation requirements,
2. Establish new cementing requirements (incorporate American Petroleum Institute (API) Recommended Practice (RP) 65—Part 2, Isolating Potential Flow Zones During Well Construction),
3. Require independent third party verification of blind-shear ram capability,
4. Require independent third party verification of subsea BOP stack compatibility,
5. Require new casing and cementing integrity tests,

6. Establish new requirements for subsea secondary BOP intervention,
7. Require function testing for subsea secondary BOP intervention,
8. Require documentation for BOP inspections and maintenance,
9. Require a Registered Professional Engineer to certify casing and cementing requirements, and
10. Establish new requirements for specific well control training to include deepwater operations.

As stated, the intent of this interim final rule is to improve safety related to both well bore integrity and well control equipment.

Well bore integrity provides the first line of defense against a blowout by preventing a loss of well control. Well bore integrity includes appropriate use of drilling fluids and the casing and cementing program. Drilling fluids and the casing and cementing program are used to balance the pressure in the borehole against the fluid pressure of the formation, preventing an uncontrolled influx of fluid into the wellbore. The specific provisions in this rule that address well bore integrity are:

1. Incorporating by reference API RP 65—Part 2, Isolating Potential Flow Zones During Well Construction;
2. Submission of certification by a Registered Professional Engineer that the casing and cementing program is appropriate for the purpose for which it is intended under expected wellbore pressure;
3. Requirements for two independent test barriers across each flow path during well completion activities (also certified by a Registered Professional Engineer);
4. Ensuring proper installation of the casing or liner in the subsea wellhead or liner

hanger;

5. Approval from the District Manager before displacing kill-weight drilling fluid;

and

6. Deepwater well control training for rig personnel.

Well control equipment is the general term for the technologies used to control a well by mechanical means in the event that other well control mechanisms fail. Well control equipment includes control systems that activate the BOPs, either through a control panel on the drilling rig or through Remotely Operated Vehicles (ROVs) that directly interface with the subsea BOP to activate the appropriate rams. The provisions in this rule that address well control equipment include:

1. Submission of documentation and schematics for all control systems;

2. A requirement for independent third party verification that the blind-shear rams are capable of cutting any drill pipe in the hole under maximum anticipated surface pressure (MASP);

3. A requirement for a subsea BOP stack equipped with ROV intervention capability. At a minimum, the ROV must be capable of closing one set of pipe rams, closing one set of blind-shear rams, and unlatching the Lower Marine Riser Package (LMRP);

4. A requirement for maintaining an ROV and having a trained ROV crew on each floating drilling rig on a continuous basis;

5. A requirement for autoshear and deadman systems for dynamically positioned rigs;

6. Establishment of minimum requirements for personnel authorized to operate critical BOP equipment;



7. A requirement for documentation of subsea BOP inspections and maintenance according to API RP 53, Recommended Practices for Blowout Prevention Equipment Systems for Drilling Wells;

8. Required testing of all ROV intervention functions on the subsea BOP stack during the stump test and testing at least one set of rams during the initial test on the seafloor;

9. Required function testing of autoshear and deadman systems on the subsea BOP stack during the stump test and testing the deadman system during the initial test on the seafloor; and

10. Required pressure testing if any shear rams are used in an emergency.

The following table shows where recommendations from the Safety Measures Report are implemented in the interim final rule.

<b>Safety Measures Report Recommendation</b>	<b>Interim Final Rule Citation</b>
	<b>Subpart A – General</b>
II.B.3.7: Enforce Tighter Primary Cementing Practices.	§ 250.198 Documents incorporated by reference.
	<b>Subpart D- Oil and Gas Drilling Operations</b>
II.B.3.7: Enforce Tighter Primary Cementing Practices.	§ 250.415 What must my casing and cementing programs include?
I.A.2: Order BOP Equipment Compatibility Verification for Each Floating Vessel and for Each New Well. I.B.5: Secondary Control System Requirement and Guidelines. I.C.7: Develop New Testing Requirements.	§ 250.416 What must I include in the diverter and BOP descriptions?
II.B.1.3: New Casing and Cement Design Requirements: Two Independent Barriers. I.C.7: Develop New Testing Requirements.	§ 250.418 What additional information must I submit with my APD?
II.B.1.3: New Casing and Cement Design Requirements: Two Independent Barriers.	§ 250.420 What well casing and cementing requirements must I meet?
II.B.1.3: New Casing and Cement Design Requirements: Two Independent Barriers. II.B.2.5: New Casing Installation Procedures. II.B.2.6: Develop Additional Requirements or Guidelines for Casing Installation.	§ 250.423 What are the requirements for pressure testing casing?
I.B.5: Secondary Control System Requirements and Guidelines. I.B.6: New ROV Operating Capabilities. II.A.1: Establish Deepwater Well-Control Procedure	§ 250.442 What are the requirements for a subsea BOP system?

<b>Safety Measures Report Recommendation</b>	<b>Interim Final Rule Citation</b>
Guidelines.	
I.B.5: Secondary Control System Requirements and Guidelines.	§ 250.446 What are the BOP maintenance and inspection requirements?
I.B.5: Secondary Control System Requirements and Guidelines. I.C.7: Develop New Testing Requirements.	§ 250.449 What additional BOP testing requirements must I meet?
I.C.7: Develop New Testing Requirements.	§ 250.451 What must I do in certain situations involving BOP equipment or systems?
II.A.2: New Fluid Displacement Procedures.	§ 250.456 What safe practices must the drilling fluid program follow?
	<b>Subpart E – Oil and Gas Well-Completion Operations</b>
I.B.5: Secondary Control System Requirements and Guidelines. I.B.6: New ROV Operating Capabilities. II.A.1: Establish Deepwater Well-Control Procedure Guidelines.	§ 250.515 Blowout prevention equipment.
I.B.5: Secondary Control System Requirements and Guidelines and recommendation. I.C.7: Develop New Testing Requirements.	§ 250.516 Blowout preventer system tests, inspections, and maintenance.
	<b>Subpart F – Oil and Gas Well-Workover Operations</b>
I.B.5: Secondary Control System Requirements and Guidelines. I.B.6: New ROV Operating Capabilities. II.A.1: Establish Deepwater Well-Control Procedure Guidelines.	§ 250.615 Blowout prevention equipment.
I.B.5: Secondary Control System Requirements and Guidelines and recommendation. I.C.7: Develop New Testing Requirements.	§ 250.616 Blowout preventer system testing, records, and drills.
I.B.5: Secondary Control System Requirements and Guidelines and recommendation. I.C.7: Develop New Testing Requirements.	§ 250.617 What are my BOP inspection and maintenance requirements?
	<b>Subpart O – Well Control and Production Safety Training</b>
II.A.1: Establish Deepwater Well-Control Procedure Guidelines.	§§ 250.1500-250.1510. § 250.1503 What are my general responsibilities for training?
	<b>Subpart Q – Decommissioning Activities</b>
II.B.1.3: New Casing and Cement Design Requirements: Two Independent Tested Barriers.	§ 250.1712 What information must I submit before I permanently plug a well or zone?
II.B.1.3: New Casing and Cement Design Requirements: Two Independent Tested Barriers.	§ 250.1721 If I temporarily abandon a well that I plan to re-enter, what must I do?

#### **IV. Source of Specific Provisions Addressed in the Interim Final Rule**

This interim final rule clarifies existing regulatory requirements that were addressed by certain portions of NTL No. 2010-N05 by codifying the specific details into regulations. It also addresses items in the Safety Measures Report either identified as

appropriate for implementation through emergency rulemaking, or which BOEMRE has determined will significantly increase OCS drilling safety and with which operators can readily comply. The following provides an explanation of each of these sources and provisions.

### **Emergency Rulemaking Recommendations from Safety Measures Report**

The Safety Measures Report identified four items for emergency rulemaking:

1. Develop secondary control system requirements;
2. Establish new blind-shear ram redundancy requirements;
3. Establish new deepwater well control procedure requirements; and
4. Adopt safety case requirements for floating drilling operations on the OCS.

Of these four items, this interim final rule addresses: 1. secondary control system requirements; and 3. deepwater well control procedure requirements. This interim final rule does not include: 2. new blind-shear ram redundancy requirements; and 4. safety case requirements for floating drilling operations on the OCS.

BOEMRE determined that, while new blind-shear ram redundancy requirements are important to offshore drilling safety, they are not appropriate for inclusion in this interim final rule. Installation of a second set of blind-shear rams will require major modifications to the BOP stack for most rigs on the OCS. Compliance with such a requirement is likely to take operators from 1 year to 18 months. Inclusion of a requirement that will necessitate a period of 1 year or more to comply is not appropriate for an interim final rule, the purpose of which is to have immediate effect. Given the necessary compliance periods, BOEMRE believes there will be sufficient opportunity to proceed through a notice and comment rulemaking. Operators should be aware,

however, that BOEMRE intends to promptly initiate a notice and comment rulemaking process to address this issue. Specifically, operators should be aware that BOEMRE is considering regulations to require the installation of a second set of blind-shear rams, appropriately spaced to ensure that at least one blind-shear ram cuts any drill pipe in the hole and seals the wellbore at any time. Operators should also be aware that BOEMRE is likewise considering requiring, through a notice and comment rulemaking, a set of casing shear rams capable of shearing any casing in the hole.

This interim final rule addresses both new well bore integrity requirements and well control equipment requirements. The well bore integrity provisions impose requirements for casing and cementing design and installation, tighter cementing practices, the displacement of kill-weight fluids, and testing of independent well barriers. These new requirements ensure that there are additional physical barriers in the well to prevent oil and gas from escaping into the environment. These new requirements related to well bore integrity will considerably decrease the likelihood of a loss of well control. The well control equipment requirements in this interim final rule will help ensure the BOPs will operate in the event of an emergency and that the ROVs are capable of activating the BOPs. Together, these new requirements will help decrease the urgency of immediately requiring blind-shear ram redundancy on BOPs, and have factored into BOEMRE's decision to address such requirements through a standard rulemaking process.

BOEMRE also determined not to include safety case requirements for floating drilling operations in this interim final rule. A safety case is a comprehensive, structured documentation system to reduce operating risks for offshore drilling. A drilling safety case would establish risk assessment and mitigation processes to manage a drilling

contractor’s controls related to health, safety, and environmental aspects of operations. BOEMRE is evaluating how a drilling safety case should be most appropriately integrated with an overall Safety and Environmental Management System (SEMS) approach, which BOEMRE may implement through a separate rulemaking process. As directed in the Safety Measures Report, BOEMRE will work with offshore operators and drilling contractors, appropriate government agencies, and other appropriate stakeholders to consider the type of well construction interfacing document that will best connect the requirements of a safety case to existing well design and construction documents. BOEMRE therefore intends to pursue adoption of appropriate safety case requirements through a separate rulemaking process once the necessary analyses have been completed.

**Requirements from NTL No. 2010-N05**

Of the requirements in this interim final rule, the following table clarifies existing regulations by codifying provisions of NTL No. 2010-N05:

<b>NTL No. 2010-N05 Provision</b>	<b>Interim Final Rule Citations</b>
Documentation that the BOP has been maintained according to the regulations at § 250.446(a), maintain these records and make them available upon request (safety report rec. I.A.1).	§ 250.446 What are the BOP maintenance and inspection requirements? § 250.516 Blowout preventer system tests, inspections, and maintenance. § 250.617 What are my BOP inspection and maintenance requirements?
Independent third party verification that the BOP stack is designed for the specific equipment on the rig and compatible with the specific well location, well design, and well execution plan; that the BOP stack has not been compromised or damaged from previous service; and that the BOP stack will operate in the conditions in which it will be used (safety report rec. I.A.2).	§ 250.416 What must I include in the diverter and BOP descriptions?
Secondary control system with ROV intervention capabilities, including the ability to close one set of blind-shear rams and one set of pipe rams and unlatch the LMRP (safety report rec. I.B.5).	§ 250.442 What are the requirements for a subsea BOP system? § 250.515 Blowout prevention equipment. § 250.615 Blowout prevention equipment.
Emergency shut-in system in the event that you lose power to the BOP stack, have an unplanned disconnection of the riser from the BOP stack, or experience another emergency situation (safety report rec. I.B.5).	§ 250.442 What are the requirements for a subsea BOP system? § 250.515 Blowout prevention equipment. § 250.615 Blowout prevention equipment.

NTL No. 2010-N05 Provision	Interim Final Rule Citations
Function test the hot stabs that would be used to interface with the ROV intervention panel during the stump test (safety report rec. I.B.6).	§ 250.449 What additional BOP testing requirements must I meet? § 250.516 Blowout preventer system tests, inspections, and maintenance. § 250.616 Blowout preventer system testing, records, and drills.
Independent third party verification that provides sufficient information showing that the blind-shear rams installed in the BOP stack are capable of shearing the drill pipe in the hole under maximum anticipated surface pressures (safety report rec. I.C.7).	§ 250.416 What must I include in the diverter and BOP descriptions?
If the blind-shear rams or casing shear rams are activated in a well control situation in which pipe or casing was sheared, operators must inspect and test the BOP stack and its components, after the situation is fully controlled (safety report rec. I.C.7).	§ 250.451 What must I do in certain situations involving BOP equipment or systems?
Have all well casing designs and cementing program/procedures certified by a Registered Professional Engineer, verifying the casing design is appropriate for the purpose for which it is intended under expected wellbore conditions (safety report rec. II.B.3).	§ 250.420 What well casing and cementing requirements must I meet? § 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?

Certain measures in NTL No. 2010-N05 are not included in this interim final rule.

These are:

1. Verify compliance with existing BOEMRE regulations and with the BOEMRE/US Coast Guard National Safety Alert (safety report rec. III.A.1).
2. Submit BOP and well control system configuration information for a drilling rig that was being used on May 27, 2010 (safety report rec. I.C.8).
3. Operator must submit the relevant information required in NTL No. 2010-N05 prior to commencing operations if the operator had an Application for Permit to Drill (APD) or Application for Permit to Modify (APM) that was previously approved but drilling had not commenced as of May 27, 2010, and operator may not commence drilling without BOEMRE approval (general requirement for NTL not specified in Safety Measures Report).

## **Other Provisions from the Safety Measures Report in this Interim Final Rule**

The following provisions in this interim final rule are not covered in existing NTL No. 2010-N05 but are identified in the Safety Measures Report as being appropriate to implement either immediately or through an emergency rulemaking:

<b>Safety Measures Report Provision</b>	<b>Interim Final Rule Citations</b>
Establish deepwater well control procedure guidelines (safety report rec. II.A.1).	§ 250.442 What are the requirements for a subsea BOP system? § 250.515 Blowout prevention equipment. § 250.615 Blowout prevention equipment. §§ 250.1500 through 250.1510 Subpart O-Well Control and Production Safety Training.
Establish new fluid displacement procedures (safety report rec. II.A.2).	§ 250.456 What safe practices must the drilling fluid program follow?
Develop additional requirements or guidelines for casing installation (safety report rec. II.B.2.6).	§ 250.423 What are the requirements for pressure testing casing?

BOEMRE has also included the following provision in this interim final rule from the Safety Measures Report:

<b>Safety Measures Report Provision</b>	<b>Interim Final Rule</b>
Enforce tighter primary cementing practices (safety report rec.II.B.3.7)	§ 250.415 What must my casing and cementing programs include?

This provision is recommended in the Safety Measures Report, although it is not specifically identified as requiring implementation immediately or through emergency rulemaking (this provision was also not addressed in NTL No. 2010-N05). BOEMRE has nonetheless determined that it is appropriate for inclusion in this interim final rule because it is consistent with the intent of the recommendations in the Safety Measures Report. Tighter cementing practices will increase the safety of offshore oil and gas drilling operations by improving cementing practices; they also will support the other requirements in this interim final rule.

## **V. Justification for Interim Final Rulemaking**

Pursuant to the Outer Continental Shelf Lands Act (OCSLA), the Secretary has an affirmative obligation to ensure that drilling operations undertaken on the OCS are

conducted in a manner that is safe for the human, marine, and coastal environment (43 U.S.C. 1332(6), 1334(a), 1347, and 1348; and 30 CFR 250.106). The April 20, 2010, blowout of the BP Macondo well and the explosion on the Deepwater Horizon killed 11 workers and resulted in the Nation's largest oil spill ever, with substantial environmental and economic impacts.

On May 28, 2010, the Secretary ordered the suspension of certain oil and gas drilling operations in deepwater (greater than 500 feet). On July 12, 2010, the Secretary rescinded that order and replaced it with a new decision ordering the suspension in the Gulf of Mexico (GOM) and Pacific regions of the drilling of wells using subsea BOPs or surface BOPs on a floating facility, with certain exceptions for intervention wells, injection and disposal wells, abandonments, completions, and workovers. This suspension order applies by its terms until November 30, 2010, although the order notes that it could be lifted earlier than that date.

As mentioned previously, on April 30, 2010, the President also directed the Secretary to conduct a thorough review of the Deepwater Horizon event and to report within 30 days on additional measures needed to improve the safety of oil and gas operations on the OCS. On May 27, 2010, the Secretary delivered the Safety Measures Report to the President. This Safety Measures Report incorporated recommendations from BOEMRE, as well as from a wide range of experts from government, academia, and industry. In developing the Safety Measures Report on which this interim final rule is based, the Department consulted with a wide range of experts in state and Federal government, academic institutions, and industry and advocacy organizations. In addition, draft recommendations were peer reviewed by seven experts identified by the NAE.



Numerous investigations are ongoing, and the precise causes of the well blowout and explosion are not fully known; however, the fact that a blowout occurred clearly indicates problems with the well's line of defense, which could include BOP systems, casing and cementing programs, and fluid displacement procedures. Accordingly, it is not necessary to await certainty regarding the cause of the blowout before promulgating this interim final rule.

Circumstances suggest that, while a blowout and spill of this magnitude have not occurred before on the OCS, it is unlikely that the problems are unique to the Deepwater Horizon and BP's Macondo well. As noted in the July 12, 2010, decision of the Secretary to suspend certain offshore permitting and drilling activities, most BOPs used in drilling on the OCS are of similar design and are produced by a limited number of manufacturers. Furthermore, the BOPs for the relief wells drilled to intercept the Macondo well encountered unexpected performance problems, initially failing to pass new testing procedures developed in response to the Safety Measures Report, including failure of the deadman and autoshear functions. These multiple failures raise red flags as to the reliability of BOPs to adequately safeguard the lives of workers and protect the environment from oil spills in response to a large blowout. They also suggest the need to review regulations pertaining to well casing and design, the other area of likely failure in the Deepwater Horizon event.

Even without the full results of the pending investigations, the obvious failures of well intervention and blowout containment systems demonstrate that previous regulatory assumptions concerning their reliability are inaccurate. The importance of these systems in preventing catastrophic blowouts and oil spills indicate that genuine harm could result

from delay and lead BOEMRE to conclude that immediate regulations are needed to better ensure the reliability of these systems, and to protect the lives of workers, human health, and the environment.

This interim final rule therefore, specifically addresses measures that will increase the safety of these systems. It imposes requirements to give greater certainty that casing and cement design and fluid displacement are adequate for well bore integrity, and to enhance the reliability of well control equipment.

The casing and cementing program and fluid displacement procedures are the first line of defense in preventing a loss of well control that could lead to a blowout. Casing and cement and drilling fluids are used to ensure the fluids in a formation do not enter the wellbore during drilling and completion operations. When a well is completed and production begins, the casing and cement continue to prevent uncontrolled flow of fluids into the wellbore. The integrity of the casing and cement are critical to proper well control. While the extent to which cementing and casing failures contributed to the Macondo blowout is not yet fully known, preliminary information suggests that the operator may have failed to follow best industry cementing and casing installation practices. The current regulations contain general cementing and casing requirements, but they do not specifically address best cementing and casing installation practices. This rulemaking will provide greater assurance that all operators will follow these safer practices, reducing the risk of a loss of well control.

This interim final rule also strengthens requirements for BOPs. In the event of a loss of well control, rig operators use the BOPs to regain control of the well. This is done by closing the various rams on the BOP stack, which shut off the flow of formation fluids to

the surface. Secondary well control system requirements (i.e., ROV intervention capabilities and emergency back-up BOP control systems) ensure that rig operators are able to activate various BOP rams in the event the control system on the rig fails (e.g., loss of power). Requirements in this interim final rule impose new standards to enhance BOP reliability, thereby lessening the possibility of failures that could lead to an uncontrolled blowout and spill with potentially catastrophic consequences for workers and the environment.

Given the Deepwater Horizon blowout and resulting spill, and because of the potential for grave harm to workers and the human, marine, and coastal environment from any additional events, BOEMRE concludes that existing regulations must be strengthened to more fully protect offshore workers, the environment, and the public, and that this situation justifies immediate imposition of the requirements of this interim final rule.

This interim final rule applies to ongoing operations not covered by the Secretary's July 12, 2010, suspension decision in addition to those operations that were suspended by that decision. Immediate imposition of the requirements of this rule is necessary for both ongoing and suspended operations to ensure that all operations proceed in a more safe and reliable fashion in protection of human health and the environment. The July 12, 2010, suspension expires by its terms on November 30, 2010, and it could be lifted earlier. A standard APA notice and comment rulemaking process would place the effective date of these measures beyond the expiration date of the suspension, which would mean that these operations could resume without the benefit of the new safety measures being in place. Therefore, BOEMRE believes that the delay associated with

notice and comment has the potential to harm worker and public health and safety and the environment, and further justifies the immediate implementation of this interim final rule to all OCS drilling operations. To act otherwise has the potential to risk worker and environmental protection with inadequate regulatory coverage.

BOEMRE is cognizant of the fact that the Secretary has the ability to extend the suspension of operations covered by his July 12, 2010, decision, or to apply the suspension to additional operations on the OCS. Immediate application of the safety measures in this interim final rule, however, will improve the reliability of well control systems, thereby allowing all oil and gas operations on the OCS to proceed in a more safe and environmentally sound manner.

BOEMRE believes that much of the oil and gas industry is already well informed of the general provisions in this interim final rule, most of which were identified in the Safety Measures Report. Information gathered by BOEMRE in advance of this rulemaking indicates that BOP equipment manufacturers, drilling contractors, and operators are already working to address the recommendations. Establishing these requirements via an interim final rule will allow these entities to make informed financial and operational decisions earlier.

As previously noted, these regulations were developed without the benefit of the conclusive findings from the ongoing investigations into the root causes of the explosions and fire on the Deepwater Horizon. In the future, based on the comments we receive on this rule and the additional findings of ongoing investigations, BOEMRE may issue additional regulations or amendments to these regulations that will be intended to further increase the safety of offshore oil and gas operations.

**VI. Section-By-Section Discussion of Requirements in the Interim Final Rule**  
**Documents incorporated by reference (§ 250.198)**

**Code of Federal Regulations, Title 30 -- MINERAL RESOURCES**

BOEMRE is revising the title of Chapter II to, “CHAPTER II -- BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION AND ENFORCEMENT, DEPARTMENT OF THE INTERIOR.” On June 18, 2010, the Secretary of the Interior changed the name of the Minerals Management Service (MMS) to the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE). This rule updates the heading of Chapter II in Title 30, Volume 2, of the Code of Federal Regulations to reflect this change.

Paragraph (a)(3) was added to clarify that the documents incorporated by reference into the regulations are requirements. In the National Technology Transfer and Advancement Act of 1995, Congress directed Federal agencies to use technical standards that are developed or adopted by voluntary consensus standards bodies. In § 250.198, BOEMRE incorporates by reference many consensus technical standards including recommended practices, code requirements, and specifications. The effect of incorporating these standards into Federal regulations is confirmed in regulations issued by the Office of the Federal Register (1 CFR 51.9(b)), which requires agencies to inform the user that an incorporated publication is a requirement.

When BOEMRE incorporates a document by reference, any recommendations in the document will be interpreted as requirements, unless otherwise specified. For example, this section incorporates API documents that recommend certain actions using the word should. In the Foreword to its recommended practices, API explains that the word shall

indicates that the recommended practice has universal applicability to the specific activity, while the word should denotes a recommended practice where a safe comparable alternative practice is available. Despite this explanation, for API documents incorporated by reference into this part, the terms should and shall mean must. For example, API RP 53, sections 17.10, 17.11, 17.12, 18.10, 18.11, and 18.12, are currently incorporated by reference in § 250.446(a). By adding paragraph (a)(3) to this interim final rule, which explains that the words should and shall both mean must, BOEMRE clarifies to the operators that they must follow all of the provisions of these API RP 53 sections.

Paragraph (h)(79) was added to this section and incorporates by reference API RP 65–Part 2, Isolating Potential Flow Zones During Well Construction, First Edition, May 2010. This document contains best practices for zone isolation in wells to prevent annular pressure and/or flow through or past pressure-containment barriers that are installed and verified during well construction. Barriers that seal wellbore and formation pressures or flows may include temporary pressure containment barriers like hydrostatic head pressure during cement curing, and permanent ones such as mechanical seals, shoe formations, and cement. Other well construction (well design, drilling, leak-off tests, etc.,) practices that may affect barrier sealing performance are addressed along with methods to help ensure positive effects or to minimize any negative ones. The incorporation by reference of API RP 65–Part 2 addresses the Safety Measures Report recommendation II.B.3.7: Enforce Tighter Primary Cementing Practices.

The citations for API RP 53 in § 250.198(h)(63) were updated to include the requirements in § 250.516 and new § 250.617.

A consensus standard indicates acceptance and recognition across the industry that this technology is feasible. For example, in its recommended practice publications, including API RP 65–Part 2 and API RP 53, API explains that its publications are intended to facilitate the broad availability of proven, sound engineering, and operating practices. The recommended practices are created with input from oil and gas operators, drilling contractors, service companies, consultants, and regulators; therefore, the recommended practices reflect an agreement that the specified practices and technologies are available and appropriate. Even though the development of a standard does not represent a 100% agreement by the task group members, the process provides a means for industry and regulatory bodies to develop protocols for the highly specialized equipment and procedures used in offshore oil and gas work. BOEMRE would not have the proper resources to develop information included in standards on its own (e.g. deepwater, High Pressure, High Temperature). BOEMRE regulatory program benefits from using the expertise in industry on offshore operations through the standards development process. Furthermore, in the National Technology Transfer and Advancement Act of 1995, Congress directed Federal agencies to use technical standards that are developed or adopted by voluntary consensus standards bodies ([http://standards.gov/standards\\_gov/nttaa.cfm](http://standards.gov/standards_gov/nttaa.cfm)).

When a copyrighted technical industry standard is incorporated by reference into our regulations, BOEMRE is obligated to observe and protect that copyright. BOEMRE provides members of the public with website addresses where these standards may be accessed for viewing—sometimes for free and sometimes for a fee. The decision to charge a fee is decided by organizations developing the standard.

For the convenience of the viewing public who may not wish to purchase these documents, they may be inspected at the Bureau of Ocean Energy Management, Regulation and Enforcement, 381 Elden Street, Room 3313, Herndon, Virginia 20170; phone: 703-787-1587; or at the National Archives and Records Administration. For information on the availability of this material, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

These documents will continue to be made available to the public for viewing when requested. Specific information on where these documents can be inspected or purchased can be found at § 250.198, Documents incorporated by reference.

In addition, the API has decided to provide free online public access to 160 key industry standards, including a broad range of safety standards once changes to the API website are complete. The standards represent almost one-third of all API standards and will include all that are safety-related or have been incorporated into Federal regulations. The API will make these standards will be available online for review and hardcopies and printable versions will continue to be available for purchase. You may view or purchase these API documents at: <http://www.api.org/>.

**What must my casing and cementing programs include? (§ 250.415)**

In this section, BOEMRE added a new paragraph (f) requiring the operator to include in its APD an evaluation of the best practices identified in API RP 65-Part 2, Isolating Potential Flow Zones During Well Construction. We revised paragraphs (c), (d), and (e) to accommodate the new paragraph. Incorporating this document by reference will help ensure operators use best practices when designing their casing and cementing programs and will help ensure the integrity of the well, decreasing the risk of a loss of well control.



Operators must submit a written description of their evaluation to BOEMRE that includes the mechanical barriers and cementing practices the operators will use for each casing string. Operators must exercise due diligence in understanding the variables involved when planning the casing and cementing program.

The API RP 65–Part 2 addresses mechanical barriers in section 3. A mechanical barrier, as defined by this document, is a verifiable seal achieved by mechanical means between two casing strings or a casing string and the borehole that isolates all potential flowing zones at or below the wellhead, BOP, or diverter. The use of downhole mechanical barriers is complementary to properly executed cementing and not a replacement. The applications of subsurface mechanical barriers must be chosen with care.

The API RP 65–Part 2, section 4, addresses cementing practices and factors affecting cementing. This section requires that casing and cementing programs address many of the key drilling issues that affect the quality of a primary cementing operation. Section 4 includes the best practices for the factors that must be considered and addresses the interrelationship between drilling operations and cementing success. BOEMRE is requiring operators to document how they evaluated these best practices, to ensure operators consider them while developing their casing and cementing programs.

BOEMRE believes that this is an appropriate document to incorporate by reference. The key to successful use of this document for OCS cementing operations is implementation. The regulations will require that the operator address the document during the preparation of the APD and describe the cementing practices and barriers used for casing string. Including this information on the APD will help assure best practices

are used for a particular operation. Incorporating this document will not address all issues associated with cementing practices; however, doing so gives the agency the ability to evaluate best cementing practices on a case by case basis. Additional cementing requirements may be identified as results of the many investigations of the Deepwater Horizon event but until then BOEMRE believes this is the best approach to requiring best cementing practices. These additions will allow BOEMRE to confirm that well construction is based on a complete evaluation of all critical factors (including mechanical barriers and cementing practices) involved in a casing and cementing program. This new requirement addresses Safety Measures Report recommendation II.B.3.7: Enforce Tighter Primary Cementing Practices.

**What must I include in the diverter and BOP descriptions? (§ 250.416)**

In this section, paragraph (d) was revised to include the submission of a schematic of all control systems, including primary control systems, secondary control systems, and pods for the BOP system. This requirement applies to both surface and subsea BOP systems. This will provide documentation for all control systems to BOEMRE. The location of the controls must be included. Secondary control systems include, but are not limited to, the following: ROV intervention panels located on the BOP, autoshear and deadman systems, power sources of each system, back up power sources, and acoustic systems.

In this section, paragraph (e) was revised to require the operator to submit independent third party verification and supporting documentation that shows the blind-shear rams installed in the BOP stack are capable of shearing any drill pipe in the hole under maximum anticipated surface pressure, as recommended in the Safety Measures

Report and included in NTL No. 2010-N05. This requirement applies to both surface and subsea BOP systems. The benefit of an independent third party is that it provides an objective and technically-informed review to properly verify capabilities of the blind-shear rams. Requiring independent third party verification and information about the blind-shear rams will help ensure that the appropriate shear rams are installed in the BOP. The documentation must include test results and calculations of shearing capacity of all pipe to be used in the well including correction for maximum anticipated surface pressure. Shearing capability tests can be performed on the drill pipe that requires the highest shear pressure. The operator must include a discussion on how the drill pipe used during the shear test required the highest shear pressure and was the most difficult to shear. The interim final rule will codify the section, “Verification that Blind-shear Rams Will Shear Pipe in the Hole” in NTL No. 2010-N05.

Paragraph (f) was added to require independent third party verification that a subsea BOP stack is designed for the specific equipment used on the rig. The independent third party must verify that the subsea BOP stack is compatible with the specific well location, well design, and well execution plan. Information showing that the shear rams are appropriate for the project must be included. The independent third party must also verify that the subsea BOP stack has not been damaged or compromised from previous service. Last, the independent third party must verify that a subsea BOP stack will operate in the conditions in which it will be used. This will ensure that all factors of drilling with subsea BOPs are considered when choosing well control equipment. This requirement applies to all APDs that request to use a subsea BOP stack. It applies to completion, workover, or abandonment operations. The interim final rule will codify the

section, “BOP Compatibility Verification for All Wells” in NTL No. 2010-N05.

Paragraph (g) was added and describes the criteria and documentation for an independent third party that must be submitted with the APD to BOEMRE for review. This is to ensure that the independent third party is capable of providing both an objective and a technically informed validation of the subjects being reviewed. The independent third party must be a technical classification society; an API licensed manufacturing, inspection, certification firm; or licensed professional engineering firm capable of providing the verifications required under this part. The independent third party must not be the original equipment manufacturer. The original equipment manufacturer is excluded because it has a financial interest in equipment being evaluated. Equipment manufacturers that do not have a financial interest in the equipment being evaluated may serve as an independent third party certifier if otherwise qualified. The operator must provide evidence to BOEMRE that the firm it is using is reputable; specifically, the firm or its employees hold appropriate licenses to perform the verification in the appropriate jurisdiction, the firm carries industry-standard levels of professional liability insurance, and the firm has no record of violations of applicable law. Prior to any shearing ram tests or inspections, the operator must also notify the District Manager 24 hours in advance. The operator must ensure an official representative of BOEMRE access to the location to potentially witness any testing or inspections, or to verify information submitted to BOEMRE. This approach to document the qualifications of the independent third party is the same approach being followed for the documenting the independent third party required by NTL No. 2010-N05.

The revised requirements in paragraph (d) address Safety Measures Report recommendation I.B.5: Secondary Control System Requirements and Guidelines. The requirements in paragraph (e) address Safety Measures Report recommendation I.C.7: Develop New Testing Requirements. The new requirements in paragraph (f) address Safety Measures Report recommendation I.A.2: Order BOP Equipment Compatibility Verification for Each Floating Vessel and for Each New Well. The criteria required for the independent third party are also addressed in NTL No. 2010-N05. These requirements will help ensure that the rig operator has the appropriate control systems in place, aiding the rig operator's ability to regain control of a well in the event of a loss of well control.

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

In this section, new paragraph (h) was added that requires the operator to submit certifications of their casing and cementing program signed by a Registered Professional Engineer. The Registered Professional Engineer must be registered in a State in the United States but does not have to be a specific discipline. Certification by a Registered Professional Engineer will increase the likelihood that the casing and cementing program has been properly designed and implemented, and will provide adequate well control. The Registered Professional Engineer will certify that there will be at least two independent tested barriers across each flow path during well completion activities. The Registered Professional Engineer will also certify that the casing and cementing design is appropriate for the purpose for which it is intended under expected wellbore conditions. The operator must submit this certification to BOEMRE along with the APD. Paragraph (g) was revised to accommodate new paragraph (h). The interim final rule will codify

requirements addressed under the section, “Well Design and Construction for All Wells” in NTL No. 2010-N05. These requirements for additional barriers, and the certification of the cement design, will decrease the likelihood of a blowout. These requirements apply to new wells, sidetracks, bypasses, or deepened wells.

In this section, a new paragraph (i) was added requiring the operator to submit a description of qualifications of any independent third party. Operators must formally notify BOEMRE of their independent third parties. The description must be submitted with the APD and may include the following:

1. Name and address of the individual or organization;
2. Size and type of the organization or corporation;
3. Previous experience as a Certified Entity, Certified Verification Agent (CVA), or similar third-party representative;
4. Experience in design, fabrication, or installation of BOPs and related equipment;
5. Technical capabilities (including professional certifications and organizational memberships) of the third party or the primary staff to be associated with the certifying functions for the specific project;
6. In-house availability of, or access to, appropriate technology (i.e., computer modeling programs and hardware, testing materials, and equipment);
7. Ability to perform and effectively manage certifying functions, inspections, and tests for the specific project considering current resource availability;
8. Previous experience with regulatory requirements and procedures;
9. Evidence that the third party is not owned or controlled by the designer, manufacturer, or supplier of the system or its subsystems to be inspected or tested under

regulations applicable to this device or any manufacturer of similar equipment or material;

10. The level of work to be performed by the third party; and

11. A list of documents and certifications expected to be furnished to BOEMRE by the third party.

The new requirements address the Safety Measures Report recommendation II.B.1.3: New Casing and Cement Design Requirements: Two Independent Tested Barriers and recommendation I.C.7: Develop New Testing Requirements.

**What well casing and cementing requirements must I meet? (§ 250.420)**

In this section, new paragraph (a)(6) was added that requires the operators to submit certification of their casing and cementing program signed by a Registered Professional Engineer (see discussion under section 250.418, above). The Registered Professional Engineer must be registered in a State in the United States. As mentioned previously, the Registered Professional Engineer does not have to be from a specific discipline, but must be capable of reviewing and certifying that the casing design is appropriate for the purpose for which it is intended under expected wellbore conditions. The Registered Professional Engineer will certify that there will be at least two independent tested barriers, including one mechanical barrier, across each flow path during well completion activities. The Registered Professional Engineer will also certify the casing and cementing design is appropriate for the purpose for which it is intended under expected wellbore conditions. The operator must submit this certification to BOEMRE along with the APD. The operator should not deviate from the certified procedure; if the operator deviates from the certified procedures, they must contact the appropriate District

Manager. Paragraphs (a)(4) and (a)(5) were revised to accommodate the new paragraph (a)(6). The interim final rule will codify the section, “Well Design and Construction for All Wells” in NTL No. 2010-N05. The certification of the casing and cementing program will help ensure that the appropriate program is used for the well and decrease the likelihood of a blowout.

A new paragraph (b)(3) was also added, requiring the operator to install dual mechanical barriers in addition to cement for the final casing string (or liner if it is the final string), to prevent flow in the event of a failure in the cement. These may include dual float valves, or one float valve and a mechanical barrier. The operator must document the installation of the dual mechanical barriers and submit this documentation to BOEMRE 30 days after installation. References to days in this rule are always in calendar days. The interim final rule will codify the section, “Well Design and Construction for All Wells” in NTL No. 2010-N05.

These new requirements will help ensure that the best casing and cementing design will be used for a specific well. The new requirements in paragraphs (a)(6) and (b)(3) address the Safety Measures Report recommendation II.B.1.3: New Casing and Cement Design Requirements: Two Independent Tested Barriers.

**What are the requirements for pressure testing casing? (§ 250.423)**

This section was reorganized to accommodate new requirements: the current regulations were redesignated as paragraph (a) and new paragraphs (b) and (c) were added. Paragraph (b) requires the operator 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. This must be done for intermediate and production casing strings or liner. To



install casing in the subsea wellhead, the operator runs and lands the casing hanger tool, cements the casing, latches the casing hanger in place, and finally pressure sets and tests the seal. This test ensures that the casing hanger latching mechanism, or lockdown mechanism, is engaged, ensuring the integrity of the casing. The operator must submit the test procedures and criteria used for a successful test with the APD to BOEMRE for approval. The operator must record the test results and make the results available to BOEMRE upon request. As required in § 250.466, records for well operations must be kept onsite while drilling activities continue. The interim final rule will codify requirements addressed under the section, “Well Design and Construction for All Wells” in NTL No. 2010-N05.

Paragraph (c) requires the operator to perform a negative pressure test on all wells to ensure proper installation of casing for the intermediate and production casing strings. The operator must submit the procedures and criteria for a successful test with the APD for approval. The operator must record the test results and make available to BOEMRE upon request. A negative pressure test will help ensure that the casing, along with the cement, provides a seal.

The new requirements in this section will help ensure proper casing installation and evaluate the integrity of the casing and cement. The new requirements in this section address the Safety Measures Report recommendations II.B.1.3: New Casing and Cement Design Requirements: Two Independent Tested Barriers; II.B.2.5: New Casing Installation Procedures; and II.B.2.6: Develop Additional Requirements or Guidelines for Casing Installation.

**What are the requirements for a subsea BOP system? (§ 250.442)**

This section requires that when drilling with a subsea BOP system, the BOP system must be installed before drilling below the surface casing. The table in this section outlines the requirements, including:

- a. the minimum number of each type of BOP,
- b. dual-pod control systems,
- c. accumulator operations,
- d. ROV intervention,
- e. maintaining an ROV and ROV crew training,
- f. autoshear and deadman capability and optional acoustic system for dynamically positioned rigs,
- g. accidental disconnect avoidance,
- h. BOP control panel labels,
- i. BOP management system,
- j. personnel training for BOP equipment,
- k. marine riser removal, and
- l. avoiding ice scour.

Paragraph (a) was revised to clarify that the blind-shear rams must be capable of shearing any drill pipe in the hole under maximum anticipated surface pressures. When drilling with a subsea BOP stack, the operator must have a minimum of four remote controlled hydraulically operated BOPs. The BOPs must include one annular preventer, two sets of pipe rams, and one set of blind-shear rams.

The requirement in paragraph (b) to have an operable dual-pod control system and the requirement in paragraph (c) to follow API RP 53, Section 13.3, Accumulator Volumetric

Capacity, were not revised. The operator must meet the volume capacities for all subsea accumulators and must meet the closing times specified in API RP 53, Section 13.3.5, Accumulator Response Time: the BOP control system must be capable of closing each ram BOP in 45 seconds or less; closing time must not exceed 60 seconds for annular BOPs; operating response time for choke and kill valves must not exceed the minimum observed ram BOP close response time; and time to unlatch the LMRP must not exceed 45 seconds.

Requirements related to ROV intervention in paragraph (d) were added. The subsea BOP stack must be equipped with ROV intervention capability to operate one set of pipe rams and one set of blind-shear rams as well as unlatch the LMRP. The BOP-ROV interface must allow sufficient volume to actuate all required functions. This requirement will ensure that the dedicated ROV has the capacity to close the BOP functions and secure the well in sufficient time during a well control event. The interim final rule will codify the section, “ROV Hot Stab Function Testing of the ROV Intervention Panel” in NTL No. 2010-N05.

In paragraph (e), the operator is required to maintain an ROV and have a trained ROV crew on each floating drilling rig on a continuous basis. The crew must be trained in the operation of the ROV. The training must include simulator training on stabbing into an ROV intervention panel on a subsea BOP stack. This requirement will help provide assurance that a properly trained crew is available for use during an emergency situation.

Requirements related to autoshear and deadman systems in paragraph (f) were added. Autoshear, deadman, and acoustic systems are all emergency systems. Dynamically positioned rigs must have autoshear and deadman systems. Autoshear system is defined

as a safety system that is designed to automatically shut in the wellbore in the event of an unplanned disconnect of the LMRP. When the autoshear is armed, a disconnect of the LMRP closes the shear rams. Deadman system is defined as a safety system that is designed to automatically close the wellbore in the event of a simultaneous absence of hydraulic supply and signal transmission capacity in both subsea control pods. Both autoshear and deadman are considered “rapid discharge” systems. Dynamically positioned rigs may also use an acoustic system. An acoustic signal transmission may be used as an emergency backup that controls critical BOP functions. However, BOEMRE believes additional evaluation is necessary to determine the reliability of acoustic signal transmission as a mandatory backup control system. Industry, academics and other stakeholders have raised concerns about how the differences in water temperatures between water layers (deepwater thermocline) will affect the transmission of the acoustic signal to the BOP stack when installed in deepwater. Similar concerns were raised about how different salinities between water layers, noise from a wild well, or other subsea noise may interfere with the successful transmission of the acoustic signals to the BOP stack. Further investigation of these concerns is needed before deciding to require the installation of an acoustic backup control system. The interim final rule will codify the section, “Secondary Control System Requirements and Guidelines for Subsea BOP Stacks” in NTL No. 2010-N05.

In paragraph (g), the operator is required to have operational or physical barrier(s) on BOP control panels to prevent accidental use of disconnect functions. The operator must incorporate enable buttons on control panels to ensure two-handed operation for all

critical functions. The new requirements in this paragraph will reduce the chances of an accidental disconnect by requiring two separate actions to activate all critical functions.

In paragraph (h), the operator is required to clearly label all control panels for the subsea BOP system. The operator must include all BOP controls such as hydraulic control panels and ROV interface on the BOP. The new requirements in this paragraph will help to ensure that the correct function is executed. The labeling of all functions will also assist in proper usage in an emergency situation.

In paragraph (i), the operator is required to develop and use a management system for operating the BOP system. This includes guidance to prevent accidental or unplanned disconnects of the system. This management system must include written procedures for operating the BOP stack and LMRP, and minimum knowledge requirements for personnel authorized to operate and maintain BOP components. A copy of these written procedures should be maintained on the drilling rig and in other readily accessible locations. These procedures must be made available to all relevant personnel. The new requirements in this paragraph will help to ensure that the correct function is executed in an emergency situation.

Paragraph (j) requires the operator to establish minimum requirements for personnel authorized to operate critical BOP equipment. This training must include deepwater well control theory and practice in accordance with 30 CFR 250, subpart O, and a comprehensive knowledge of BOP hardware and control systems.

Paragraphs (k) and (l) are currently required, but were reformatted into the table. Paragraph (k) requires the operator to displace the fluid in the riser with seawater before removing the marine riser; while conducting this operation, the operator must maintain

sufficient hydrostatic pressure on the well or take other suitable precautions to compensate for the reduction in pressure to maintain well control. Paragraph (l) requires that when drilling in an ice-scour area, the BOP stack must be installed in a glory hole (a depression deep enough that the equipment is protected).

These requirements help ensure enhanced operability of subsea BOP systems. These requirements will also help to ensure that the proper personnel are trained to have a comprehensive knowledge of well control equipment, maintain well control equipment, operate essential well control equipment, and manage a well control situation.

The ROV intervention capability and autoshear and deadman requirements in this section address Safety Measures Report recommendation I.B.5: Secondary Control System Requirements and Guidelines, and recommendation I.B.6: New ROV Operating Capabilities. The new requirements also meet Safety Measures Report recommendation II.A.1: Establish Deepwater Well-Control Procedure Guidelines.

**What are the BOP maintenance and inspection requirements? (§ 250.446)**

Paragraph (a) of this section was changed to require the operator to document the maintenance and inspections of their BOP system. The requirement that BOP maintenance and inspections must meet or exceed the provisions of Sections 17.10 and 18.10, Inspections; Sections 17.11 and 18.11, Maintenance; and Sections 17.12 and 18.12, Quality Management; described in API RP 53, Recommended Practices for Blowout Prevention Equipment Systems for Drilling Wells (incorporated by reference as specified in § 250.198) was not changed. The operator must document the procedures used, record the results, and make the results available to BOEMRE upon request. The operator must maintain the records on the rig for 2 years or from the date of the last major

inspection, whichever is longer.

The BOP maintenance, inspections, and quality management are essential components to ensuring BOP integrity and operability. According to API RP 53, Section 17.10 (surface BOPs) and Section 18.10 (subsea BOPs), operators must perform a between-well inspection, a visual inspection of flexible choke and kill lines, and a major 3-5 year inspection. According to API RP 53, Section 17.11 (surface BOPs) and Section 18.11 (subsea BOPs), operators are required to maintain BOP manuals, connections, replacement parts, torque requirements, equipment storage, lubricants and hydraulic fluids, weld repairs, and mud/gas separators. According to API RP 53, Section 17.12 (surface BOPs) and Section 18.12 (subsea BOPs), operators are required to have a planned maintenance system, with equipment identified, tasks specified, and the time intervals between tasks stated. Records of maintenance performed and repairs made must be retained on file at the rig site or readily available.

The interim final rule will codify the section, “BOP Inspection, Maintenance, and Repair for All Wells” in NTL No. 2010-N05. The documentation for BOP maintenance, repairs, and inspections meet the Safety Measures Report recommendation I.B.5: Secondary Control System Requirements and Guidelines.

**What additional BOP testing requirements must I meet? (§ 250.449)**

New paragraphs (j) and (k) were added and paragraphs (h) and (i) were revised to accommodate the new paragraphs. New paragraph (j) requires the testing of ROV intervention functions on a subsea BOP stack. The ROV intervention functions must be tested during the stump test. This test must include ensuring that the hot stabs are function tested and are capable of actuating one set of pipe rams and one set of blind-

shear rams, as well as unlatching the LMRP. The operator must also test at least one set of rams during the initial test on the seafloor. The BOP-ROV interface must allow sufficient volume to actuate all required functions. The operator must document the test results and make them available to BOEMRE upon request. This will help to ensure that the ROV and hot stabs are capable of actuating the BOP rams and LMRP disconnect. The interim final rule will codify requirements addressed under the section, “ROV Hot Stab Function Testing of the ROV Intervention Panel” in NTL No. 2010-N05; which required testing of ROV intervention functions during the stump test. The interim final rule will also require function testing during the initial test on the seafloor. A successful test will help ensure that the ROV and BOP are capable of operating as designed under conditions at water depth.

New paragraph (k) requires function testing of the autoshear and deadman systems on the BOP stack during the stump test. The operator must submit the testing procedures for these requirements with the APD or APM for BOEMRE approval. This should include the sequence of BOP functions that will activate when the autoshear and deadman systems are triggered. These requirements will help to ensure that a well is secured in an emergency situation, loss of power, or accidental disconnect, preventing the possible loss of well control. The ROV intervention capability and autoshear and deadman requirements in this section address Safety Measures Report recommendation I.B.5: Secondary Control System Requirements and Guidelines and recommendation I.C.7: Develop New Testing Requirements.

**What must I do in certain situations involving BOP equipment or systems?**

**(§ 250.451)**



A new item was added to the table, requiring the operator to perform a full pressure test when the blind-shear rams or casing shear rams are used in an emergency.

Following activation of the blind-shear rams or casing shear rams, in which pipe or casing is sheared during a well control situation, the operator must retrieve and physically inspect the BOP and conduct a full pressure test of the BOP stack, after the situation is fully controlled. This will help ensure the integrity of the BOP and that the BOP will fully function and hold pressure after the event. If rams, sealing elements, or other equipment are damaged, they must be replaced or repaired.

The interim final rule will codify the section, “BOP Inspection Testing after Well Control Event for All Wells” in NTL No. 2010-N05. The tests required after a well control event in this section addresses Safety Measures Report recommendation I.C.7: Develop New Testing Requirements.

**What safe practices must the drilling fluid program follow? (§ 250.456)**

A new paragraph (j) was added, the current (j) was redesignated to paragraph (k) and paragraph (i) was revised to accommodate the new paragraph. The new paragraph (j) requires approval from the District Manager before displacing kill-weight drilling fluid from the wellbore. The operator must submit with the APD or APM the reasons for displacing the kill-weight drilling fluid and provide detailed step-by-step written 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. The requirement to submit procedures for kill-weight drilling fluid displacement in this section addresses Safety Measures Report recommendation II.A.2: New Fluid Displacement Procedures.

**Blowout prevention equipment. (§ 250.515)**

This section added requirements of § 250.442 in subpart D, Oil and Gas Drilling Operations, to the requirements for well completion operations using a subsea BOP stack.

**Blowout preventer system tests, inspections, and maintenance. (§ 250.516)**

Paragraph (d)(8) was added to require tests for ROV intervention functions during the stump test. Paragraph (d)(9) was added to require a function test of the autoshear and deadman system. Paragraph (d)(6) was revised to accommodate the new paragraphs. This section adds the requirements of § 250.449 in subpart D, Oil and Gas Drilling Operations, to the requirements for well completion operations using a subsea BOP stack. The interim final rule will require successful testing of both systems during the stump test. Successful tests will ensure the autoshear and deadman system are operating as designed. A function test of the deadman system is also required during the initial test on the seafloor. Successful testing the deadman system during the initial test on the seafloor will ensure the system is capable of operating as designed under conditions at water depth.

Paragraphs (g) and (h) were revised to expand and clarify the requirements for inspections and maintenance. The BOP maintenance, inspections, and quality management are essential to BOP operability. This section adds requirements of

§ 250.446 in subpart D, Oil and Gas Drilling Operations, to the requirements for well completion operations using a subsea BOP stack. The operator must maintain the records on the rig for 2 years or from the date of the last major inspection, whichever is longer.

The documentation for BOP maintenance, repairs, and inspections meets the Safety Measures Report recommendation I.B.5: Secondary Control System Requirements and Guidelines and recommendation I.C.7: Develop New Testing Requirements.

**Blowout prevention equipment. (§ 250.615)**

This section added requirements of § 250.442 in subpart D, Oil and Gas Drilling Operations, to the requirements for well workover operations using a subsea BOP stack.

**Blowout preventer system testing, records, and drills. (§ 250.616)**

Paragraph (h)(1) was added to require tests for ROV intervention functions during the stump test. Paragraph (h)(2) was added to require a function test of the autoshear and deadman systems. Paragraph (h)(3) was added to require the use of water to stump test a subsea BOP system. This section adds the requirements of § 250.449 in subpart D, Oil and Gas Drilling Operations, to the requirements for well workover operations using a subsea BOP stack. The interim final rule will require testing of both systems during the stump test. Successful tests will ensure the autoshear and deadman systems are operating as designed. A function test of the deadman system is also required during the initial test on the seafloor. Testing the deadman system during the initial test on the seafloor will help ensure the system is capable of operating as designed under conditions at water depth.

**What are my BOP inspection and maintenance requirements? (§ 250.617)**

This section was added to apply the requirements of § 250.446 in subpart D, Oil and

Gas Drilling Operations, to the requirements for well workover operations using a subsea BOP stack.

**Definitions. (§ 250.1500)**

BOEMRE revised the definition of well control by creating separate definitions for the terms well servicing and well completion/well workover.

A new definition for deepwater well control was added. The rule adds deepwater well control throughout subpart O as one of the subjects for employee and contract personnel training. This clarification helps ensure that rig personnel are trained in deepwater well control and the specific duties, equipment, and techniques associated with deepwater drilling.

**What are my general responsibilities for training? (§ 250.1503)**

In this section, new paragraph (b) was added and current paragraphs (b) and (c) were redesignated as (c) and (d). The operator is required to ensure that employees and contract personnel are trained in deepwater well control when conducting operations with a subsea BOP stack. They must have a comprehensive knowledge of deepwater well control equipment, practices, and theory. This clarification of existing requirements addresses Safety Measures Report recommendation II.A.1: Establish Deepwater Well-Control Procedure Guidelines.

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

**(§ 250.1712)**

In this section, new paragraph (g) was added and paragraphs (e) and (f)(14) were revised to accommodate the new paragraph. New paragraph (g) requires operators to submit certification by a Registered Professional Engineer of the well abandonment

design and procedures. The Registered Professional Engineer must be registered in a State in the United States. The Registered Professional Engineer does not have to be a specific discipline, but must be capable of reviewing and certifying that the casing design is appropriate for the purpose for which it is intended under expected wellbore conditions. The Registered Professional Engineer will certify that there will be at least two independent tested barriers, including one mechanical barrier, across each flow path during well abandonment activities. The Registered Professional Engineer will also certify that the plug meets the requirements in the table in § 250.1715. This will help ensure the integrity of the well. The operator must submit this certification along with the APM. The operator should not deviate from the certified procedure; if the operator deviates from the certified procedures, they must contact the appropriate District Manager. The interim final rule will codify the section, “Well Design and Construction for All Wells” in NTL No. 2010-N05. This new requirement addresses Safety Measures Report recommendation II.B.1.3: New Casing and Cement Design Requirements: Two Independent Tested Barriers.

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

**(§ 250.1721)**

In this section, new paragraph (h) was added to require operators to submit certification by a Registered Professional Engineer of the well abandonment design and procedures. The Registered Professional Engineer does not have to be a specific discipline. The Registered Professional Engineer must be registered in a State in the United States. As mentioned previously, the Registered Professional Engineer does not have to be a specific discipline, but must be capable of reviewing and certifying that the

casing design is appropriate for the purpose for which it is intended under expected wellbore conditions. The Registered Professional Engineer will certify that there will be at least two independent tested barriers, including one mechanical barrier, across each flow path during well abandonment activities. This will help ensure the integrity of the well. The operator must submit this certification to BOEMRE along with the APM, as required in § 250.1712 and is responsible for ensuring that the approved well abandonment design and procedures are followed. The operator should not deviate from the certified procedure, if the operator deviates from the certified procedures they must contact the appropriate District Manager. Paragraphs (e) and (g)(3) were revised to accommodate the new paragraph. The interim final rule will codify requirements addressed under the section, “Well Design and Construction for All Wells” in NTL No. 2010-N05. This new requirement addresses Safety Measures Report recommendation II.B.1.3: New Casing and Cement Design Requirements: Two Independent Tested Barriers.

## **VII. Additional Recommendations in the Safety Measures Report not Covered in this Interim Final Rule**

As discussed previously, this interim final rule incorporates some, but not all items from the Safety Measures Report. The following tables specifically identify which measures from the Safety Measures Report are not covered in the interim final rule. BOEMRE anticipates it will be able to address these measures in notice and comment rulemakings in the future.

Items in the Safety Measures Report that are not covered in this interim final rule, and which BOEMRE anticipates addressing either in the near future, or at a later time after

further review and analysis, are as follows:

**Items for Future Rulemaking**

<b>Number</b>	<b>Recommendation</b>
I.A.3	Develop Formal Equipment Certification Requirements.
I.B.4	New Blind Shear Ram Redundancy Requirement.
II.B.3.8	Develop Additional Requirements or Guidelines for Evaluation of Cement Integrity.
II.C.9	Increase Federal Government Wild-Well Intervention Capabilities.
II.C.10	Study Innovative Wild-Well Intervention, Response Techniques, and Response Planning.
III.C.2	Adopt Safety Case Requirements for Floating Drilling Operations on the OCS.
III.C.4	Study Additional Safety Training and Certification Requirements.

There are also certain items which, although they are included in this interim final rule, BOEMRE anticipates expanding upon in the future. BOEMRE is specifically considering additional rulemaking activity concerning the following:

**Items Included in this Rule Under Consideration for Expansion**

<b>Number</b>	<b>Recommendation</b>
I.B.5	Secondary Control System Requirements and Guidelines.
I.B.6	New ROV Operating Capabilities.
II.A.1	Establish Deepwater Well-Control Procedure Guidelines.
II.B.1.4	Study Formal Personnel Training Requirements for Casing and Cementing Operations.
II.B.2.6	Develop Additional Requirements or Guidelines for Casing Installation.
II.B.3.7	Enforce Tighter Primary Cementing Practices.

Additionally, as discussed further, BOEMRE is examining a variety of other well control issues related to OCS drilling to determine how to improve future safety on the OCS in light of the Deepwater Horizon event.

BOEMRE recognizes that this interim final rule does not fully address all issues associated with OCS drilling operations, although it is a critical step. We anticipate future rulemakings as we learn more about the causes of the Deepwater Horizon event and other issues associated with deepwater drilling operations. Future rulemakings will be based on recommendations in the Safety Measures Report that require further development, the results of the joint USCG-BOEMRE investigation, other investigations and inquiries, and findings from technology-focused research led by DOI strike teams and interagency workgroups. Some of the issues that are addressed by this rulemaking,

such as cementing and casing design, will be considered for additional rulemaking in the future. We will consider additional measures, after we have more thoroughly studied these issues and assessed the best approaches.

BOEMRE has identified the following issues as likely topics for both near-term and future rulemakings:

### **Well Control Issues**

While the content of these future rulemakings will depend in part on the findings of the various investigations, BOEMRE anticipates that future rules will focus on well control issues. More specifically this will include:

**1. Cementing and casing** –BOEMRE anticipates examining the need for additional cement evaluation procedures and training needs for personnel involved in cementing and casing operations, and intends to incorporate findings as appropriate from the investigations related to the Deepwater Horizon event.

**2. Fluid displacement** –BOEMRE intends to further evaluate the effectiveness of new fluid displacement requirements to determine if it needs to establish different or enhanced fluid displacement procedures.

**3. BOPs** –BOEMRE anticipates rulemaking to address BOP recommendations resulting from the joint BOEMRE and United States Coast Guard investigation of the Deepwater Horizon event. Rulemaking will also likely address the requirement to have two sets of blind shear rams as recommended in the Safety Measures Report and discussed previously. Rulemakings will also likely consider requirements for casing shear rams, minimum number of pipe rams, second annular preventer for subsea BOP stacks, and electronic BOP logs. Another area mentioned in the Safety Measures Report



is the need for periodic certification of the BOP stack or specific BOP components.

BOEMRE wishes to undertake additional research on how these certifications should be done and how often they should occur.

**4. Secondary control systems and ROVs** – Future rulemaking may address autoshear and deadman requirements for all rigs with subsea BOP stacks, enhanced ROV intervention capability, and subsea accumulator volumes to ensure fast closure of BOPs and choke and kill lines. The need for effective tertiary control systems, such as an acoustic system, will also be examined and addressed as appropriate.

**5. Wild-well intervention techniques** –BOEMRE will conduct research on this topic and evaluate the progress industry has made to establish deepwater wild-well intervention as it moves forward with rulemaking on wild well intervention.

**6. Industry training** –BOEMRE will investigate safety training requirements for deepwater drilling operations and determine the appropriate manner to regulate the training of personnel.

**7. Oil spill response** – BOEMRE anticipates future rulemaking to address the capture and disposition of oil released from a deepwater well blowout at the seafloor.

**8. Organization and safety management** – The Safety Measures Report recommended that the DOI evaluate the need to require all or part of the International Association of Drilling Contractors' Health, Safety, and Environmental Case Guidelines for Mobile Drilling Units. BOEMRE will evaluate the guidelines and determine how they will best fit with SEMS regulations that are being considered by BOEMRE for final publication in a separate rulemaking. BOEMRE published a notice of proposed rulemaking on SEMS requirements on June 17, 2009 (74 FR 28639).

## **Technical Consensus Standards**

BOEMRE is aware that various organizations which support the offshore oil and gas industry are also studying the possible causes of the Deepwater Horizon event. Based on their findings, these organizations may make recommendations to their members on practices to increase the safety of offshore oil and gas operations in general with specific recommendations related to deepwater drilling operations. BOEMRE is reviewing the following subjects:

### **1. API Documents Concerning Cementing Practices**

In § 250.198 of this interim final rule, BOEMRE incorporates API RP 65—Part 2, *Isolating Potential Flow Zones During Well Construction*, which summarizes best practices and addresses basic issues associated with cementing practices. The API has additional documents that address cementing practices in more detail.

### **2. Discussion of Additional Specifications and Recommended Practices**

#### **API Spec 16A: Specification for Drill-through Equipment.**

This standard specifies requirements for performance, design, materials, testing and inspection, welding, marking, handling, storing, and shipping of drill-through equipment used for drilling for oil and gas. It also defines service conditions in terms of pressure, temperature, and wellbore fluids for which the equipment will be designed. This standard is applicable to, and establishes requirements for, the following specific equipment: ram BOPs; ram blocks, packers, and top seals; annular BOPs; annular packing units; hydraulic connectors; drilling spools; adapters; loose connectors; and clamps.

API Spec 16D: Specification for Control Systems for Drilling Well Control Equipment and Control Systems for Diverter Equipment.

This specification provides design standards for systems used to control the BOP and associated valves that control well pressure during drilling operations. Diverter control systems are included in this specification because they are included in the BOP control system. This specification addresses the following categories: control systems for surface BOP stacks, control systems for subsea BOP stacks, discrete hydraulic control systems for subsea BOP stacks, electro-hydraulic/multiplex control systems for subsea BOP stacks, control systems for diverter equipment, auxiliary equipment control systems and interfaces, emergency disconnect sequenced systems (EDS), backup systems, and special deepwater/harsh environment features.

Certain standards in API Spec. 16D are of particular interest. These include optional sections – 5.7 Emergency Disconnect Sequenced Systems (EDS), 5.8 Backup Control Systems, and 5.9 Special Deepwater/Harsh Environment Features. The EDS systems are required for floating drilling rigs in order to quickly disconnect the riser in the event of an inability to maintain rig position within a prescribed watch circle. Backup Control Systems include standards on acoustic systems, ROV control systems, LMRP recovery systems, and backup power supply. The Deepwater/Harsh Environment features give specifications for autoshear and deadman systems.

API Spec 17D: Specification for Subsea Wellhead and Christmas Tree Equipment.

This specification was formulated to provide for the availability of safe, dimensionally, and functionally interchangeable subsea wellhead, mudline, and tree equipment. The technical content provides requirements for performance, design,

materials, testing, inspection, welding, marking, handling, storing, and shipping. Critical components are those parts having a requirement specified in this document. Rework and repair of used equipment are beyond the scope of this specification.

API Recommended Practice 17H; ISO 13628-8: Remotely Operated Vehicle (ROV) Interfaces on Subsea Production Systems.

This recommended practice gives functional requirements and guidelines for ROV interfaces on subsea production systems for the petroleum and natural gas industries. It is applicable to both the selection and use of ROV interfaces on subsea production equipment, and provides guidance on design as well as the operational requirements for maximizing the potential of standard equipment and design principles. The auditable information for subsea systems this document offers allows interfacing and actuation by ROV-operated systems, while it identifies issues that have to be considered when designing interfaces on subsea production systems. The framework and detailed specifications set out enable the user to select the correct interface for a specific application.

API Recommended Practice 53: Recommended Practices for Blowout Prevention Equipment Systems for Drilling Wells.

This recommended practice provides guidance for installation and testing of surface and subsea BOP equipment systems. This equipment system consists of a BOP, choke and kill lines, marine riser, and auxiliary equipment. The primary function of a BOP equipment system is to confine wellbore fluids, provide a means to add fluids, and allow controlled volumes to be withdrawn from the wellbore. This recommended practice also addresses diverter systems.

### **Other items for consideration**

BOEMRE is also studying the following issues:

1. Following the certification of the BOP to meet the one-time requirement of NTL No. 2010-N05, frequency and conditions for recertification requirements.
2. Requirements for BOP equipment and other components of the BOP stack such as control panels, communication pods, accumulator systems, and choke and kill lines and the adequacy of API Spec 16A.
3. Standardization of the BOP-ROV interface to improve intervention capabilities.
4. Issues related to requiring a subsea isolation device that is independent of the BOP stack that is capable of operating critical functions that will shut in a well in emergency situations.

### **Procedural Matters**

#### **Regulatory Planning and Review (Executive Order (E.O.) 12866)**

This interim final rule is a significant rule as determined by the Office of Management and Budget (OMB) and is subject to review under E.O. 12866.

1. This rule will have an annual effect of \$100 million or more on the economy. The following discussion summarizes a detailed cost-benefit analysis that is available on [www.Regulations.gov](http://www.Regulations.gov). Use the keyword/ID “BOEM-2010-0034” to locate the docket for this rule.

Various events around the world as well as the US over the years demonstrate that catastrophic oil spills can and do occur. The costs associated with such spills can be tremendous. As a matter of policy, BOEMRE has decided that any reasonable measures to reduce the risks of another catastrophic spill occurring on the OCS should be put in

place and enforced. The requirements included in this rulemaking are such measures. They were identified in the May 27, 2010 report, Increased Safety Measures for Energy Development on the Outer Continental Shelf, for which the draft recommendations were peer-reviewed by seven experts identified by the National Academy of Engineering., or identified by industry or academic experts in materials presented to BOEMRE. While the estimated costs of this rulemaking, as reflected in the compliance costs of the enumerated requirements of approximately \$180 million per year, have a strong foundation and are based on surveys of public and industry sources, quantification of the benefits is uncertain. The benefits are represented by the avoided costs of a catastrophic spill, which are estimated under the stipulated scenario as being \$16.3 billion per spill avoided. These regulations will reduce the likelihood of another blowout and associated spill, but the risk reduction associated with the specific provisions of this rulemaking cannot be quantified because there are many complex factors that affect the risk of a blowout event. As noted by the Secretary of the Interior in his July 12 decision memo suspending certain drilling activities, drilling accidents can have a profound, devastating impact on the economic and environmental health of a region. The measures codified in this rule will reduce the likelihood of such an event in the future, at a cost that is not prohibitive, and therefore this rulemaking is justified.

The purpose of a benefit-cost analysis is to provide policy makers and others with detailed information on the economic consequences of the regulatory requirements. The benefit-cost analysis for this rule was conducted using a scenario analysis. The benefit-cost analysis considers a regulation designed to reduce the likelihood of a catastrophic oil spill. The costs are the compliance costs of imposed regulation. If another catastrophic

oil spill is prevented, the benefits are the avoided costs associated with a catastrophic oil spill (e.g., reduction in expected natural resource damages owing to the reduction in likelihood of failure).

Avoided cost is an approximation of the “true” benefits of avoiding a catastrophic oil spill. A benefits transfer approach is used to estimate the avoided costs. The benefits transfer method estimates economic values by transferring existing benefit calculations from studies already completed for another location or issue to the case at hand. Accordingly, none of the avoided costs used for a hypothetical catastrophic spill rely upon, or should be taken to represent, our estimate for the BPDH event commencing on April 20, 2010.

Three new requirements account for virtually all of the compliance costs imposed by this regulation (1) use of dual mechanical barriers in addition to cement barriers in the final casing string to prevent hydrocarbon flow in the event of cement failure, (2) application of negative pressure tests to all intermediate and the production casing strings to ensure their proper installation, and (3) maintenance of standby ROV capability to close BOP rams and testing that capability after the BOP has been installed on the sea floor. BOEMRE estimates that these three requirements will impose compliance costs of approximately \$174 million per year, representing 95 percent of the total annual compliance costs of \$183 million associated with this rulemaking. These cost estimates were developed by BOEMRE based on public data sources and confidential information provided by several offshore operators and drilling companies.

On the benefit side, the avoided costs for a hypothetical deepwater blowout resulting in a catastrophic oil spill are estimated to be about \$16.3 billion (in 2010 dollars). Most

of this amount derives from detailed cleanup estimates developed using damage costs per barrel measures found in historical spill data (from all sources including pipeline, tanker, and shallow water as well as deepwater wells) and from aggregate damage measures contained in the legal settlement documents for past spills applied to a catastrophic deepwater spill of hypothetical size. The rest of the avoided cost amount represents the private costs for blowout containment operations. In sum, three components account for nearly the entire avoided spill cost total: (1) natural resource damage to habitat and creatures, 2) infrastructure salvage and cleanup operations of areas soiled by oil, and (3) containment and well-plugging actions plus lost hydrocarbons.

The estimate of compliance costs is somewhat uncertain. This is the case primarily because the \$183 million annual estimate is perhaps higher than the actual costs that will be incurred by society from this rule because industry is voluntarily undertaking some steps following the BPDH event that overlap those in this regulation. The Joint Industry Task Force draft recommendations include use of mechanical barriers and negative pressure tests. Voluntary action, perhaps spurred on as well by revised liability expectations and increased insurance prospects, means the incremental costs associated with these overlapping measures are not truly imposed solely by the new regulations. Less incremental required costs reduce the improvement in reliability necessary for expected benefits to cover the cost of complying with the new regulations. On the benefit side, the total avoided cost estimate of \$16.3 billion (representing a measure of expected benefits for avoiding a future catastrophic oil spill) is highly uncertain because of the limited historical data upon which to judge the cost of failure, the disparity between the damages associated with spills of different sizes, locations, and season of occurrence, and



owing to the fact that the measure employed reflects only those outlays that we have been able to calculate based primarily upon factors derived from past oil spills. Possible losses from human health effects or reduced property values have not been quantified in this analysis. Moreover, the likelihood of a future blow out leading to a catastrophic oil spill is difficult to quantify because of limited historical data on catastrophic offshore blowouts.

*Benefit-Cost Result:* Based on the occurrence of only a single catastrophic blowout, the number of GOM deepwater wells drilled historically (4,123), and the forecasted future drilling activity in the GOM (160 deepwater wells per year), the baseline risk of a catastrophic blowout is estimated to be about once every 26 years. Combining the baseline likelihood of occurrence with the cost of a hypothetical spill implies that the expected annualized spill cost is about \$631 million (\$16.3 billion once in 26 years, equally likely in any 1 year). To balance the \$183 million annual cost imposed by these regulations with the expected benefits, the reliability of the well control system needs to improve by about 29 percent (\$183 million / \$631 million). We have found no studies that evaluate the degree of actual improvement that could be expected from dual mechanical barriers, negative pressure tests, and a seafloor ROV function test. We request comment with supporting evidence on the reliability improvement likely from these new provisions.

2. This interim final rule will not adversely affect competition or State, local, or tribal governments or communities.

3. This interim final rule will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.

4. This interim final rule will not alter the budgetary effects of entitlements, grants, user fees, or loan programs or the rights or obligations of their recipients.

5. This interim final rule will not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866.

### **Regulatory Flexibility Act: Initial Regulatory Flexibility Analysis**

Given the emergency nature of these rules, BOEMRE has not yet prepared a detailed Initial Regulatory Flexibility Analysis for this rule; however, BOEMRE intends to publish a supplemental Initial Regulatory Flexibility Analysis in the near future which will examine the impact of this regulation on small entities in greater detail than provided below. BOEMRE continues to be interested in all potential impacts of the interim final rule on small entities and welcomes comments on issues related to such impacts. These comments will assist BOEMRE in conducting further analysis than provided below regarding the economic impact of these regulations on small entities, as well as an opportunity to examine regulatory alternatives that can accomplish BOEMRE's safety goals at a lower cost to small entities.

This rulemaking affects lessees, operators of leases and drilling contractors on the OCS; thus this rule directly impacts small entities. This could include about 130 active Federal oil and gas lessees and more than a dozen drilling contractors and their suppliers. Small entities that operate under this rule are coded under the Small Business Administration's North American Industry Classification System (NAICS) codes 211111, Crude Petroleum and Natural Gas Extraction, and 213111, Drilling Oil and Gas Wells. For these NAICS code classifications, a small company is one with fewer than 500 employees. Based on these criteria, approximately 70 percent of companies

operating on the OCS (91) are considered small companies. Therefore, BOEMRE has determined that this proposed rule will have an impact on a substantial number of small entities.

The ownership share of deepwater leases for small entities is estimated to only be 12 percent. While a larger percentage of the oil service industry supporting the deepwater operators are small businesses, the lessees that hire and direct these support businesses will bear the burden of this rule. Small companies hold 55 percent of shallow water leases but a smaller portion of the costs of these regulations will affect drilling operations in shallow water.

This rule will affect every new well on the OCS. Tighter regulatory standards for drilling operations and the increased cost of meeting these requirements as a result of regulations for extra tests and well standards will now be required. We estimate that this rulemaking will impose a recurring cost of \$183 million each year for drilling OCS wells. Every operator and drilling contractor both large and small must meet the same criteria for drilling operations regardless of company size. However, the overwhelming share of the cost imposed by these regulations will fall on companies drilling deepwater wells, which are predominately the larger companies. In fact, 90 percent of the total costs will be imposed on deepwater lessees and operators where small businesses only hold 12 percent of the leases. Less than 10 percent of the total costs will apply to shallow water leases where a 55 percent lease ownership share is held by small companies. Furthermore, these compliance costs only impact drilling operations. Drilling costs are only a share of the total costs incurred by a company operating on the OCS.

Nonetheless, small companies as both lease-holders, and contractors serving lease-

holders, will bear meaningful costs under these regulations. Of the annual \$183 million in annual cost imposed by the rule, we estimate that the \$20 million will apply to small businesses in deepwater and \$9 million in shallow water. In total we estimate that \$29 million or 15.8 percent of these regulations' cost will be borne by small businesses.

Fiscal year 2009 aggregate annual Gulf of Mexico OCS oil and gas revenues were \$31.3 billion. Using the same percentages of leases held as a proxy for production value in deep and shallow water, we estimate that 74 percent (\$23.3 billion) of the OCS revenues are ultimately received by large companies and 26 percent (\$8.1 billion) by small companies. As a share of fiscal year 2009 revenues this interim final rule would cost approximately 0.67 percent of OCS revenue for large companies and only 0.36 (\$0.029/\$8.1) percent for small companies.

Even though this rule may not have a significant economic impact on small businesses, alternatives to ease impacts on small business were considered. One alternative is to exempt small businesses from the requirements of this interim final rule. A second alternative is to delay the implementation timelines to comply with the regulation. Both of these alternatives are being rejected by BOEMRE for this interim final rule because of the overriding need to reduce the chance of a catastrophic blowout event. We do not believe it is responsible for a regulator to compromise the safety of offshore personnel and the environment for any entity including small businesses. Offshore drilling is highly technical and can be hazardous, any delay may increase the interim risk of OCS drilling operations.

### **Small Business Regulatory Enforcement Fairness Act**

This interim final rule is a major rule under the Small Business Regulatory

Enforcement Fairness Act (5 U.S.C. 801 et seq.). This interim final rule:

a. Will have an annual effect on the economy of \$100 million or more. This rule will affect every new well on the OCS, and every operator, both large and small must meet the same criteria for well construction regardless of company size. This rulemaking may have a significant economic effect on a substantial number of small entities and the impact on small businesses will be analyzed more thoroughly in an Initial Regulatory Flexibility Analysis. While large companies will bear the majority of these costs, small companies as both leaseholders and contractors supporting OCS drilling operations will be affected.

Considering the new requirements for redundant barriers and new tests, we estimate that this rulemaking will add an average of about \$1.42 million to each new deepwater well drilled and completed with a MODU, \$170 thousand for each new deepwater well drilled with a platform rig, and \$90 thousand for each new shallow water well. While not an insignificant amount, we note this extra recurring cost is less than 2 percent of the cost of drilling a well in deepwater and around 1 percent for most shallow water wells.

b. Will not cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions. The impact on domestic deepwater hydrocarbon production as a result of these regulations is expected to be negative, but the size of the impact is not expected to materially impact the world oil markets. The deepwater GOM is an oil province and the domestic crude oil prices are set by the world oil markets. Currently there is sufficient spare capacity in OPEC to offset a decrease in GOM deepwater production that could occur as a result of this rule. Therefore, the increase in the price of hydrocarbon products to consumers from

the increased cost to drill and operate on the OCS is expected to be minimal. However, more of the oil for domestic consumption may be purchased from overseas markets because the cost of OCS oil and gas production will rise relative to other sources of supply. This shift would contribute negatively to our balance of trade.

c. Will not have significant adverse effects on competition, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises.

d. May have adverse effects on employment, investment, and productivity. A meaningful increase in costs as a result of more stringent regulations and increased drilling costs may result in a reduction in the pace of deepwater drilling activity on marginal offshore fields, and reduce investment in our domestic energy resources from what it otherwise would be, thereby reducing employment in OCS and related support industries. The additional regulatory requirements in this rulemaking will increase drilling costs and add to the time it takes to drill deepwater wells. The resulting reduction in profitability of drilling operations may cause some declines in related investment and employment. A typical deepwater well drilled by a MODU may cost \$90-\$100 million. The added cost of these regulations for a deepwater well is expected to be about \$1.42 million; this is less than a 2 percent decrease in productivity for drilling a deepwater well as a result of these regulations.

e. Accommodations for small business have not been made to avoid the risk of compromising the safety and environmental protections addressed in this rulemaking. Small businesses actively invest in offshore operations, owning a 12 percent interest in deepwater leases, most often as a minority partner. These regulations will make it more expensive for all interest holders in OCS leases, and we do not expect a disproportionate

impact on small businesses. However, we anticipate that the costs in this rule may contribute to one or more of the following:

1. Reduce the small business ownership share in individual deepwater leases.
2. Cause small businesses to target their investments more in shallow water leases.
3. Cause small businesses to target their investments more in onshore oil and gas operations or other natural resources.
4. Small businesses may choose to invest or partner in overseas natural resource operations.

f. There are many small businesses that support offshore oil and gas drilling operations including service, supply, and consulting companies. They will also be affected by this rule. Because we can reasonably anticipate an overall decrease in deepwater drilling activity due to the increased cost and regulatory burden, some businesses that support drilling operations may experience reduced business activity. Some small business may therefore decide to focus more on shallow water or other oil and gas offshore provinces overseas.

g. There are some small businesses that may benefit from this rulemaking. Companies that are involved with inspecting and certifying this equipment, as well as consulting companies specializing in safety and offshore drilling, could see long-term growth.

#### **Unfunded Mandates Reform Act of 1995**

This rule will impose an unfunded mandate on State, local, or tribal governments or the private sector of more than \$100 million per year. The rule will not have a significant or unique effect on State, local, or tribal governments or the private sector. A statement

containing the information required by the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.) is not required.

**Takings Implication Assessment (E.O. 12630)**

Under the criteria in E.O. 12630, this rule does not have significant takings implications. The rule is not a governmental action capable of interference with constitutionally protected property rights. A Takings Implication Assessment is not required.

**Federalism (E.O. 13132)**

Under the criteria in E.O. 13132, this rule does not have federalism implications. This rule will not substantially and directly affect the relationship between the Federal and State governments. To the extent that State and local governments have a role in OCS activities, this rule will not affect that role. A Federalism Assessment is not required.

**Civil Justice Reform (E.O. 12988)**

This rule complies with the requirements of E.O. 12988. Specifically, this rule:

- a. Meets the criteria of section 3(a) requiring that all regulations be reviewed to eliminate errors and ambiguity and be written to minimize litigation; and
- b. Meets the criteria of section 3(b)(2) requiring that all regulations be written in clear language and contain clear legal standards.

**Consultation with Indian Tribes (E.O. 13175)**

Under the criteria in E.O. 13175, we have evaluated this rule and determined that it has no substantial effects on federally recognized Indian tribes.

**Paperwork Reduction Act (PRA)**



This rule contains a collection of information that was submitted to and approved by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). The rule expands existing requirements, as well as adds new requirements in 30 CFR 250, subparts D, E, and F. The OMB approved these requirements and their respective burden hours under an emergency request, OMB Control Number 1010-0185, 44,731 hours (expiration 04/30/2011). We will be accepting comments on the information collection (IC) aspects and burdens of this rulemaking until 60 days after [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The title of the collection of information for this rule is 30 CFR 250, Increased Safety Measures for Oil and Gas Drilling, Well-Completion, and Well-Workover Operations.

Respondents primarily are the Federal OCS lessees and operators. The frequency of response varies depending upon the requirement. Responses to this collection of information are mandatory. BOEMRE will protect proprietary information according to the Freedom of Information Act (5 U.S.C. 552), its implementing regulations (43 CFR 2), 30 CFR 250.197, Data and information to be made available to the public or for limited inspection, and 30 CFR part 252, OCS Oil and Gas Information Program. Even though this rulemaking becomes effective immediately, BOEMRE will be accepting comments, see the DATES section, including the IC aspects of the rulemaking. See the ADDRESSES section for how to submit comments.

As discussed earlier in the preamble, this interim final rulemaking is a revision to various sections of the 30 CFR 250 regulations that will amend drilling regulations in subparts D, E, F, O, and Q. This includes requirements that will implement various safety measures that pertain to drilling operations. The information collected will ensure

sufficient redundancy in the BOPs; promote the integrity of the well and enhance well control; and facilitate a culture of safety through operational and personnel management. This rule will promote human safety and environmental protection.

Under § 250.198, this section lists all of the documents incorporated by reference in the 30 CFR 250 regulations. This rulemaking revises this section to include the new 30 CFR 250 document we are incorporating and the document already incorporated that we are updating. Under the PRA (5 CFR 1320), information and recordkeeping produced during customary and usual business activities are excluded from agency IC burdens. Information submitted or reported to the Federal Government that goes beyond these practices does count as burdens and is required to have OMB approval under the PRA. We consider all of the activities and operations performed in accordance with the documents incorporated by reference involved in this rulemaking to be customary and usual business activities because they are consensus standards developed by working task force groups. These groups are comprised of subject matter experts from the industry and government in the following fields: blowout preventer equipment, cementing, and well design. Any information and recordkeeping produced during the conduct of operations or activities performed under those standards, therefore, do not count as new or additional IC burdens.

The rulemaking clarifies requirements, but does not change the hour burdens in 30 CFR 250, subpart O (1010-0128, expiration 11/30/2012). This rulemaking also references, but does not change, the requirements and burdens in 30 CFR 250, subpart Q (1010-0142, expiration 11/30/2010). However, the rule does change and add new requirements to those already approved for 30 CFR 250, subparts D, E, and F, as

explained in the following paragraphs.

The current regulations on Oil and Gas Drilling Operations and associated IC are located in 30 CFR 250, subpart D. The OMB approved the IC burden of the current subpart D regulations under control number 1010-0141 (expiration 11/30/2011). This interim final rule expands the current regulatory requirements and adds new requirements that pertain to subsea and surface BOPs, well casing and cementing, secondary intervention, unplanned disconnects, recordkeeping, well completion, and well plugging (+24,144 burden hours).

The current regulations on Oil and Gas Well-Completion Operations and associated IC are located in 30 CFR 250, subpart E. The OMB approved the IC burden of the current subpart E regulations under control number 1010-0067 (expiration 12/31/2010). This interim final rule adds new regulatory requirements to this subpart that pertain to subsea and surface BOPs, secondary intervention, and well-completions (+ 4,669 burden hours).

The current regulations on Oil and Gas Well-Workover Operations and associated IC are located in 30 CFR 250, subpart F. The OMB approved the IC burden of the current subpart F regulations under control number 1010-0043 (expiration 12/31/2010). This interim final rule adds new regulatory requirements to this subpart that pertain to subsea and surface BOPs, secondary intervention, unplanned disconnects, and well-workers (+15,918 burden hours).

When this rulemaking becomes effective, the additional 30 CFR 250, subparts D, E, and F paperwork burdens will be incorporated into their respective primary collections; 1010-0141, 1010-0067, and 1010-0043, respectively.

The following table provides a breakdown of the new burdens.

Citation 30 CFR 250	Reporting & Recordkeeping Requirement	Hour Burden	Average No. of Annual Responses	Annual Burden Hours
<b>Subpart D</b>				
408, 409; 410-418; 420(a)(6); 423(b)(3), (c)(1); 449(j), (k)(1); plus various references in subparts A, B, D, E, H, P, Q.	Apply for permit to drill/revised APD that includes any/all supporting documentation/evidence [test results, calculations, verifications, procedures, criteria, qualifications, etc.] and requests for various approvals required in subpart D (including §§ 250.423, 424, 427, 432, 442(c), 447, 448(c), 449(j), (k), 451(g), 456(a)(3), (f), 460, 490(c)(1), (2)) and submitted via Form MMS-123 (Application for Permit to Drill).	6	MMS-123 700	4,200
416(g)(2)	Provide 24 hour advance notice of location of shearing ram tests or inspections; allow BOEMRE access to witness testing, inspections and information verification.	10 mins.	6 notifications	1
420(b)(3)	Submit dual mechanical barrier documentation after installation.	30 mins.	700 submissions	350
423(a)	Request approval of other pressure casing test pressures per District Manager.	Burden covered under 1010-0141.		0
423(b)(4), (c)(2)	Perform pressure casing test; document results and make available to BOEMRE upon request.	30 mins.	700 drilling ops x 5 tests per ops = 3,500 tests	1,750
442(c)	Request alternative method for the accumulator system.	Burden covered under 1010-0141.		0
442(h)	Label all functions on all panels;	30 mins.	30 panels	15
442(i)	Develop written procedures for management system for operating the BOP stack and LMRP.	4	30 procedures	120
442(j)	Establish minimum requirements for authorized personnel to operate BOP equipment; require training.	Burden covered under 1010-0128.		0
446(a)	Document BOP maintenance and inspection procedures used; record results of BOP inspections and maintenance actions; maintain records for 2 years; make available to BOEMRE upon request.	1	105 rigs	105
449; 450; 467	Function test annular and rams; document results every 7 days between BOP tests (biweekly). Note: part of BOP test.	Burden covered under 1010-0141.		0

<b>Citation 30 CFR 250</b>	<b>Reporting &amp; Recordkeeping Requirement</b>	<b>Hour Burden</b>	<b>Average No. of Annual Responses</b>	<b>Annual Burden Hours</b>
449(j)(2)	Test all ROV intervention functions on your subsea BOP stack; document all test results; make available to BOEMRE upon request.	10	110 wells	1,100
449(k)(2)	Function test autoshear and deadman on your subsea BOP stack during stump test; document all test results; make available to BOEMRE upon request.	30 mins.	110 wells	55
456(i)	Record results of drilling fluid tests in drilling report.	Burden covered under 1010-0141.		0
456(j)	Submit detailed step by step procedures describing displacement of fluids with your APD/APM [this submission obtains District Manager approval].	2	110 wells	220
460; 465; 449(j), (k)(1); 516(d)(8), (d)(9); 616(h)(1), (2); plus various references in subparts A, D, E, F, H, P, and Q	Submit revised plans, changes, well/drilling records, procedures, certifications that include any/all supporting documentation etc., submitted on Form MMS-124 (Application for Permit to Modify).	4	MMS-124 4,057	16,228
<b>Subtotal</b>			<b>9,458 responses</b>	<b>24,144 hours</b>
<b>Subpart E</b>				
516(d)(8)	Submit test procedures with your APM for approval.	Burden covered under 1010-0141.		0
516(d)(8)	Function test ROV interventions on your subsea BOP stack; document all test results; make available to BOEMRE upon request.	10	110 wells	1,100
516(d)(9)	Function test autoshear and deadman on your subsea BOP stack during stump test; document all test results; make available to BOEMRE upon request.	30 mins.	1,048 completions	524
516(g)(1)	Document the procedures used for BOP inspections; record results; maintain records for 2 years; make available to BOEMRE upon request.	7 days x 12 hrs/ day = 84	105 rigs / once every 3 years = 35 per year	2,940
516(g)(2)	Request alternative method to inspect a marine riser.	Burden covered under 1010-0067.		0
516(h)	Document the procedures used for BOP maintenance; record results; maintain records for 2 years; make available to BOEMRE upon request.	1	105 rigs	105

<b>Citation 30 CFR 250</b>	<b>Reporting &amp; Recordkeeping Requirement</b>	<b>Hour Burden</b>	<b>Average No. of Annual Responses</b>	<b>Annual Burden Hours</b>
<b>Subtotal</b>			<b>1,298 responses</b>	<b>4,669 hours</b>
<b>Subpart F</b>				
616(h)(1)	Test all ROV intervention functions on your subsea BOP stack; document all test results; make available to BOEMRE upon request.	10 hours	1,226 workovers	12,260
616(h)(2)	Function test autoshear and deadman on your subsea BOP stack during stump test; document all test results; make available to BOEMRE upon request.	30 mins.	1,226 workovers	613
617(a)(1)	Document the procedures used for BOP inspections; record results; maintain records for 2 years; make available to BOEMRE upon request.	7 days x 12 hrs/ day = 84	105 rigs / once every 3 years = 35 per year	2,940
617(a)(2)	Request approval to use alternative method to inspect a marine riser.	Burden covered under 1010-0067.		0
617(b)	Document the procedures used for BOP maintenance; record results; maintain records for 2 years; make available to BOEMRE upon request.	1	105 rigs	105
<b>Subtotal</b>			<b>2,592 responses</b>	<b>15,918 hours</b>
<b>Subpart Q</b>				
1712(f), (g); 1721(h)	Submit with your APM, archaeological and sensitive biological features; Registered Professional Engineer certification.	Burden covered under 1010-0141.		0
1721(e)	Identify and report subsea wellheads, casing stubs, or other obstructions.	USCG requirements.		0
<b>Total</b>			<b>13,348 Responses</b>	<b>44,731 Hours</b>

BOEMRE plans to follow this interim final rule with a request for a standard, 3-year approval by OMB. The request will be processed under OMB's normal clearance procedures in accordance with the provisions of OMB regulation 5 CFR 1320.10. To facilitate processing of the normal clearance submission to OMB, BOEMRE invites the general public to comment on: (1) Whether this collection of information is necessary for the proper performance of BOEMRE's functions, including whether the information

has practical utility; (2) the accuracy of the estimates of the burden of the information collection, including the validity of the methodologies and assumptions used; (3) ways to enhance the quality, utility, and clarity of the information to be collected; (4) ways to minimize the burden of the information collection on respondents, including through the use of automated collection techniques or other forms of information technology; and (5) estimates of capital or start up costs, and costs of operation, maintenance and purchase of services to provide the information.

An agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public may comment, at any time, on the accuracy of the IC burden in this rule and may submit any comments to the Department of the Interior; Bureau of Ocean Energy Management, Regulation and Enforcement; Attention: Regulations and Standards Branch; Mail Stop 4024; 381 Elden Street; Herndon, Virginia 20170-4817.

### **National Environmental Policy Act of 1969**

We have prepared an environmental assessment to determine whether this rule will have a significant impact on the quality of the human environment under the National Environmental Policy Act of 1969. This rule does not constitute a major Federal action significantly affecting the quality of the human environment. A detailed statement under the National Environmental Policy Act of 1969 is not required because we reached a Finding of No Significant Impact. A copy of the Environmental Assessment can be viewed at [www.Regulations.gov](http://www.Regulations.gov) (type in “environmental assessment” for the document type and use the keyword/ID “BOEM-2010-0034”).

### **Data Quality Act**

In developing this rule, we did not conduct or use a study, experiment, or survey requiring peer review under the Data Quality Act (Pub. L. 106-554, app. C § 515, 114 Stat. 2763, 2763A-153-154).

### **Effects on the Energy Supply (E.O. 13211)**

This rule is a significant rule and is subject to review by the Office of Management and Budget under E.O. 12866. The rule does have an effect on energy supply, distribution, or use because its provisions may delay development of some OCS oil and gas resources. The delay stems from the extra drill time and cost imposed on new wells which will somewhat slow exploration and development operations. We estimate an average delay of 2 days and cost of \$1.42 million for most deepwater wells in the GOM.

Increased imports or inventory drawdowns should compensate for most of the delay or reduction in domestic production. The recurring costs imposed on new drilling by this rule are very small (2 percent) relative to the cost of drilling a well in deepwater. In view of the high risk-reward associated with deepwater exploration in general, we do not expect this small regulatory surcharge from this rule to result in meaningful reduction in discoveries. Thus, we expect the net change in supply associated with this rule will cause only a slight increase in oil and gas prices relative to what they otherwise would have been. Normal volatility in both oil and gas market prices overshadow these rule related price effects, so we consider this an insignificant effect on energy supply and price.

### **Clarity of this Regulation**

We are required by E.O. 12866, E.O. 12988, and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:



- a. Be logically organized;
- b. Use the active voice to address readers directly;
- c. Use clear language rather than jargon;
- d. Be divided into short sections and sentences; and
- e. Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the "ADDRESSES" section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that you find unclear, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

#### **Public Availability of Comments**

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

## **Appendix A**

### **BOEMRE Response to the Deepwater Horizon Event and Resulting Oil Spill**

#### **I. Description**

On April 20, 2010, the crew of the Transocean drilling rig Deepwater Horizon was preparing to temporarily abandon BP's discovery well at the Macondo prospect, 52 miles from shore in 4,992 feet of water in the GOM. An explosion and subsequent fire on the rig caused 11 fatalities and several injuries. The rig sank 2 days later, resulting in an uncontrolled release of oil that was declared a spill of national significance.

#### **II. Status of BOEMRE/USCG Joint Investigation**

The DOI and USCG are undertaking a joint investigation into the causes of the explosions and fire on the Deepwater Horizon. This joint investigation includes members of BOEMRE and the USCG and involves issuing subpoenas for documents and testimony, obtaining expert analyses of data and reports, holding public hearings, calling witnesses, and taking any other steps necessary to determine the cause of the spill. The purpose of this joint investigation is to develop conclusions about the cause and recommendations for preventing a similar event. The facts collected at the public hearings, along with the lead investigators' conclusions and recommendations, will be forwarded to USCG Headquarters and BOEMRE for approval. Once approved, the final investigative report will be made available to the public and the media. The team has been given 9 months, from the date of the convening order (April 27, 2010), to submit the final report.

#### **III. DOI and BOEMRE actions**

In response to the Deepwater Horizon event, DOI and BOEMRE have taken several

actions, as outlined below. Numerous other investigations and reviews have been commenced, including an investigation by the DOI Safety Oversight Board; an investigation by the President's National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling; the USCG incident Specific Preparedness Review; a review by the National Academy of Engineering; a review by the U.S. Chemical Safety Board; and others. This Appendix addresses only BOEMRE actions. These are as follows:

1. Issued a Joint Safety Alert with USCG on April 30, 2010.
2. Published the Safety Measures Report on May 27, 2010, at the request of the President.
3. Issued National NTL No. 2010-N05, "Increased Safety Measures for Energy Development on the OCS," to implement the immediate recommendations from the Safety Measures Report.
4. Issued National NTL No. 2010-N06, "Information Requirements for Exploration Plans, Development and Production Plans, and Development Operations Coordination Documents on the OCS."
5. Implemented Secretarial Decision dated July 12, 2010, ordering the suspensions of drilling activities that use a subsea BOP stack and drilling from floating facilities with a surface BOP stack.
6. Held public meetings to collect information and views about deepwater drilling safety reforms, blowout containment, and oil spill response.

#### **1. Joint USCG-BOEMRE Safety Alert**

On April 30, 2010, USCG and BOEMRE issued a National Safety Alert No. 2 concerning the Deepwater Horizon event and resulting oil spill. BOEMRE and the

USCG included the following safety recommendations to operators and drilling contractors:

(1) Examine all well control equipment (both surface and subsea) currently being used to ensure that it has been properly maintained and is capable of shutting in the well during emergency operations. Ensure that the ROV hot-stabs are function-tested and are capable of actuating the BOP.

(2) Review all rig drilling/casing/completion practices to ensure that well control contingencies are not compromised at any point while the BOP is installed on the wellhead.

(3) Review all emergency shutdown and dynamic positioning procedures that interface with emergency well control operations.

(4) Inspect lifesaving and firefighting equipment for compliance with Federal requirements.

(5) Ensure that all crew members are familiar with emergency/firefighting equipment, as well as participate in an abandon ship drill. Operators are reminded that the review of emergency equipment and drills should be conducted after each crew change out.

(6) Exercise emergency power equipment to ensure proper operation.

(7) Ensure that all personnel involved in well operations are properly trained and capable of performing their tasks under both normal drilling and emergency well control operations.

## **2. Safety Measures Report**

### **a. Summary**

On April 30, 2010, the President ordered the Secretary of the Interior to conduct a thorough review of this event and to report, within 30 days, on what, if any, additional precautions and technologies should be required to improve the safety of oil and gas exploration and production operations on the OCS. The Safety Measures Report was presented to the President on May 27, 2010. A copy of the report is available at:

<http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=33646>.

The Safety Measures Report was developed without the benefit of the findings from the ongoing investigations into the root causes of the explosions and fire on the Deepwater Horizon and the resulting oil spill. In the coming months, those investigations will likely suggest refinements to some of this report's recommendations, as well as additional safety measures.

The Safety Measures Report includes a history of OCS production, spills, and blowouts; a review of the existing U.S. regulatory and enforcement structure; a survey of other countries' regulatory approaches; and a summary of existing BOEMRE-sponsored studies on technologies that could reduce the risk of blowouts. The report examines all aspects of drilling operations, including equipment, procedures, personnel management, and inspections and verification in an effort to identify safety and environmental protection measures that would reduce the risk of a catastrophic event. In particular, this report examines several issues highlighted by the Deepwater Horizon event regarding operational and personnel safety while conducting drilling operations in deepwater environments.

The Safety Measures Report includes a number of recommendations to improve the

safety of oil and gas drilling operations on the OCS. These recommendations address:

- Well-control and well abandonment operations;
- Specific requirements for devices, such as BOPs and their testing;
- Industry practices;
- Worker training;
- Inspection protocol and operator oversight; and
- The responsibility of the Department for safety and enforcement.

The draft recommendations were peer reviewed by seven experts identified by the National Academy of Engineering.

**b. Implementation teams** To inform the efforts related to implementation of some of the recommendations from the Safety Measures Report, the DOI Safety Oversight Board Report, the recommendations to be developed by the President’s bipartisan National Commission and other investigative and reviewing bodies, DOI is establishing Department-led implementation teams. These teams, initially described as “strike teams” in the Safety Measures Report, will evaluate various issues, both highly technical and non-technical.

The implementation teams will seek input as appropriate from academia, industry, and other technical experts and stakeholders. They will develop and present their recommendations for further actions to address additional environmental protection and safety measures. The Department may use the recommendations from these implementation teams to:

- (1) Inform future rulemaking,
- (2) Develop internal policy for inspections and enforcement of regulations,

(3) Identify future research needs.

### **3. NTL No. 2010-N05 - Increased Safety Measures for Energy Development on the OCS.**

The NTL No. 2010-N05, “Increased Safety Measures for Energy Development on the OCS,” addressed the recommendations from the Safety Measures Report that warranted immediate implementation. The link to this NTL is:

<http://www.gomr.boemre.gov/homepg/regulate/regs/ntls/2010NTLs/10-n05.pdf>.

BOEMRE issued this NTL on June 8, 2010, as a result of the Deepwater Horizon event. The NTL addresses the recommendations in the report to the President entitled, “Increased Safety Measures for Energy Development on the Outer Continental Shelf” dated May 27, 2010, and details under then-existing regulations the requirements lessees and operators must meet to operate on the OCS. Following are the specific items included in the NTL:

Operators are required to:

- Verify compliance with existing regulations and Safety Alert issued on April 30, 2010.
- Submit BOP and well control system configuration information for the drilling rig that was being used.
- Recertify all BOP equipment before resuming drilling.
- Have documentation showing that the BOP has been maintained according to the regulations at 30 CFR 250.446(a). The operators are required to maintain records and make them available upon request.

- Obtain independent third party verification that the BOP stack is designed for the specific equipment on the rig and compatible with the specific well location, well design, and well execution plan; the BOP stack has not been compromised or damaged from previous service; and the BOP stack will operate in the conditions in which it will be used.
- Have a secondary control system with ROV intervention capabilities, including the ability to close one set of blind-shear rams and one set of pipe rams and unlatch the LMRP.
- Have an emergency shut-in system in the event that you lose power to the BOP stack, have an unplanned disconnection of the riser from the BOP stack, or experience another emergency situation.
- Function test the hot stabs that would be used to interface with the ROV intervention panel during the stump test.
- Obtain an independent third party verification that provides sufficient information showing that the blind-shear rams installed in the BOP stack are capable of shearing the drill pipe in the hole under maximum anticipated surface pressures.
- If the blind-shear rams or casing shear rams are activated in a well control situation in which pipe or casing was sheared, operators must inspect and test the BOP stack and its components, after the situation is fully controlled.
- Have all well casing designs and cementing program/procedures certified by a Professional Engineer, verifying the casing design is appropriate for the purpose for which it is intended under expected wellbore conditions.



- Submit the relevant information discussed in the NTL prior to commencing those operations, and drilling may not commence without BOEMRE approval.

**4. NTL No. 2010-N06 - Information Requirements for Exploration Plans, Development and Production Plans, and Development Operations Coordination Documents on the OCS.**

The link to this NTL is:

<http://www.gomr.boemre.gov/homepg/regulate/regs/ntls/2010NTLs/10-n06.pdf>.

BOEMRE issued this NTL on June 18, 2010. This NTL provides guidance to lessees and operators regarding the blowout and oil spill information required in the exploration and development plan documents submitted to BOEMRE, including:

**A blowout scenario as required by 30 CFR 250.213(g) and 250.243(h), including:**

- Highest volume of liquid hydrocarbons;
- Estimated flow rate, total volume, and maximum duration;
- Potential for the well to bridge over;
- Likelihood for surface intervention to stop the blowout;
- Availability of a rig to drill a relief well;
- Time frame to drill a relief well.

**A description of the assumptions and calculations used to determine the volume of the worst case discharge scenario, including:**

- Well design;
- Reservoir characteristics;
- Fluid characteristics;
- Pressure, volume, and temperature characteristics;

Analog reservoir assumptions;

Supporting calculations and models used in determining worst case scenario.

**5. Secretarial Decision suspending drilling activities that use subsea BOP stacks and drilling from floating facilities with a surface BOP stack.**

On July 12, 2010, the Secretary issued a decision directing BOEMRE to suspend the drilling of wells using subsea BOPs or surface BOPs on floating facilities, and to cease approval of pending and future applications for permits to drill using subsea BOPs or surface BOPs on floating facilities. These directives apply in the GOM and Pacific regions through November 30, 2010, subject to modification if the Secretary determines that the significant threats to life, property, and the environment set forth in his decision have been sufficiently addressed. This includes additional information about the causes of the Deepwater Horizon Oil Spill. Several investigations and reviews are being undertaken to identify the root causes of the disaster, including a joint BOEMRE-USCG investigation, a review by the NAE, on-going Congressional inquiries, and the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (Presidential Commission). The results of these will better inform DOI decision-making and longer-term rulemaking.

Following this decision, on July 12, 2010, BOEMRE issued suspension orders of most deepwater drilling operations on the OCS through November 30, 2010. BOEMRE stopped approval of pending and future deepwater drilling applications in the GOM and Pacific regions.

**6. Held public meetings to collect information and views about deepwater drilling safety reforms, blowout containment, and oil spill response.**

As directed by the Secretary in the Decision of July 12, 2010, the BOEMRE Director led a series of public meetings to collect information and views about deepwater drilling safety reforms, blowout containment, and oil spill response. The Director solicited input from the general public, state, and local leaders, experts from academia, the environmental community, and the oil and gas industry. The link to the Public Forums on Offshore Drilling is: <http://www.boemre.gov/forums/>. The webpage provides information and presentations from each meeting. The meetings were held in August and September in the following cities:

New Orleans, Louisiana

Mobile, Alabama

Pensacola, Florida

Santa Barbara, California

Anchorage, Alaska

Houston, Texas

Biloxi, Mississippi

Lafayette, Louisiana.

**List of Subjects in 30 CFR Part 250:**

Administrative practice and procedure, Continental shelf, Incorporation by reference, Oil and gas exploration, Public lands--mineral resources, Public lands--rights-of-way, Reporting and recordkeeping requirements.

\_\_October 1, 2010\_\_\_\_\_

Dated.

---

Wilma A. Lewis  
Assistant Secretary – Land and Minerals Management.

For the reasons stated in the preamble, under the authority of 43 U.S.C. 1334 and Section 2 of Reorganization Plan No.3 of 1950, 64 Stat. 1262, as amended, the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) is amending 30 CFR chapter II as follows:

Title 30 -- MINERAL RESOURCES

CHAPTER II -- BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION AND ENFORCEMENT, DEPARTMENT OF THE INTERIOR

**PART 250—OIL AND GAS AND SULPHUR OPERATIONS IN THE OUTER CONTINENTAL SHELF**

1. The authority citation for part 250 continues to read as follows:

**Authority:** 31 U.S.C. 9701, 43 U.S.C. 1334.

2. Amend § 250.198 by:
  - a. Adding a new paragraph (a)(3),
  - b. Revising paragraph (h)(63), and
  - c. Adding new paragraph (h)(79) to read as follows:

**§ 250.198 Documents incorporated by reference.**

(a) \* \* \*

(3) The effect of incorporation by reference of a document into the regulations in this part is that the incorporated document is a requirement. When a section in this part incorporates all of a document, you are responsible for complying with the provisions of that entire document, except to the extent that section provides otherwise. When a section in this part incorporates part of a document, you are responsible for complying with that part of the document as provided in that section. If any incorporated document

uses the word should, it means must for purposes of these regulations.

\* \* \* \* \*

(h) \* \* \*

(63) API RP 53, Recommended Practices for Blowout Prevention Equipment Systems for Drilling Wells, Third Edition, March 1997; reaffirmed September 2004, Order No. G53003; incorporated by reference at § 250.442(c); § 250.446(a); § 250.516(g)(1); §250.516(h); and § 250.617(a)(1), and (b);

\* \* \* \* \*

(79) API RP 65–Part 2, Isolating Potential Flow Zones During Well Construction; First Edition, May 2010; Product No. G65201; incorporated by reference at § 250.415(f).

\* \* \* \* \*

3. Amend § 250.415 as follows:

a. Revise paragraphs (c), (d), and (e)(2), and

b. Add new paragraph (f) to read as follows:

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

\* \* \* \* \*

(c) Type and amount of cement (in cubic feet) planned for each casing string;

(d) \* \* \* Your program must provide protection from thaw subsidence and freezeback effect, proper anchorage, and well control;

(e) \* \* \*

(2) An “area known to contain a shallow water flow hazard” is a zone or geologic formation for which drilling has confirmed the presence of shallow water flow; and

(f) A written description of how you evaluated the best practices included in API RP

65–Part 2, Isolating Potential Flow Zones During Well Construction (incorporated by reference as specified in § 250.198). Your written description must identify the mechanical barriers and cementing practices you will use for each casing string (reference API RP 65–Part 2, Sections 3 and 4).

4. Amend § 250.416 by revising paragraphs (d) and (e) and adding new paragraphs (f) and (g) to read as follows:

**§ 250.416 What must I include in the diverter and BOP descriptions?**

\* \* \* \* \*

(d) A schematic drawing of the BOP system that shows the inside diameter of the BOP stack, number and type of preventers, all control systems and pods, location of choke and kill lines, and associated valves;

(e) Independent third party verification and supporting documentation that show the blind-shear rams installed in the BOP stack are capable of shearing any drill pipe in the hole under maximum anticipated surface pressure. The documentation must include test results and calculations of shearing capacity of all pipe to be used in the well including correction for MASP;

(f) When you use a subsea BOP stack, independent third party verification that shows:

(1) the BOP stack is designed for the specific equipment on the rig and for the specific well design;

(2) The BOP stack has not been compromised or damaged from previous service;

(3) The BOP stack will operate in the conditions in which it will be used; and

(g) The qualifications of the independent third party referenced in paragraphs (e) and (f) of this section:

(1) The independent third party in paragraph (e) in this section must be a technical classification society; an API-licensed manufacturing, inspection, or certification firm; or a licensed professional engineering firm capable of providing the verifications required under this part. The independent third party must not be the original equipment manufacturer (OEM).

(2) You must:

(i) Include evidence that the firm you are using is reputable, the firm or its employees hold appropriate licenses to perform the verification in the appropriate jurisdiction, the firm carries industry-standard levels of professional liability insurance, and the firm has no record of violations of applicable law.

(ii) Ensure that an official representative of BOEMRE will have access to the location to witness any testing or inspections, and verify information submitted to BOEMRE. Prior to any shearing ram tests or inspections, you must notify the District Manager at least 24 hours in advance.

5. Amend § 250.418 as follows:

- a. Revise paragraph (g),
- b. Redesignate paragraph (h) as paragraph (j), and
- c. Add new paragraphs (h) and (i) to read as follows:

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

\*   \*   \*   \*   \*

(g) A request for approval if you plan to wash out or displace some cement to facilitate casing removal upon well abandonment;

(h) Certification of your casing and cementing program as required in § 250.420(a)(6);

(i) Description of qualifications required by § 250.416(f) of any independent third party; and

\* \* \* \* \*

6. Amend § 250.420 as follows:

a. Revise paragraphs (a)(4) and (a)(5),

b. Add new paragraph (a)(6),

c. Add new paragraph (b)(3) to read as follows:

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

\* \* \* \* \*

(a) \* \* \*

(4) Protect freshwater aquifers from contamination;

(5) Support unconsolidated sediments; and

(6) Include certification signed by a Registered Professional Engineer that there will be at least two independent tested barriers, including one mechanical barrier, across each flow path during well completion activities and that the casing and cementing design is appropriate for the purpose for which it is intended under expected wellbore conditions. The Registered Professional Engineer must be registered in a State in the United States. Submit this certification with your APD (Form MMS-123).

(b) \* \* \*



(3) For the final casing string (or liner if it is your final string), you must install dual mechanical barriers in addition to cement, to prevent flow in the event of a failure in the cement. These may include dual float valves, or one float valve and a mechanical barrier. You must submit documentation to BOEMRE 30 days after installation of the dual mechanical barriers.

\* \* \* \* \*

7. Revise § 250.423 to read as follows:

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

(a) The table in this section describes the minimum test pressures for each string of casing. You may not resume drilling or other down-hole operations until you obtain a satisfactory pressure test. If the pressure declines more than 10 percent in a 30-minute test, or if there is another indication of a leak, you must re-cement, repair the casing, or run additional casing to provide a proper seal. The District Manager may approve or require other casing test pressures.

Casing type	Minimum test pressure
(1) Drive or Structural,	Not required.
(2) Conductor,	200 psi.
(3) Surface, Intermediate, and Production,	70 percent of its minimum internal yield.

(b) You must ensure proper installation of casing or liner in the subsea wellhead or liner hanger.

(1) You must ensure that the latching mechanisms or lock down mechanisms are engaged upon installation of each casing string or liner.

(2) You must perform a pressure test on the casing seal assembly to ensure proper installation of casing or liner. You must perform this test for the intermediate and production casing strings or liner.

(3) You must submit for approval with your APD, test procedures and criteria for a successful test.

(4) You must document all your test results and make them available to BOEMRE upon request.

(c) You must perform a negative pressure test on all wells to ensure proper casing installation. You must perform this test for the intermediate and production casing strings.

(1) You must submit for approval with your APD, test procedures and criteria for a successful test.

(2) You must document all your test results and make them available to BOEMRE upon request.

8. Amend § 250.442 by revising the section heading and the section to read as follows:

**§ 250.442 What are the requirements for a subsea BOP system?**

When you drill with a subsea BOP system, you must install the BOP system before drilling below the surface casing. The District Manager may require you to install a subsea BOP system before drilling below the conductor casing if proposed casing setting depths or local geology indicate the need. The table in this paragraph outlines your requirements.

<b>When drilling with a subsea BOP system, you must:</b>	<b>Additional requirements.</b>
(a) Have at least four remote-controlled,	You must have at least one annular BOP, two

<b>When drilling with a subsea BOP system, you must:</b>	<b>Additional requirements.</b>
hydraulically operated BOPs.	BOPs equipped with pipe rams, and one BOP equipped with blind-shear rams. The blind-shear rams must be capable of shearing any drill pipe in the hole under maximum anticipated surface pressures.
(b) Have an operable dual-pod control system to ensure proper and independent operation of the BOP system.	
(c) Have an accumulator system to provide fast closure of the BOP components and to operate all critical functions in case of a loss of the power fluid connection to the surface.	The accumulator system must meet or exceed the provisions of Section 13.3, Accumulator Volumetric Capacity, in API RP 53, Recommended Practices for Blowout Prevention Equipment Systems for Drilling Wells (incorporated by reference as specified in § 250.198). The District Manager may approve a suitable alternate method.
(d) Have a subsea BOP stack equipped with remotely operated vehicle (ROV) intervention capability.	At a minimum, the ROV must be capable of closing one set of pipe rams, closing one set of blind-shear rams and unlatching the LMRP.
(e) Maintain an ROV and have a trained ROV crew on each floating drilling rig on a continuous basis. The crew must examine all ROV related well control equipment (both surface and subsea) to ensure that it is properly maintained and capable of shutting in the well during emergency operations.	The crew must be trained in the operation of the ROV. The training must include simulator training on stabbing into an ROV intervention panel on a subsea BOP stack.
(f) Provide autoshear and deadman systems for dynamically positioned rigs.	<p>(1) <u>Autoshear system</u> means a safety system that is designed to automatically shut in the wellbore in the event of a disconnect of the LMRP. When the autoshear is armed, a disconnect of the LMRP closes the shear rams. This is considered a “rapid discharge” system.</p> <p>(2) <u>Deadman System</u> means a safety system that is designed to automatically close the wellbore in the event of a simultaneous absence of hydraulic supply and signal transmission capacity in both subsea control pods. This is considered a “rapid discharge” system.</p> <p>(3) You may also have an acoustic system.</p>
(g) Have operational or physical barrier(s) on BOP control panels to prevent accidental disconnect functions.	Incorporate enable buttons on control panels to ensure two-handed operation for all critical functions.
(h) Clearly label all control panels for the subsea BOP system.	Label other BOP control panels such as hydraulic control panel.
(i) Develop and use a management system for operating the BOP system, including the prevention of accidental or unplanned disconnects of the system.	The management system must include written procedures for operating the BOP stack and LMRP (including proper techniques to prevent accidental disconnection of these components) and minimum knowledge requirements for personnel authorized to operate and maintain BOP components.
(j) Establish minimum requirements for personnel authorized to operate critical BOP equipment.	Personnel must have: (1) Training in deepwater well control theory and practice according to the requirements of 30 CFR

When drilling with a subsea BOP system, you must:	Additional requirements.
	250, subpart O; and (2) A comprehensive knowledge of BOP hardware and control systems.
(k) Before removing the marine riser, displace the fluid in the riser with seawater.	You must maintain sufficient hydrostatic pressure or take other suitable precautions to compensate for the reduction in pressure and to maintain a safe and controlled well condition.
(l) Install the BOP stack in a glory hole when in ice-scour area.	Your glory hole must be deep enough to ensure that the top of the stack is below the deepest probable ice-scour depth.

9. Amend § 250.446 by revising paragraph (a) to read as follows:

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

(a) You must maintain and inspect your BOP system to ensure that the equipment functions properly. The BOP maintenance and inspections must meet or exceed the provisions of Sections 17.10 and 18.10, Inspections; Sections 17.11 and 18.11, Maintenance; and Sections 17.12 and 18.12, Quality Management, described in API RP 53, Recommended Practices for Blowout Prevention Equipment Systems for Drilling Wells (incorporated by reference as specified in § 250.198). You must document the procedures used, record the results of your BOP inspections and maintenance actions, and make available to BOEMRE upon request. You must maintain your records on the rig for 2 years or from the date of your last major inspection, whichever is longer;

\* \* \* \* \*

10. Amend § 250.449, by revising paragraphs (h) and (i) and adding new paragraphs (j) and (k) to read as follows:

**§ 250.449 What additional BOP testing requirements must I meet?**

\* \* \* \* \*

(h) Function test annular and ram BOPs every 7 days between pressure tests;

(i) Actuate safety valves assembled with proper casing connections before running casing;

(j) Test all ROV intervention functions on your subsea BOP stack during the stump test. You must also test at least one set of rams during the initial test on the seafloor. You must submit test procedures with your APD or APM for District Manager approval. You must:

(1) ensure that the ROV hot stabs are function tested and are capable of actuating, at a minimum, one set of pipe rams and one set of blind-shear rams and unlatching the LMRP; and

(2) document all your test results and make them available to BOEMRE upon request;

(k) Function test autoshear and deadman systems on your subsea BOP stack during the stump test. You must also test the deadman system during the initial test on the seafloor.

(1) You must submit test procedures with your APD or APM for District Manager approval.

(2) You must document all your test results and make them available to BOEMRE upon request.

11. Amend § 250.451 by adding new paragraph (i) to the table to read as follows:

**§ 250.451 What must I do in certain situations involving BOP equipment or systems?**

\* \* \* \* \*

If you encounter the following situation:	Then you must . . .
* * *	* * * *
(i) You activate blind-shear rams or casing	Retrieve, physically inspect, and conduct a full

shear rams during a well control situation, in which pipe or casing is sheared.	pressure test of the BOP stack after the situation is fully controlled.
* * *	* * *

12. Amend § 250.456 by:

- a. Revising the last sentence in paragraph (i),
- b. Redesignating paragraph (j) as (k), and
- c. Adding a new paragraph (j) to read as follows:

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

\* \* \* \* \*

(i) \* \* \* You must record the results of these tests in the drilling fluid report;

(j) Before displacing kill-weight drilling fluid from the wellbore, you must obtain prior approval from the District Manager. To obtain approval, you must submit with your APD or APM your reasons for displacing the kill-weight drilling fluid and provide detailed step-by-step written procedures describing how you 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 you will conduct to ensure integrity of independent barriers,
- (3) BOP procedures you will use while displacing kill weight fluids, and
- (4) procedures you will use to monitor fluids entering and leaving the wellbore; and

\* \* \* \* \*

13. Amend § 250.515 by adding new paragraphs (b)(5) and (e) to read as follows:

**§ 250.515 Blowout prevention equipment.**

\* \* \* \* \*

(b) \* \* \*

<b>When</b>	<b>The minimum BOP stack must include</b>
-------------	---

* * * * *
(5) You use a subsea BOP stack   The requirements in § 250.442(a) of this part.
* * * * *

\* \* \* \* \*

(e) The subsea BOP system for well-completions must meet the requirements in § 250.442 of this part.

14. Amend § 250.516 by:

- a. Revising (d)(6);
- b. Adding new paragraphs (d)(8) and (d)(9); and
- c. Revising paragraphs (g) and (h) to read as follows:

**§ 250.516 Blowout preventer system tests, inspections, and maintenance.**

\* \* \* \* \*

(d) \* \* \*

(6) Pressure-test variable bore-pipe rams against all sizes of pipe in use, excluding drill collars and bottom-hole tools;

\* \* \* \* \*

(8) Test all ROV intervention functions on your subsea BOP stack during the stump test. You must also test at least one set of rams during the initial test on the seafloor. You must submit test procedures with your APM for District Manager approval. You must:

(i) Ensure that the ROV hot stabs are function tested and are capable of actuating, at a minimum, one set of pipe rams and one set of blind-shear rams and unlatching the LMRP;

(ii) Document all your test results and make them available to BOEMRE upon request; and

(9) Function test autoshear and deadman systems on your subsea BOP stack during the stump test. You must also test the deadman system during the initial test on the seafloor.

(i) You must submit test procedures with your APM for District Manager approval.

(ii) You must document all your test results and make them available to BOEMRE upon request.

\* \* \* \* \*

(g) BOP inspections. (1) You must inspect your BOP system to ensure that the equipment functions properly. The BOP inspections must meet or exceed the provisions of Sections 17.10 and 18.10, Inspections, described in API RP 53, Recommended Practices for Blowout Prevention Equipment Systems for Drilling Wells (incorporated by reference as specified in § 250.198). You must document the procedures used, record the results, and make them available to BOEMRE upon request. You must maintain your records on the rig for 2 years or from the date of your last major inspection, whichever is longer.

(2) You must visually inspect your BOP system and marine riser at least once each day if weather and sea conditions permit. You may use television cameras to inspect this equipment. The District Manager may approve alternate methods and frequencies to inspect a marine riser.

(h) BOP maintenance. You must maintain your BOP system to ensure that the equipment functions properly. The BOP maintenance must meet or exceed the provisions of Sections 17.11 and 18.11, Maintenance; and Sections 17.12 and 18.12, Quality Management, described in API RP 53, Recommended Practices for Blowout



Prevention Equipment Systems for Drilling Wells (incorporated by reference as specified in § 250.198). You must document the procedures used, record the results, and make available to BOEMRE upon request. You must maintain your records on the rig for 2 years or from the date of your last major inspection, whichever is longer.

\* \* \* \* \*

15. Amend § 250.615 by:

- a. Adding new paragraph (b)(5),
- b. Redesignating paragraphs (e) through (g) as (f) through (h), and
- c. Adding new paragraph (e) to read as follows:

**§ 250.615 Blowout prevention equipment.**

\* \* \* \* \*

(b) \* \* \*

When	The minimum BOP stack must include
* * *	* * * *
(5) You use a subsea BOP stack	The requirements in § 250.442(a) of this part.
* * *	* * * *

(e) The subsea BOP system for well-workover operations must meet the requirements in § 250.442 of this part.

\* \* \* \* \*

16. Amend § 250.616 by adding new paragraph (h) to read as follows:

**§ 250.616 Blowout preventer system testing, records, and drills.**

\* \* \* \* \*

(h) Stump test a subsea BOP system before installation. You must:

- (1) Test all ROV intervention functions on your subsea BOP stack during the stump test. You must also test at least one set of rams during the initial test on the seafloor.

You must submit test procedures with your APM for District Manager approval. You must:

(i) Ensure that the ROV hot stabs are function tested and are capable of actuating, at a minimum, one set of pipe rams and one set of blind-shear rams and unlatching the LMRP;

(ii) Document all your test results and make them available to BOEMRE upon request; and

(2) Function test autoshear and deadman systems on your subsea BOP stack during the stump test. You must also test the deadman system during the initial test on the seafloor. You must:

(i) Submit test procedures with your APM for District Manager approval.

(ii) Document the results of each test and make them available to BOEMRE upon request.

(3) Use water to stump test a subsea BOP system. You may use drilling or completion fluids to conduct subsequent tests of a subsea BOP system.

§§ 250.617 and 250.618 [Redesignated as §§ 250.618 and 250.619]

17. Redesignate §§ 250.617 and 250.618 to §§ 250.618 and 250.619, respectively.

18. Add new § 250.617 to read as follows:

**§ 250.617 What are my BOP inspection and maintenance requirements?**

(a) BOP inspections.

(1) You must inspect your BOP system to ensure that the equipment functions properly. The BOP inspections must meet or exceed the provisions of Sections 17.10 and 18.10, Inspections, described in API RP 53, Recommended Practices for Blowout

Prevention Equipment Systems for Drilling Wells (incorporated by reference as specified in § 250.198). You must document the procedures used, record the results, and make them available to BOEMRE upon request. You must maintain your records on the rig for 2 years or from the date of your last major inspection, whichever is longer.

(2) You must visually inspect your BOP system and marine riser at least once each day if weather and sea conditions permit. You may use television cameras to inspect this equipment. The District Manager may approve alternate methods and frequencies to inspect a marine riser.

(b) BOP maintenance. You must maintain your BOP system to ensure that the equipment functions properly. The BOP maintenance must meet or exceed the provisions of Sections 17.11 and 18.11, Maintenance; and Sections 17.12 and 18.12, Quality Management, described in API RP 53, Recommended Practices for Blowout Prevention Equipment Systems for Drilling Wells (incorporated by reference as specified in § 250.198). You must document the procedures used, record the results, and make them available to BOEMRE upon request. You must maintain your records on the rig for 2 years or from the date of your last major inspection, whichever is longer.

19. In §§ 250.1500:

- a. Amend the definition of “Contractor and contract personnel” and the definition of “Employee” by removing the phrase “well control or production safety”, and in its place add the phrase “well control, deepwater well control, or production safety”; and

- b. Add definitions for “Deepwater well control”, “Well completion/well workover”, “Well control”, and “Well servicing” in alphabetical order to read as follows:

**§ 250.1500 Definitions.**

\* \* \* \* \*

Deepwater well control means well control when you are using a subsea BOP system.

\* \* \* \* \*

Well completion/well workover means those operations following the drilling of a well that are intended to establish or restore production.

Well control means methods used to minimize the potential for the well to flow or kick and to maintain control of the well in the event of flow or a kick during drilling, well completion, well workover, and well servicing operations.

Well servicing means snubbing, coiled tubing, and wireline operations.

**§ 250.1501 [AMENDED]**

20. In §§ 250.1501, remove the phrase “well control or production safety”, and in its place add the phrase “well control, deepwater well control, or production safety”.

**§ 250.1503 [AMENDED]**

21. In §§ 250.1503:

- a. Redesignating paragraphs (b) and (c) as paragraphs (c) and (d);
- b. Amending paragraphs (a), (c)(1), (c)(3) and (d)(1) by removing the phrase “well control or production safety”, and in its place adding the phrase “well control, deepwater well control, or production safety”;

c. Amend paragraph (a) by removing the phrase “well control and production safety”, and in its place adding the phrase “well control, deepwater well control, and production safety”; and

d. Adding new paragraph (b) to read as follows:

**§ 250.1503 What are my general responsibilities for training?**

\* \* \* \* \*

(b) If you conduct operations with a subsea BOP stack, your employees and contract personnel must be trained in deepwater well control. The trained employees and contract personnel must have a comprehensive knowledge of deepwater well control equipment, practices, and theory.

**§ 250.1506 [AMENDED]**

22. In §§ 250.1506, amend paragraphs (a), (b), and (c) by removing the phrase “well control or production safety”, and in its place adding the phrase “well control, deepwater well control, or production safety”.

**§ 250.1507 [AMENDED]**

23. In §§ 250.1507, amend paragraphs (c) and (d) by removing the phrase “well control and production safety”, and in its place adding the phrase “well control, deepwater well control, and production safety”.

- 24. Amend § 250.1712 by,
  - a. Revising paragraph (e) and (f)(14); and
  - b. Adding new paragraph (g) to read as follows:

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

\* \* \* \* \*

(e) A description of the work;

(f) \* \* \*

(14) Your plans to protect archaeological and sensitive biological features, including anchor damage during plugging operations, a brief assessment of the environmental impacts of the plugging operations, and the procedures and mitigation measures you will take to minimize such impacts; and

(g) Certification by a Registered Professional Engineer of the well abandonment design and procedures; that there will be at least two independent tested barriers, including one mechanical barrier, across each flow path during abandonment activities; and that the plug meets the requirements in the table in § 250.1715. The Registered Professional Engineer must be registered in a State in the United States. You must submit this certification with your APM (Form MMS-124).

- 25. Amend § 250.1721 by:
  - a. Revising paragraphs (e) and (g)(3), and
  - b. Adding new paragraph (h) to read as follows:

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

\* \* \* \* \*

(e) Identify and report subsea wellheads, casing stubs, or other obstructions that extend above the mud line according to U.S. Coast Guard (USCG) requirements;

\* \* \* \* \*

(g) \* \* \*

(3) A description of any remaining subsea wellheads, casing stubs, mudline suspension equipment, or other obstructions that extend above the seafloor; and

(h) Submit certification by a Registered Professional Engineer of the well abandonment design and procedures; that there will be at least two independent tested barriers, including one mechanical barrier, across each flow path during abandonment activities; and that the plug meets the requirements in the table in § 250.1715. The Registered Professional Engineer must be registered in a State in the United States. You must submit this certification with your APM (Form MMS-124) required by § 250.1712.

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