

False Sense of Safety

Online Appendix: Analysis of Each New Safety Measure's Effect on Offshore Drilling Safety

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New Safety Measure (NTL or Rulemaking)	Section in Code of Federal Regulations, Chapter 30	Brief Description of New Safety Measure	Problems with New Safety Measure
NTL 2010-N06	N/A (regulatory guidance)	All EPs, DPPs, and DOCDs must include a blowout scenario with the highest possible volume of liquid hydrocarbons, and describe the assumptions and calculations used in this worst case discharge ("WCD") scenario.	As discussed at length in the report, ¹ BOEMRE has not established quantitative standards by which to judge newly-required information. As a result, BOEMRE has approved plans that state that a blowout could lead to tens or hundreds of thousands of barrels of oil being spilled every day, much more than during the Deepwater Horizon. Such a large spill would have a devastating effect on Gulf ecosystems and communities, yet BOEMRE has approved these plans nonetheless, undercutting the opportunity the newly-required information has to reduce the risk of major spills.
NTL 2010-N06	N/A (regulatory guidance)	All EPs, DPPs, and DOCDs must describe steps taken to increase blowout prevention, reduce blowout likelihood, and conduct effective & early intervention post-blowout.	BOEMRE has continued the MMS's practice of rubberstamping permits and plans, which limits the impact this new information could have on offshore safety. BOEMRE has, for instance, approved many plans that contain greatly over exaggerated estimates of spill cleanup and response capabilities, as documented in detail in the report. ² In reality, the companies' spill response and cleanup capabilities are likely much smaller than stated, meaning their ability to respond to large spills would be much less than stated as well and so much more damage would be caused by a spill than is anticipated by the plan. By

			nonetheless approving these plans, BOEMRE undermines any safety improvement that this additional information could have had, rendering the new information largely unhelpful in lowering the risks associated with offshore drilling.
NTL 2010-N10	N/A (regulatory guidance)	For all operators using subsea blowout preventers ("BOPs") or surface BOPs on floating facilities, an authorized company official must sign a statement saying that the operator will abide by all applicable regulations for every well permit.	<p>The purpose of this mandate, according to NTL 2010-N10, is to "ensure that an operator is knowledgeable of and will comply with all applicable regulations" (pg. 1). In other words, BOEMRE seems to believe that by acquiring a signature, the systemic corner cutting and regulatory dodging of the oil industry will be curtailed. Contrary to this belief, a signature does not guarantee subsequent action, as evidenced most poignantly by the Deepwater Horizon disaster but also by the numerous civil penalties BOEMRE/MMS has assessed in past years for bypassing safety elements, maintaining an unsafe workplace, and other violations. The many overarching problems in offshore regulation, such as perverse financial incentives to cut corners or insufficient inspection and oversight by BOEMRE, exacerbate this problem.</p> <p>This requirement also does not establish any new safety regulations, but rather relies on existing regulations to be effective. However, as is discussed below and in the report,³ major gaps in blowout preventer regulations exist that undermine their effectiveness, which in turn undermines the impact of this regulation on offshore safety.</p>
NTL 2010-N10	N/A (regulatory guidance)	Clarifies that BOEMRE will evaluate in applications whether each company has adequately shown it can access and deploy surface and subsea containment resources in response to a blowout. Types of information and resources BOEMRE may evaluate includes shoreline booming and protection strategies, WCD flow rate estimates, offshore surface oil containment & recovery, and subsea containment and capture equipment.	BOEMRE has not established quantitative standards by which to judge newly-required information and continues to rubberstamp plans and permits. Because no quantitative standards exist, BOEMRE has approved plans, such as Exploration Plans, even when those plans readily acknowledge that a blowout could lead to tens or hundreds of thousands of barrels of oil being spilled per day, a flow rate greater than that during the Deepwater Horizon disaster. To account for this spilled oil in their plans, these same companies greatly over exaggerate their spill response and cleanup capabilities, estimating that they would be able to recover over 100 times more oil than BP

			did during the Deepwater Horizon spill. ⁴ Yet, BOEMRE has approved these plans nonetheless despite such egregious claims, putting Gulf communities and ecosystems at risk of another spill and undercutting this new regulation.
Secretary's Memo	N/A (regulatory guidance)	Prohibits the use of categorical exclusions for plans that require an APD and that involve the use of a subsea blowout preventer (i.e., deepwater Exploration Plans). [Categorical Exclusions were used to circumvent environmental impact reviews of Exploration Plans prior to the Deepwater Horizon. This memo therefore aims to increase the environmental reviews of Exploration Plans.]	<p>While this memo has increased environmental review, it has afforded no additional protection to workers or the environment. As discussed at length in the report,⁵ numerous exploratory drilling operations have been approved that, in the event of a blowout, would spill tens or even hundreds of thousands of barrels of oil into the Gulf of Mexico and only be able to cleanup a small fraction of that oil. These approvals have been in spite of “enhanced” environmental reviews required by this memo being conducted.</p> <p>Further undermining the impact of this memo is the fact that BOEMRE must conduct its environmental reviews of Exploration Plans within 30 days.⁶ Thirty days does not provide enough time for BOEMRE to conduct an adequate environmental review of potential impacts from exploratory drilling, and the quality of the environmental review suffers as a result. While this 30 day limit exists, the impact this memo will have on offshore safety will be limited.</p>
Interim Drilling Safety Rule	§250.442(e), §250.515(e), §250.615(e)	Requires operators to establish minimum requirements for personnel authorized to operate critical blowout preventer (“BOP”) equipment. Training of these personnel must include deepwater well theory and comprehensive knowledge of BOP hardware and control systems.	<p>In the case of the Deepwater Horizon, it was not the operators of the blowout preventer that failed, but the blowout preventer itself. Until the underlying design flaws in blowout preventers are addressed (which are discussed at length in the report⁷), better operator training, while welcome, will have a limited impact on offshore safety.</p> <p>Overarching problems (listed below) also undermine this new requirement, as they undermine training programs as well as the application of the skills and knowledge gained during those programs.</p> <ul style="list-style-type: none"> Perverse economic incentives to cut corners Inadequate inspection and oversight Industry’s unchanged safety culture

Interim Drilling Safety Rule	§250.442(c), §250.515(e), §250.615(e)	Remotely operated vehicles (“ROV”) must be maintained and a trained ROV crew must be on each floating drilling rig on a continuous basis.	<p>While a welcome requirement, an ROV was deployed to and working on the Macondo well as soon as the day after the blowout. Despite this rapid deployment, the ROV failed to stop the blowout because the blowout preventer could not fully seal the well. In other words, it was not lack of ROV intervention capabilities that failed to stop the blowout, it was the blowout preventer itself. Thus, this new regulation would not have affected the outcome of the Deepwater Horizon incident.</p> <p>The maintenance and training required by this regulation are both undermined by overarching problems (listed below). Ensuring maintenance is performed per regulations, for instance, requires effective inspection and oversight capabilities, which BOEMRE lacks.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners Inadequate inspection and oversight Industry’s unchanged safety culture BOEMRE’s ability to grant “departures”
Interim Drilling Safety Rule	§250.446(a), §250.516(h), §250.516(g), §250.617	BOP inspections and maintenance must be documented per American Petroleum Institute (“API”) Recommended Practice (“RP”) 53. [This means that records must be kept on rigs for 2 years or from the date of last major inspection.]	<p>This regulation does not add any additional inspection or maintenance requirements, but rather adds a requirement for keeping maintenance and inspection records. Thus, while this could provide BOEMRE with greater oversight of drilling operations, BOEMRE lacks sufficient inspection capabilities to utilize this potential. Until its inspection capabilities are enhanced, the impact of this regulation will be limited.</p> <p>Other overarching problems (listed below) further undermine the impact of this requirement by, for instance, providing a financial incentive for operators to cut corners in their documentation.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners Inadequate inspection and oversight Industry’s unchanged safety culture
Interim Drilling Safety Rule	§250.1500 through §250.1510	Rig personnel must be trained in deepwater well control and specific duties, equipment, and techniques associated with deepwater drilling.	Persistent overarching problems (listed below) undermine the efficacy of training programs required by this regulation as well as the application of the skills and knowledge gained during those programs, limiting the impact of this new regulation on offshore safety.

			<p>Perverse economic incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture</p>
Interim Drilling Safety Rule	§250.449(j), §250.516(d)(8), §250.616(h)(1)	All ROV intervention functions of subsea blowout preventers must be tested during stump tests.	<p>While ROV intervention capabilities on blowout preventers are important to test and maintain, this requirement will do little to improve safety. For one, underlying deficiencies in blowout preventers haven't yet been addressed. Specifically, the drill pipe in the blowout preventer elastically buckled and moved sideways as a result of the blowout, which lead to the blowout preventer being unable to fully shear the pipe and seal the well. (This deficiency is discussed at greater length in the report.⁸) Until this deficiency is corrected, blowout preventers will not function as intended, rendering ROV intervention functionality a moot point. In fact, in the case of the Deepwater Horizon blowout, ROV intervention likely closed the blind shear rams just two days after the blowout,⁹ but clearly this did not stop the blowout because the blind shear rams, as mentioned, were unable to seal the well.</p> <p>Furthermore, the Deepwater Horizon's blowout preventer's hot stab function, which is how the ROV seals a blowout preventer's blind shear rams, was tested and passed before installation,¹⁰ as would be required by this regulation. Yet, the hot stab function still failed following the blowout,¹¹ questioning the efficacy of this measure in ensuring ROV intervention functions will work subsequent to a blowout.</p> <p>Overarching problems (listed below) also undermine this regulation by decreasing compliance and potentially nullifying these new testing requirements via the granting of "departures." Inadequate inspection and oversight Industry's unchanged safety culture BOEMRE's ability to grant "departures"</p>
Interim Drilling Safety Rule	§250.449(k), §250.516(d)(9), §250.616(h)(2)	Autoshear and deadman systems on subsea BOP stacks must be function-tested during stump test. The deadman system must also be tested during initial test on seafloor.	<p>Similar to the previous discussion, while ensuring that autoshear and deadman systems work can improve offshore safety, deficient blowout preventer designs will limit the impact this regulation has on offshore safety. This is demonstrated by the Deepwater Horizon incident, where the</p>

			<p>blowout preventer's autoshear system was activated via ROV on April 22¹² and led to the closing of the blind shear rams as intended, but still failed to fully seal the well and stop the flow of oil. Thus, until underlying problems in blowout preventers are corrected, this regulation will not greatly increase offshore safety.</p> <p>This new regulation is also undermined by other overarching problems (listed below), which limit compliance with testing regulations.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture BOEMRE's ability to grant "departures"
Interim Drilling Safety Rule	§250.449(j), §250.516(d)(8), §250.616(h)(1)	At least 1 set of rams must be tested during initial test on seafloor.	<p>Having functional rams is crucial to stopping blowouts, so this is a welcome regulation. However, several factors undermine this regulation's efficacy. For one, testing of blowout preventers and their rams does not adequately mimic real-life conditions that prevail during blowouts. Blowouts expose blowout preventers and rams to high volumes of rapidly flowing oil and gas, which generate "dynamic flowing" conditions. However, regulations and American Petroleum Institute specifications,¹³ to which many blowout preventers are designed, do not mandate that testing occur under "dynamic flowing" conditions. This severely undercuts how indicative these new testing regulations, and indeed all testing of blowout preventers and their rams, are of future performance in real-life situations.</p> <p>To underscore this point, the Deepwater Horizon's blind shear rams passed multiple tests demonstrating their functionality, including one where they sheared a pipe similar to that used in the Macondo well.¹⁴ Nonetheless, these rams failed to fully seal the well during the blowout.</p> <p>Overarching problems (listed below) also undermine this regulation by decreasing compliance, both in terms of whether operators conduct the test as well as how stringent the test is.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners

			<p>Inadequate inspection and oversight Industry's unchanged safety culture BOEMRE's ability to grant "departures"</p>
Interim Drilling Safety Rule	§250.451(i)	<p>If blind shear rams ("BSRs") or casing shear rams are activated in a well control situation, the blowout preventer must be retrieved and fully inspected and retested. [Blind shear rams are used to shear drill pipes and completely seal the wellbore. Casing shear rams shear casing, as the name implies, and not drill pipe, and furthermore do not completely seal the wellbore.¹⁵]</p>	<p>While this regulation aims to ensure blowout preventers will function as intended in future blowout scenarios, by not addressing the underlying deficiency in blowout preventers discussed above and at greater length in the report,¹⁶ it fails to have a major impact on offshore safety.</p> <p>Additionally, the Deepwater Horizon's blowout preventer's blind shear rams were activated, albeit two days after the blowout occurred, yet failed to seal the well. So even if this regulation does lead to blind shear rams being activated in a situation they otherwise would not be, their activation does not guarantee that they will function as intended, as in the Macondo blowout.</p> <p>This regulation is further undermined by numerous overarching shortcomings in offshore regulation (listed below) that decrease the likelihood of operators complying with this new regulation.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture BOEMRE's ability to grant "departures"
Interim Drilling Safety Rule	§250.198(a)(3)	<p>For all documents incorporated by reference, when that document uses the word "should" or "shall," it must be interpreted by operators as meaning "must."</p>	<p>As a result of this regulation, operators now must adopt many provisions that were formally mere recommendations. These provisions affect many aspects of offshore drilling. While this likely improves offshore safety, it depends on the contents of the many documents it pertains to. Examining the many documents incorporated through this new regulation (which are listed at 30 C.F.R. §198) is outside the scope of this text. However, many of those documents that this regulation pertains to are American Petroleum Institute Recommended Practices. The National Commission found that these Recommended Practices actually put forth mediocre practices that most operators can readily achieve.¹⁷</p>

			<p>Persistent overarching problems (listed below) may also lead to operators not fully complying with this regulation.</p> <p>Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture BOEMRE's ability to grant "departures"</p>
Interim Drilling Safety Rule	§250.198(h)(79)	<p>Incorporates by reference API RP 65-Part 2 Isolating Potential Flow Zones During Well Construction. [API RP 65-Part 2 is an API best practices document that identifies mechanical barriers and cementing procedures that should be used in each casing string so as to prevent flow through or past pressure-containment barriers that are installed and verified during well construction (e.g., the cement plug at the bottom of the well in the shoe track). By incorporating this document, operators must abide by the recommended practices in this document.]</p>	<p>While it's impossible to judge the exact worth of API RP 65-Part 2, as it is not publically available, the National Commission found that API Recommended Practices do not put forth best practices in the industry, but rather ones that all operators can readily achieve.¹⁸ Thus, it is unlikely that these recommended practices would substantially improve the safety of most offshore operations, and so not substantially improve offshore safety in general.</p> <p>Persistent overarching problems (listed below) also undermine the effectiveness of this new regulation in multiple ways, including by decreasing compliance with the regulation and by exacerbating operator error that could undermine barriers installed per the regulation.</p> <p>Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture BOEMRE's ability to grant "departures"</p>
Interim Drilling Safety Rule	§250.415(f)	<p>Requires a written description of how the operator evaluated the best practices included in API 65-Part 2 [see above]. This description must identify mechanical barriers and cementing practices the operator will use in each casing string.</p>	<p>The preceding discussion equally applies to this new regulation.</p> <p>Additionally, ensuring that the written descriptions translate into actual action requires sufficient inspection and oversight capabilities, which BOEMRE lacks.</p>
Interim Drilling Safety Rule	§250.416(d)	<p>Requires operators to include schematics of all control systems, including primary and secondary control systems and pods for blowout preventers.</p>	<p>Ensuring that crucial information is readily available is a welcome reform that, while it does not reduce risks associated with offshore drilling itself, allows for more expeditious response to spills and other disasters.</p>
Interim Drilling Safety Rule	§250.416(g)	<p>Sets specific qualifications for independent third party ("I3P") verifiers. [Specifically, the I3P must be a technical classification society; an API-licensed manufacturing, inspection, or certification firm; or a licensed</p>	<p>API, or the American Petroleum Institute, is a lobbying organization for oil and gas companies and counts many of those companies among its members. API advocates for increased access to offshore resources and against increased safety measures, among other activities.</p>

		professional engineering firm capable of providing the verifications required under this part.]	API-licensed organizations are not wholly independent of the offshore industry, as their licenses are granted to them essentially in part by the offshore industry through API. Furthermore, a conflict of interest exists for these organizations, as they on the one hand are expected to ensure offshore operators comply with safety requirements as I3Ps, but on the other hand are licensed by an organization that advocates against safety measures and prioritizes profits over safety. This lack of independence and conflict of interest, which is discussed at length in the report, ¹⁹ undermines the effectiveness of this regulation in establishing truly independent and unbiased I3Ps.
Interim Drilling Safety Rule	§250.416(e)	Requires independent third-party (“I3P”) verification that installed blind shear rams are capable of shearing any drill pipe in the hole.	<p>As discussed above, the fact that API-licensed organizations can qualify as I3Ps represents a conflict of interest and undermines the integrity of I3Ps, which in turn compromises the effect of this regulation.</p> <p>Also as discussed above, blowout preventers and blind shear rams are not tested under dynamic flowing conditions, which occur during blowouts and can cause blowout preventers to not function as intended, as occurred during the Macondo blowout. By not testing under such conditions, this requirement does not address a significant concern of blind shear rams.</p> <p>This requirement also falls short by not ensuring blind shear rams can shear tool joints. Tool joints are the sections where segments of pipe are connected, and constitute roughly 10% of a pipe's length.²⁰ Despite their prevalence, blind shear rams cannot shear tool joints.²¹ As a result, if a tool joint lies in the shearing plane of the blind shear ram when a blowout occurs and the ram must seal the well, the ram will likely not be able to cut the pipe and seal the well. By not addressing the inability of blind shear rams to shear tool joints, this regulation does not fully ensure blind shear rams will function as intended and be able to fully seal a runaway well.</p> <p>Furthermore, the Deepwater Horizon's blind shear rams</p>

			<p>passed multiple tests demonstrating their functionality, including one where they sheared a pipe similar to that used in the Macondo well, meaning the blind shear rams would have satisfied this regulation.²² Clearly, though, this test did not ensure the blind shear rams would function accordingly during a blowout, a key shortcoming.</p> <p>Persistent overarching problems (listed below) undermine this new regulation as well by, for instance, incentivizing drillers to not fully comply with the new regulation.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture BOEMRE's ability to grant "departures"
Interim Drilling Safety Rule	§250.416(f)	Requires I3P verification that the subsea blowout preventer is designed for specific equipment on the rig and the specific well design, including conditions around the well. Also requires testing to show the subsea BOP hasn't been damaged or compromised from previous service.	<p>Like the previous regulation, this regulation is undercut by the fact that API-licensed organizations qualify as I3Ps.</p> <p>In regards to ensuring blowout preventers are designed for well conditions, the verification required by this regulation must be included in an operator's Application for Permit to Drill ("APD") or Application for Permit to Modify ("APM"), which is submitted to BOEMRE prior to drilling. In other words, verification must be given before the well is spudded, i.e., before drilling begins. As a result, the well conditions that the required verification is based on are not direct observations because the well has not been drilled yet. Rather, well conditions are estimated with offset well data, or data gathered from nearby wells,²³ which do not perfectly reflect conditions within a given well. For exploratory wells in areas that have not been drilled before, little offset data is often available. Thus, the verification required by this regulation may not be based on large amounts of reliable information, and furthermore is not based on actual observations of well conditions. If well conditions are not as expected once drilling begins, then the I3P verification required by this regulation may be rendered meaningless.</p> <p>This regulation is also undercut by overarching problems (listed below) that may decrease compliance with the regulation, such as by incentivizing companies to not fully</p>

			<p>examine potential well conditions and the specifications of the blowout preventer.</p> <p>Perverse financial incentives to cut corners Inadequate inspection and oversight Industry’s unchanged safety culture BOEMRE’s ability to grant “departures”</p>
Interim Drilling Safety Rule	§250.420(b)(3)	Requires the installation of dual mechanical barriers in addition to cement for the final casing string (i.e., have two barriers in center of wellbore). This may include dual float valves, or one float valve and another mechanical barrier.	<p>As discussed in the report,²⁴ dual safety valves are acknowledged by industry, the National Commission and the Joint Investigation Team as ineffective barriers to flow. In fact, the Macondo well had dual safety valves installed at the time of the blowout, but they clearly failed to function as an effective barrier to oil and gas flowing up the well. Allowing dual safety valves to satisfy this requirement greatly undermines it.</p> <p>Operator error, which remains a large concern due to overarching problems in offshore regulation, can undermine the effectiveness of physical barriers. As a result of operator error, even if appropriate barriers to flow (i.e., not dual safety valves) are installed in a well to satisfy this regulation, they may not function as intended. Cement plugs, for instance, are commonly used barriers, but can be undermined in a variety of ways: cement slurry can be given insufficient time to set or be improperly mixed, channeling can occur in the cement in the annulus, etc. Indeed, many such factors may have contributed to the failure of the Macondo well’s bottom cement job.</p> <p>Persistent overarching problems (listed below) increase the probability that additional barriers are either not installed or improperly installed, undermining their effectiveness.</p> <p>Perverse financial incentives to cut corners Inadequate inspection and oversight Industry’s unchanged safety culture BOEMRE’s ability to grant “departures”</p>
Interim Drilling Safety Rule	§250.420(a)(6)	Requires certification, submitted with the Application for Permit to Drill (“APD”), by a professional engineer that there will be at least two independent tested barriers	The preceding discussion also applies to this regulation.

		(including at least one mechanical barrier) across each flow path during well completion activities, and that casing and cementing designs are applicable for wellbore conditions. This pertains to drilling/construction as well as to cementing the final production casing/liner.	
Interim Drilling Safety Rule	§250.1712(g), §250.1721(h)	During permanent well abandonment activities [the Deepwater Horizon rig was engaged in temporary abandonment activities], a professional engineer must certify abandonment designs and procedures, and there must be at least two independent tested (including at least one mechanical) barriers to flow during abandonment activities.	Because this regulation applies to permanent well abandonment, it does not reduce risks associated with exploratory drilling and production. Nonetheless, the same flaws pertain to this regulation as to the preceding two regulations, namely that the barriers required by this regulation could be undermined by overarching problems and operator error.
Interim Drilling Safety Rule	§250.423(b)	Requires pressure testing on the casing seal assembly to ensure proper installation of casing or liner. Operators must also ensure that latching mechanisms or lock down mechanisms are engaged upon installation of each casing string or liner (including intermediate and production strings). The procedures and criteria for a successful test must be submitted with an Application for Permit to Drill (“APD”) for approval.	<p>The Deepwater crew successfully completed two seal assembly pressure tests and one positive pressure test.²⁵ Latching mechanisms of casing strings in the Macondo well were also successfully engaged.²⁶ Thus, this regulation would have not have changed the outcome of the Deepwater Horizon disaster. Nonetheless, increased testing is a welcome reform and could help prevent other spills.</p> <p>Unfortunately, the impact this regulation will have is limited by overarching problems in offshore regulation (listed below) that limit compliance with testing requirements or improper tests being performed.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners Inadequate inspection and oversight Industry’s unchanged safety culture BOEMRE’s ability to grant “departures”
Interim Drilling Safety Rule	§250.423(c)	Requires a negative pressure test to ensure proper casing installation. Must be performed for intermediate and production casing strings. Procedures and criteria for a successful test must be submitted with an APD for approval. Any detection of flow or pressure build up will be considered a failed	<p>Overarching problems in the regulation of offshore drilling (listed below) undermine regulatory compliance by offshore operators and incentivize corner cutting. Thus, despite this new requirement, negative pressure tests may still be conducted improperly, as on the Deepwater Horizon.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners Inadequate inspection and oversight

		test.	Industry's unchanged safety culture BOEMRE's ability to grant "departures"
Interim Drilling Safety Rule	§250.442(c), §250.515(e), §250.615(e)	Requires subsea BOP stacks to be equipped with ROV intervention capabilities. At a minimum, the ROV must be able to close 1 set of pipe rams, 1 set of blind shear rams, and unlatch the lower marine riser package.	<p>As discussed above, the Deepwater Horizon's blowout preventer's blind shear rams were activated, albeit subsequent to the blowout, yet still failed to seal the well. Thus, even if the ROV is able to close a blowout preventer's blind shear rams, they will not necessarily function as intended.</p> <p>Additionally, the Deepwater Horizon's blowout preventer's hot stab function, or the function by which an ROV activates the blind shear rams, was successfully tested before installation,²⁷ per this regulation. However, the same hot stab function failed after the blowout, indicating this regulation will not be adequate in ensuring the ROV can activate the blowout preventer's blind shear rams after a blowout.</p> <p>Overarching problems in offshore regulation (listed below) undermine this regulation as well. For instance, BOEMRE could grant a "departure", or exemption, from one of these new testing requirements, as it has done numerous times in the past.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture BOEMRE's ability to grant "departures"
Interim Drilling Safety Rule	§250.442(f), §250.515(e), §250.615(e)	Requires autoshear and deadman systems to be installed on dynamically positioned rigs. [Autoshear systems automatically shut in wellbores when the lower marine riser package ("LMRP"), or pipe connected to the top of the blowout preventer, is disconnected from the blowout preventer. Deadman systems shut in wellbores when the hydraulic supply and signal transmission capacity of blowout preventers are simultaneously lost.]	It is currently unclear whether the deadman (i.e., AMF) system worked, as it should have, when the Macondo well blew out. ²⁸ It is clear, though, that either the deadman system activated on April 20th, the day of the blowout, or the autoshear system was activated via ROV on the 22nd. ²⁹ Yet, despite the activation of one of these systems, which triggered the blowout preventer's blind shear rams, the well was not fully sealed because the blind shear rams had failed to fully seal the well. Thus, ensuring these systems function in tests, while important, does not safeguard against a blowout and loss of well control, and will continue to until underlying deficiencies in blowout preventers are resolved.

			<p>Consequently, this regulation’s improvement of offshore safety is limited.</p> <p>This regulation is also undermined by systemic problems in offshore regulation (listed below). Perverse financial incentives to cut corners Inadequate inspection and oversight Industry’s unchanged safety culture</p>
Interim Drilling Safety Rule	§250.456(j)	Before displacing kill-weight drilling fluid from wellbore, the operator must receive approval from the District Manager.	<p>Given that BOEMRE continues to rubberstamp plans and permits, it is possible that this newly-required approval from the District Manager would not entail a thorough examination of the procedure and risks involved in the displacement. Consequently, this regulation would not greatly improve offshore safety.</p> <p>Persistent overarching problems (listed below) also undercut this new regulation, such as by incentivizing operators to cut corners during displacement activities in ways not approved by the District Manager. Perverse financial incentives to cut corners Inadequate inspection and oversight Industry’s unchanged safety culture</p>
Safety and Environmental Management Systems (“SEMS”)	§250.1900 through §250.1929	Requires operators to create and implement a SEMS program. According to BOEMRE, “SEMS is a comprehensive management program for identifying, addressing and managing operational safety hazards and impacts, with the goal of promoting human safety and environmental protection.” ³⁰ Specifically, this regulation sets out 13 criteria that each SEMS program must meet (see page 20 of report for list), but operators are otherwise given leeway in developing their SEMS, which must be created for each facility and must address all activities undertaken on those facilities. Contractors don’t need to implement a SEMS program, but operators must document how they	<p>In addition to overarching problems that undermine the effect of SEMS on offshore safety, three facts indicate that SEMS will not greatly improve offshore safety. These facts are discussed at length in the report and briefly listed below.³¹</p> <ol style="list-style-type: none"> 1) Policies similar to aspects of SEMS were in place on the Deepwater Horizon rig, yet failed to prevent a blowout. 2) Adoption of SEMS by operators in the Gulf of Mexico in the past failed to greatly improve offshore safety in those years, as large spills and violations occurred at rates comparable to recent years. 3) The much-discussed “safety case” approach, which SEMS resembles, has also failed to prevent spills according

		evaluated the contractor's safety and environmental performance through the lens of the operator's own SEMS.	to data from the North Sea, where the "safety case" approach has been utilized for decades.
Revisions to Safety and Environmental Management Systems	§250.1930	Operators must implement a Stop Work Authority ("SWA") program for any and all employees on facilities.	<p>An effective SWA would likely improve offshore safety, as it is more likely that one of many workers would spot a problem rather than just one worker. However, it is unlikely that this new regulation will be fully utilized by workers for fear of reprisal. Stopping work can incur serious costs for offshore operators, as operating costs can amount to \$1,000,000 per day, as was the case for the Deepwater Horizon rig.³² Thus, employees who stop work may be punished or lose their job, creating a strong deterrent to workers exercising their stop work authority. In fact, 46% of Transocean workers on the Deepwater Horizon rig feared such reprisal,³³ and workers in the North Sea have expressed similar sentiments.³⁴ Because workers likely will not fully utilize their stop work authority, the impact this regulation will have on offshore safety will not be great.</p> <p>On the Deepwater Horizon, BP, Transocean, and Halliburton all had stop work policies in place, yet none were utilized, so having this regulation in place likely would also likely not have altered the outcome of the Deepwater Horizon.</p> <p>This regulation is further undermined by overarching problems (listed below) that could reduce compliance with this regulation and weaken stop work policies that are implemented.</p> <ul style="list-style-type: none"> Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture
Revisions to Safety and Environmental Management Systems	§250.1933	SEMS programs must provide the right to workers to report unsafe work conditions, including possible violations, and to request an inspection of the facility by BOEMRE.	As with the previous stop work authority regulation, this regulation will likely not be fully utilized by workers for fear of reprisal for reporting unsafe work conditions to their supervisor or BOEMRE, which can incur costs to the company that owns the facility. Thus, the effect this regulation will have on offshore safety will likely be limited.

			<p>Overarching problems (listed below) further undermine this new regulation, as above.</p> <p>Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture</p>
Revisions to Safety and Environmental Management Systems	§250.1920, §250.1924, §250.1926	<p>Requires SEMS programs to engage independent third party ("I3P") auditors to conduct SEMS program audits, and also delineates qualifications for I3Ps. [Operators must nominate an I3P and BOEMRE must then approve that nomination based on the I3P's experience with SEMS.]</p>	<p>This regulation provides stipulations to minimize conflicts of interest for I3P auditors of SEMS programs. For instance, operators cannot choose as I3P auditors companies affiliated with the operator's company or organizations that helped set up the operator's SEMS program.³⁵ However, operators still nominate an I3P to audit their programs, which can allow for conflicts of interest to be introduced. While BOEMRE does have to approve a nomination, the bureau's current inspection and oversight capabilities are lacking, indicating it will not be able to do a detailed evaluation of conflicts of interest and other potential pitfalls of all nominated I3Ps. Consequently, I3P audits of SEMS programs may not be unbiased and exhaustive, which could result in flaws in SEMS programs not being addressed.</p> <p>Furthermore, underlying deficiencies in SEMS programs themselves, which were previously discussed, limit the effect this regulation requiring I3P audits of those programs will have on offshore safety. For instance, even if this regulation were perfect and led to exhaustive audits of SEMS programs, it would not protect against spills because SEMS itself does not protect against spills.</p> <p>This regulation is undercut by overarching problems (listed below). For instance, BOEMRE must ensure that audits are done fully and correctly, which requires inspection and oversight capabilities that the bureau lacks.</p> <p>Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture</p>
Revisions to Safety and Environmental Management	§250.1931	Operators must clearly define who has ultimate work authority on facilities.	Clearly defining who has ultimate work authority may streamline the decision making process at crucial junctures, thereby improving offshore safety. However, if the decision making process never begins moving, then designating who

Systems			<p>has ultimate work authority will not ultimately help in avoiding risks. In other words, a risk must be perceived and action must be judged necessary before designating who has ultimate work authority could help avoid a risk.</p> <p>Overarching problems in offshore regulation (listed below), though, often lead to risks not being properly identified or appropriate action not being taken, undermining the effect this regulation could have on offshore safety.</p> <p style="padding-left: 40px;">Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture</p>
Revisions to Safety and Environmental Management Systems	§250.1911	Requires Job Safety Analyses to abide by additional requirements.	<p>Job Safety Analyses are used to identify and mitigate potential hazards to workers conducting activities. Thus, while this is a welcome reform that could help protect workers, it does not afford additional protection to the environment.</p> <p>Furthermore, overarching problems (listed below) may undermine compliance with this regulation, incentivizing, for instance, a rushed analysis that does not fully consider and mitigate risks to workers for the sake of quickly completing a project.</p> <p style="padding-left: 40px;">Perverse financial incentives to cut corners Inadequate inspection and oversight Industry's unchanged safety culture</p>

¹ Pages 12-14.

² *Id.*

³ See pages 9-10 of the report.

⁴ See pages 12-14 of the report.

⁵ *Id.*

⁶ See 30 C.F.R. §250.233(a).

⁷ Pages 9-10.

⁸ *Id.*

⁹ Joint Investigation Team. "Volume II: Report regarding the causes of the April 20, 2010 Macondo well blowout." *Report of Investigation*. 14 Sept. 2011. Page 139.
Kenney, Gary D., Bryce A. Levett, and Neil G. Thompson. "Forensic examination of Deepwater Horizon blowout preventer." *Det Norske Veritas*. 20 Mar. 2011. Page 5.

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- ¹⁰ Chief Counsel to the National Commission. *Macondo: The Gulf Oil Disaster*. 17 Feb. 2011. Page 208.
- ¹¹ *Id.*
- ¹² Joint Investigation Team. "Volume II: Report regarding the causes of the April 20, 2010 Macondo well blowout." *Report of Investigation*. 14 Sept. 2011. Page 139.
- Kenney, Gary D., Bryce A. Levett, and Neil G. Thompson. "Forensic examination of Deepwater Horizon blowout preventer." *Det Norske Veritas*. 20 Mar. 2011. Page 5.
- ¹³ API Specification 16A, to which many BOPs are designed, including that used by the Deepwater Horizon, does not require dynamic flowing conditions during testing.
- ¹⁴ Joint Investigation Team. "Volume II: Report regarding the causes of the April 20, 2010 Macondo well blow out." *Report of Investigation*. 14 Sept. 2011. Page 160.
- Chief Counsel to the National Commission. *Macondo: The Gulf Oil Disaster*. 17 Feb. 2011. Pages 205-206.
- ¹⁵ Chief Counsel to the National Commission. *Macondo: The Gulf Oil Disaster*. 17 Feb. 2011. Page 16.
- ¹⁶ Pages 9-10.
- ¹⁷ National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling. Report to the President*. 11 Jan. 2011. Page 225.
- ¹⁸ *Id.*
- ¹⁹ Page 20.
- ²⁰ Rao, Vikram. "Deepwater drilling: A risk worth taking?" *AAAS Annual Meeting*. Washington Convention Center, Washington, DC. 19 Feb. 2011.
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- ²¹ E.g., Chief Counsel to the National Commission. *Macondo: The Gulf Oil Disaster*. 17 Feb. 2011. Page 204.
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- ²² Joint Investigation Team. "Volume II: Report regarding the causes of the April 20, 2010 Macondo well blowout." *Report of Investigation*. 14 Sept. 2011. Page 160.
- Chief Counsel to the National Commission. *Macondo: The Gulf Oil Disaster*. 17 Feb. 2011. Pages 205-206.
- ²³ Joint Investigation Team. "Volume II: Report regarding the causes of the April 20, 2010 Macondo well blowout." *Report of Investigation*. 14 Sept. 2011. Page 25.
- ²⁴ Page 19.
- ²⁵ Joint Investigation Team. "Volume II: Report regarding the causes of the April 20, 2010 Macondo well blowout." *Report of Investigation*. 14 Sept. 2011. Page 91.
- Chief Counsel to the National Commission. *Macondo: The Gulf Oil Disaster*. 17 Feb. 2011. Pages 143-145.
- ²⁶ Joint Investigation Team. "Volume II: Report regarding the causes of the April 20, 2010 Macondo well blowout." *Report of Investigation*. 14 Sept. 2011. Page 67.
- ²⁷ Chief Counsel to the National Commission. *Macondo: The Gulf Oil Disaster*. 17 Feb. 2011. Page 208.
- ²⁸ Kenney, Gary D., Bryce A. Levett, and Neil G. Thompson. "Forensic examination of Deepwater Horizon blowout preventer." *Det Norske Veritas*. 20 Mar. 2011. Page 5.
- ²⁹ *Id.*
- ³⁰ "Fact Sheet: The Workplace Safety Rule." *BOEMRE*. 19 Oct 2011 <http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=45791>
- ³¹ Pages 20-22.
- ³² Joint Investigation Team. "Volume II: Report regarding the causes of the April 20, 2010 Macondo well blowout." *Report of Investigation*. 14 Sept. 2011. Page 18.
- ³³ National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling. Report to the President*. 11 Jan. 2011. Page 224.
- ³⁴ Macalister, Terry, and Rob Evans. "North Sea oil: Whistleblowers speak out." *The Guardian*. 5 Jul. 2011. <http://www.guardian.co.uk/business/2011/jul/05/north-sea-oil-whistleblowers>
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