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December 13, 2010

Department of the Interior
Bureau of Ocean Energy Management, Regulation and Enforcement 381 Elden Street, MS 4024
Herndon, VA 20170-4817

Attn: Regulations and Standards Branch (RSB)

Re: Docket ID BOEM-2010-0034; "Oil and Gas and Sulphur Operations in the Outer Continental Shelf for Energy Development on the Outer Continental Shelf" (*Interim Final Rule*)

Chevron is a leading international oil company with major operations and investments in the world's most important oil and gas producing regions. Chevron is a major investor in the Gulf of Mexico Outer Continental Shelf (OCS) region, and a leader in safe and clean offshore production operations. With over 60 years experience operating in the Gulf, Chevron is one of the largest producers and leaseholders with strong portfolios in both the Gulf of Mexico shelf and deepwater. As such we are directly and significantly impacted by the *Interim Final Rule*.

Chevron is fully committed to safe and responsible operations on the OCS and has cooperated fully with the Department of the Interior and the Bureau of Offshore Energy Management, Regulation, and Enforcement (BOEMRE) in identifying ways to establish higher standards for all operators in the Gulf. It is a matter of restoring public trust – a goal that we share with the Administration. Although Chevron supports the intent of the rule making, we do however have concerns that the rule as written contains significant flaws, and that to avoid unintended consequences and fully realize the rule's intent the Agency must make a number of revisions to the current language.

This is a complex technical rule governing very specialized activities, and BOEMRE elected to issue a final rule without the normal rulemaking process. Without workshops and opportunities to provide feedback on draft provisions, quite a few corrections are necessary to address unintended consequences raised by this regulatory action. Given that BOEMRE's Notice to Lesssees No. 2010-N10 instructs operators to submit statements indicating that they will comply with this rule with their well permit applications, our comments focus on those issues that we consider most important and for which we request prompt correction. We also incorporate by reference the more detailed comments prepared by the American Petroleum Institute (API) and other Industry trade associations.

We also note that the Agency issued guidance that purportedly clarifies the Interim Final Rule. We request the opportunity to submit additional comments after the comment deadline but triggered by our review of the guidance.

1. Chevron Supports Incorporation of API Recommended Practices (RP) by Reference in the Rule, but Modifications to those Documents made by Section 250.198 (a)(3) Create Unacceptable and Unwarranted Unintentional Consequences.

The most serious problem in the *Interim Final Rule* is the blanket modification of RPs by the last sentence in section 250.198(a)(3), apparently made without technical consideration. The sentence—"If any incorporated document uses the word *should,* it means *must* for the purposes of these regulations."—neither enhances adherence to the underlying practice nor increases safety. Instead, it triggers a cascade of unintended consequences: restraining good engineering judgment, creating compliance uncertainty, and detracting from the intent of the RPs -- drilling safety.

Neither the rule nor its preamble presents a real justification for the blanket transformation of industry recommended but discretionary practices into mandatory legal requirements. Rather, BOEMRE simply states in the preamble to the rule:

> 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*.

75 Fed. Reg. 63,346, 63,356 (Oct. 14, 2010). Thus, BOEMRE recognized API's careful distinction between mandatory and discretionary practices but simply disregarded the distinction, apparently without analysis, in promulgating § 250.198(a) (3) to make all of the underlying recommendations mandatory whether universally appropriate or not.

By transforming discretionary standards intended to be applied based on informed engineering judgment and experience into mandatory requirements, the BOEMRE created a regulation that:

- Is excessively prescriptive, in some cases decreasing safety by requiring specific practices instead of preferable alternatives, and precluding advances in technology.
- Requires actions that are unquantifiable and unauditable, creating uncertainty as to how compliance should be demonstrated or certified.

BOEMRE should strike the final sentence in section 250.198 (a) (3). Additionally, we recommend incorporating the 32 question guidance checklist currently used by BOEMRE district engineers to evaluate consistency with the RP 65 Part 2. This approach is a good mechanism to demonstrate completion of a full engineering analysis and critical well design review taking into account the RPs. We also note that key RPs have been updated and a new RP on deepwater well design has been developed in response to the *Deepwater Horizon* incident. The rule should be modified to incorporate these new versions as soon as possible. Further, clear regulatory guidance materials that incorporate the concerns and solutions provided in the following sections will enhance safety while making it possible to continue drilling operations. Finally, BOEMRE should develop a reliable pathway for departures to address unique operational situations.

We offer a few specific examples below to more fully elucidate the concerns we have with the modification of the underlying RPs. We hope this will assist the Agency in meeting its regulatory goal of increasing drilling safety while remaining cognizant of technical limitations and engineering considerations that were not fully considered while drafting the *Interim Final Rule.* Further, we have attached a list in Appendix A of additional amendments needed should BOEMRE not strike the final sentence in section 250.198 (a) (3).

Excessively Prescriptive Approach Leads to Unintended Consequences

Changing the *should* to *must* in API RP 65 Part 2 Section 4.8.2.4 could increase risk by making a wiper trip mandatory in all circumstances. Chevron has extensive data demonstrating that a wiper trip is not needed after logging for the SBM formulations currently being used. Making an extra trip creates additional risk to personnel, wellbore and equipment.

The *Interim Final Rule* fails to recognize advances in technology that can increase safety. API section RP 65 Part 2 section 4.9.11 seeks to address the general concern with manually operated cement heads. However, cement heads with automation to reliably launch darts and plugs "on the fly" have been developed to do this safely and effectively. This can be a good practice to minimize the U-tube effect. Additionally the dart or plug is marked or indicated when leaving the cement head. The proposed language by BOEMRE in the final rule would preclude the use of this technology thereby increasing exposure to personnel and sacrificing job quality.

Another example of unintended consequences can be found in the modification of API RP 65 Part 2 Section 4.9.10. The actual intent of this recommendation is to address adequate displacement. By substituting "must" BOEMRE have now required that the cement unit and only the cement unit should be used to displace cement, when in some operations rig pumps are acceptable to displace cement as well. Experience has shown that getting cement in place quickly is beneficial. This may not be possible if the cement unit is used to displace cement instead of the rig pumps. Sometimes this can lead to possible well control problems if excessive cement pumping times are required.

It is essential to note that in none of these cases does Chevron object to performing a practice necessary to assure safe well operations. However, these examples demonstrate why neither the RP nor regulation should be written so prescriptively as to override good engineering judgment and preferable alternatives.

Requires actions that are unquantifiable and unauditable, creating uncertainty as to how compliance should be demonstrated or certified.

In many cases, the RPs provide sound recommendations that do not translate into strict regulatory requirements, making compliance difficult to demonstrate. For example, for wellbore preparation and conditioning, "Every effort should be made to minimize the time between completion of the hole interval and cementing when flow hazards exist." This recommendation is not auditable if made a requirement. It is not possible to quantify what, "every effort" is. Operators must also demonstrate similarly unmeasureable activities such as, "Care should be taken to select the proper rheological model when simulating fluids to be pumped on a cement job," or, "Thus, the gel strength of cement slurries should be designed to be adequate to support the solids and yet, not be excessive" are impossible for an operator to demonstrate compliance against.

2. Provisions of the BOEMRE Rules Fail to Recognize Technical Differences Between Deep and Shallow Water Drilling.

Section 250.449(h) requires a function test of annular and ram BOPs every 7 days between pressure tests. This test is important but is not always practical or achievable on this frequency for deep wells. While this is not a new addition to the rule, recent interpretations and practices deny the required waiver request for a 14 day period for shear rams only. For deep wells which may take the better part of a week to round trip the drill string, blind/shear rams function test every 7 days increases risk. Tripping and staying off bottom at increasing frequency, as deeper drilling

progresses, to perform this one function increases risk. Studies have consistently found the majority of well-control incidents occur during tripping (e.g. due to swabbing), and this requirement would introduce increased risk to our operations, because having an influx while the pipe is not near bottom is far more hazardous than drilling and taking a kick. Further, running deep completions will most often require more than 7 days, due to the installation requirements for completion equipment, surface-controlled subsurface safety valves (SCSSV) and associated control lines. Some risks include running deep production tubing installations while splicing lines to the SCSSV and possible compromise of metal-to-metal thread seals if required to hang-off and perform this test.

Another example occurs in 250.420 (b)(3) "Requiring the operator to install dual mechanical barriers in addition to cement for the final casing string to prevent flow in the event of a failure in the cement." The proposed new API RP 96 (Deepwater Well Design Considerations) will require another mechanical barrier in the final casing string, in addition to the shoe track, for wells using subsea BOP's to reduce the risk of loss of well control.

3. Other Technical Corrections

As currently drafted, Section 250.423 (b) requires negative testing to be set to either 70% of system collapse resistance pressure or saltwater gradient or 500 psi less than formation pressure (whichever is less). The rule implies that operators are required to perform a test on the casing seal; however, the industry has had several examples of where testing to a salt water gradient to sea floor has caused casing collapse in deep wells with casing across the salt. This regulation does not clearly state whether it applies to casing shoe extensions, such as expandable casing or 18" (which is a surface casing shoe extension). Since not all casing sizes (e.g. 18" and 16") have lockdown mechanisms at this time, the rule should allow for waivers to this requirement until such time that lockdown mechanisms are available.

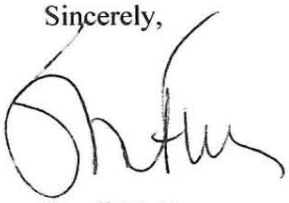
Visual Inspection and Thorough Function and Pressure Testing is Safer Verification of a Subsea BOP Stack (Section 250.416(f)): Chevron proposes that the reliability and operability of the BOP can be confirmed without bringing the entire BOP and LMRP to surface after each well, by visual inspection of a subsea BOP with a ROV and through a thorough function and pressure testing process. Any regulation that would require the Operator to pull the stack to surface, handle the riser, and re-run it introduces more risk to personnel, wellbore and equipment. The proposed new API RP-53 4th Edition states: "Section 18.2 Types of Tests. This section addresses the types of tests to be performed and the frequency of when those tests are to be performed, realizing that the BOP can be moved from well-to-well without returning to surface for inspections and testing. For those cases, a visual inspection (by ROV) should be performed. Operability and integrity can be confirmed by function and pressure testing. In these instances, subsequent testing criteria shall apply for testing parameters." This approach is safer and the regulation must be amended.

Modify the requirement for blind-shear rams to reflect the 2500 psi maximum pressure limit when placed above all pipe rams and immediately below the annular on the subsea BOP stack (Section 250.416(e)): The proposed new API RP-53 4th Edition states pipe rams must be used when shut-in pressure exceeds 2500 psi. When the blind-shear rams are above all pipe rams in the stack, the well control sequence would be to shut the annular first and then switch to a pipe ram if the shut-in pressure approaches 2500 psi. With the blind-shear ram above all pipe rams, it would be nearly impossible for the blind-shear rams to ever experience shut-in pressures approaching MASP. All subsea BOP stacks on rigs currently contracted to Chevron have the blind-shear rams placed above pipe rams. In order for the blind-shear rams to close and shear drill pipe while shut-in with pressure, the annular preventer must be closed, and all pipe rams open (e.g. during most well control operations).

Modify deadman system testing requirements to increase safety (Section 250.449(k)): As drafted, Operators must test the deadman system during the initial test on the seafloor. Chevron believes intentionally disabling the deadman system increases the risk to personnel, wellbore and equipment should a "power management" or "loss of station keeping" incident occur during a deadman system test. Testing of the deadman system requires shutting down of power and hydraulic systems to the BOP thereby eliminating the ability to disconnect in a controlled manner should a "power management" or "loss of station keeping" incident occur. As a result, rig personnel could be exposed to the consequences of a violent release of tension if a riser component fails and seafloor architecture will be exposed to released / dropped riser components. Chevron urges BOEMRE to revise the deadman system testing requirement, bringing it in line with the proposed new API RP-53 4th Edition recommendations. Specifically, testing should be completed during commissioning, rig acceptance and if any modifications or maintenance has been performed on the system, not to exceed 5 years.

Chevron appreciates the opportunity to comment on this important rule, and we stand ready to work with BOEMRE regulatory staff to ensure that the *Interim Final Rule* accomplishes its intended purpose which is to improve operating standards without unintended consequences that compromise safety or expose operators to confusion and compliance uncertainty.

Sincerely,



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APPENDIX A: Technical Amendments Needed to Maintain Integrity of RPs

As stated earlier, Chevron strongly believes that BOEMRE should promptly strike the final sentence in section 250.198 (a)(3). If BOEMRE decides to continue with this regulatory approach, then the following technical issues found in API RP 65 and RP 65 Part 2, together with those incorporated into the main letter, must be addressed before publishing the final rule.

4.7.10 "Compatibility between slurries must be tested to insure that rheological behavior, thickening time, fluid loss and slurry stability are not compromised." Compatibility testing should be required only when historical test data is not available to demonstrate that the proposed slurries are compatible as designed. Cement Service providers test their slurry additives to identify incompatibilities and retain this information for inspection upon request by the Operator and/or Regulator.

4.8.2.2 "The actual hole size must be also known to allow proper calculations of friction pressure both during the cementing operation and when running casing." This requirement must be modified to allow for other measurement techniques that have comparable accuracy. Examples of other measurement techniques currently available include fluid calipers, LWD calipers and sweeps that can also be used to calculate actual hole size. All of these should meet the regulatory requirements of this rule.

4.9.7 "All pertinent job data must be monitored and recorded by computerized data acquisition equipment." This requirement must be modified to recognize that all pertinent job data must be monitored and recorded by computerized data acquisition equipment except drilling fluid and spacer densities, which will be measured with pressurized mud balance only. It is not recommended to pump mud and spacer through cement mixing equipment as it could lead to contamination of the cement slurry.

4.9.10 "Volumes in excess of 50% of the capacity of the shoe track must not be exceeded when pumping additional fluid over calculated displacement volume." When using NAF drilling fluid, this requirement must be modified to allow use of predictive software to model the compressibility of the NAF drilling fluid in order to more accurately displace the cement. Current software prediction of the compressed volume for NAF drilling fluids usually exceeds 50% of the shoe track volume. This cannot be done for expandable casing where the plug has to be bumped for the casing to expand (e.g. pump until you bump).

4.9.11 "The spacer ahead of the cement slurry must be pumped ahead of the bottom wiper plug." Long displacement jobs where an unacceptable volume of mud film may be wiped in between the spacer and cement. In some cases it may be better to place the bottom plug in front of the spacer. This requirement should be amended to allow for engineering judgment to avoid increased risks.

4.10.2 "Preferably, pressure testing casing must be done before significant gel strength has developed." This must be modified to allow pressure testing to occur when sufficient cement compressive strength has developed to withstand the stresses imposed by the casing pressure test prior to testing casing.

5.0 "Lost circulation must be prevented as well." Such a regulation is unimplementable as written. Reasonable attempts can be made; however, such a requirement is technically infeasible in all situations.

5.0 "The frictional pressure, combined with the hydrostatic pressure of the fluid must be kept below the pressure at which the formations are broken down." Such a regulation is unimplementable as written. Reasonable attempts can be made; however, such a requirement is technically infeasible in all situations.

7.3 "To be effective, sweeps must have significantly different properties (higher viscosity and/or density) than the existing mud..." This requirement should be modified to, "To be effective, sweeps must have higher viscosity and/or density than the existing mud."

7.3 "The kill or pad mud must have proper fluid loss control to prevent uncontrolled filter cake development." Chevron requests to change "must have proper" to "may employ fluid loss control."

8.3 "Lost circulation must be cured prior to the start of the cementing operation." Delaying the cementing operation may increase the risk of achieving isolation or barrier. Chevron makes every reasonable attempt to cure lost circulation; however, this is not always possible.

11.1 "Additionally, the durability of the cement must be enhanced by the use of materials which impart good "toughness" properties." Using cement performance from similar offset wells and casing cementations, along with predictive software to confirm if conventional slurries are sufficient or if specialized slurries are required for the proposed well. These approaches should be recognized in the final rule.

14.1 "Once the slurry is mixed; it must be pumped downhole using the rates determined by computer simulations for the mud removal process." Actual well conditions may dictate a variance in the pump rate versus computer simulations (e.g. induced losses). Such variances must be allowed in order to ensure drilling safety and proper engineering oversight.

16.2 "...but a bypass must be left open to allow full hydrostatic of the ocean to be transmitted to the wellbore for non-foamed slurries." As written, the regulation specifically requires an available barrier to be left unused and risks loss of well control and risk to personnel safety to mitigate with unplanned/special operations and or loss of well location and re-spud.

C.10.2.6 "Preferably, the wellhead seals must not be set until the cement across the potential SWF zone has reached "initial set." This must be modified to address the current wellhead designs used, which require the seals to be set when shallow casing is landed. For example, the 28" lands in a supplemental adapter which seals around the hanger when landed. Cement returns are taken through valves on the 36", which are then closed after the cement job to isolate the annulus, as required. The 22" is attached to the HPWH and utilizes a similar approach to seal the annulus.