DESOTO CANYON BLOCK 491
OCS-G-23516 #1 ST01
MAY 2013

PROPOSED ALTERNATE MEANS OF COMPLIANCE **TO 30 CFR 250**

BOPE SYSTEMS

1. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.448** is requested. The BOP stack is equipped (from top down) with two (2) Annular Preventers, one (1) Blind Shear Ram, one (1) Casing Shear Ram, three (3) Variable Bore Rams and one (1) Test Ram. The Test Ram is equipped with an inverted Variable Bore Ram and to be used as a 'Test' Ram only and as such will be pressure tested from the top side only. BOPE pressure tests will be performed using the noted 'Test' Ram to the test pressures stated on the APD sheet for each hole-section. 'Test' Rams are not well control rams.

   A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.449 (h)** is requested. Rams not intended for use in well control situations will not be function tested every seven (7) days as stipulated in **30 CFR 250.449 (h)**. The 'Test' Ram falls under this category as they are not intended for use in well control situations and will not be function tested every seven (7) days.

   Justification
   If the rams have no purpose at a specific time, then function testing should not be a requirement until they have an intended use or benefit. Inverted Test rams (uni-directional) are not intended, or planned, to be utilized as a well control device unless it is bi-directional in its pressure sealing capabilities. Unnecessary function testing reduces the risk of unintended consequences.

2. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.448** is requested. The BOP is equipped with a Casing Shear Ram in the second ram cavity from the top of the stack. Casing Shear rams have limited sealing capability and are not required rams. The Casing Shear Ram will not be pressure tested.

   Justification
   Casing shear rams are designed with the primary purpose of shearing pipe and have limited sealing capacity.

3. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.448** is requested. The BOP/Wellhead connector will not be pressure tested every fourteen (14) days with the BOP tests since the Test Ram will be utilized for BOP testing.

   Upon initial installation, the BOP/Wellhead connector will be pressure tested with seawater to the maximum MAWP reported in the APD + 500 psi with an isolation test tool.

   Subsequent tests of the BOP/Wellhead connector will coincide with the required casing tests and associated casing test pressures.

   Justification
   The connector and associated ring gasket between the Wellhead and BOP are highly reliability items.

4. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.448 (a) (b)** is requested. Provided the BOP meets the requirements under **30 CFR 250.442** for drilling operations and contains two sets of pipe rams capable of sealing on the drill string in use, other rams having no current utility and which will not be used for well control purposes will not be tested as required under **30 CFR 250.447 (b) & 250.448** until such time as they are to be used during their intended operations.

   Justification
   Specific rams for specific operations will not be used for well control.

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5. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.448 (b)** is requested. Once the BOP is installed subsea, the high pressure test for the blind/shear ram is to be limited to the approved respective casing/liner test pressures listed on the Supplemental APD Information Sheet. The blind/shear ram test will be done concurrently with the casing test. The last five minutes of the casing test will demonstrate the pressure integrity of the blind/shear ram.

   Justification
   The blind/shear ram has already been stump tested upon installation for the DC 535 #1 well and will be pressure tested at all casing points as per **30 CFR 250.449 (d)**. Blind/shear ram test frequency shall not exceed 30 days between pressure tests as per **30 CFR 250.449 (e)**.

   Upon initial installation, the blind/shear ram was pressure tested with seawater to the maximum MAWP reported in the APD + 500 psi with an isolation test tool.

   After installation the blind/shear ram is typically tested on casing prior to drill out and thus the casing test pressure should dictate the magnitude of the blind shear ram test pressure, otherwise the casing test pressure may be greater than intended. When nested liners are used the liner test pressures may differ from casing test pressures required in **30 CFR 250.423 (a)**.

6. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.448 (b) & (c)** is requested. The BOP System stump test pressures used for the DC 535 #1 well will suffice for the DC 491 #1 well. The APD approved stump pressure tests for the rams for the DC 535 #1 well was 11,000 psi and for the annular was 7,500 psi. The actual stump test pressures for the DC 535 #1 were greater than the APD approved values.

7. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.448 (b)** is requested. The inner and outer sweep/bleed valves (kill side) will not be pressure tested to their rated working pressure. A pressure test of the inner and outer sweep/bleed valves (kill side) shall be to the same test pressure as specified in the APD for the Annular Preventer.

   Justification
   The inner and outer sweep/bleed valves (kill side) are in close proximity of the Annular combined with the expected maximum pressure to be exerted on the Annular.

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8. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.449 (b) (f)** is requested for drilling operations. The size of drill string that an annular BOP must be tested against is not specified in the current regulations. For clarification, the annular BOP will be pressure tested as follows:
   - During stump testing only against the smallest pipe to be used during drilling operations; and
   - During subsequent testing performed after BOP installation subsea only against the smallest pipe being utilized at the time of testing.

   The sizes of drill strings that the Variable Bore Pipe Rams will be pressure tested against are as follows:
   - During stump testing against both the smallest and largest sizes of drill pipe to be used during drilling/completion operations; and
   - During subsequent testing performed after BOP installation subsea against both the smallest and largest sizes of drill pipe being utilized at the time of testing.

   Justification
   Limiting the drill string sizes to be tested reduces the number of cycles for the BOP which will reduce wear and fatigue on the BOPE system.

9. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.433 (b)** is requested. A full function and flow-through test on the diverter was conducted upon initial installation of the riser. Subsequent actuation tests will be conducted not less than once every 7 days, alternating between control stations. Partial closing and subsequent opening of the diverter element shall be considered a successful function test. Actuation every 7 days may be extended to the next trip up to inside the casing if hole-conditions are unstable, (i.e. lost circulation, differential sticking, etc.). An extended diverter actuation due to unstable hole-conditions shall be noted as such in the IADC report.

   Justification
   Partial closing/opening, in lieu of full actuation, verifies diverter functionality while reducing wear and fatigue on the equipment.

10. A **CLARIFICATION** for **30 CFR 250.447 (c)** is requested. The BOP will not be tested before the drilling out of each casing string provided the previous BOP test pressures meet or exceed the required test pressures for the subsequent interval to be drilled, the elapsed time has not been exceeded per 30 CFR 250.447 (b) and the BOP was not removed in order to land the casing string.

    Justification
    General compliance with regulations. This clarification will apply if the actual BOP high test pressures for a hole-section is equal to or greater than the APD specified high test pressures for the hole-sections below the current casing string.

11. A **CLARIFICATION** for **30 CFR 250.446 (b)** is requested. The Subsea BOP and marine riser will be visually inspected a minimum of once every three (3) days, or as soon as possible thereafter should weather and/or sea conditions prevent inspection within this period. An extended subsea inspection period due to weather and/or sea conditions shall be noted as such on the IADC report.

    Justification
    General compliance with regulations.

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12. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.445 (g)** and **30 CFR 250.449 (i)** are requested. A safety valve with the proper connection for the casing being run will be available and actuated only if the length of casing being run exceeds the water depth which would result in the casing being across the blind/shear rams prior to crossing over to the drill pipe landing string.

    Justification
    In this case where the length of the casing string does not exceed the water depth if a well control event occurs while running casing, the casing string will be above the blind shear rams and the blind shear rams can be closed to shut-in the well. Once the landing string is made up to the casing, the normal drill string safety valve will be on the drill floor in the open position.

13. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.402 (b)** is requested to allow the use of a subsea wellhead drill string hang off tool landed in the wellhead or by hanging off the drill string on a pipe ram (instead of a storm packer, cement plug, or bridge plug) in order to secure the well for weather/hurricane evacuation or LMRP repair purposes.

    Justification
    In some instances (i.e. when time does not allow, when problems are encountered when installing a storm packer and safety valve, when large OD casing is run to the mudline for which such large OD storm packers or bridge plugs are not available, etc.) alternative methods of wellbore isolation may provide a more robust isolation solution.

    The noted subsea wellhead hang off tool to be designed to accommodate closure of the middle Variable Bore Pipe Ram on a mandrel with the Blind Shear Rams closed above it. In both methods closure (seal) of at least one pipe ram around the drill string or tool's mandrel and closure of the blind shear rams above the pipe ram will secure the well. In addition, at least one drill string float valve will be run to secure the inside of the drill string during evacuation. The method requested provides two mechanical barriers on the drill string and annulus. Once the pipe ram(s) and blind-shear ram(s) are closed, the hydrostatic pressure is trapped below the pipe ram(s) so that a riser margin is not required once the rams are secured. A negative test can then be performed to a seawater gradient beneath the blind shear ram. Once the negative test is confirmed, positive pressure (equivalent to mud hydrostatic pressure) will be trapped between the closed pipe and blind rams. The riser will be displaced to seawater and afterwards, the trapped pressure can be verified between the rams. Once the LMRP is disconnected, provided sea conditions allow, the ROV can conduct an inspection of the BOP bore while the riser and LMRP are being pulled.

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CASING PRESSURE TESTING

14. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.423 (c)** is requested. It is requested that negative testing not be required for the planned intermediate casing and liner strings, but only be required prior to displacing kill weight fluids and prior to disconnect of the BOP/Riser.

    Justification
    No appreciable negative pressure loading is anticipated to be seen on intermediate casing and liner strings until kill weight fluids are displaced from the wellbore and the BOP/Riser is disconnected. Since this permit covers only drilling open hole to TD and possible wireline logging, a negative test is not contemplated unless there is an unplanned BOP or LMRP riser trip. Negative testing would be addressed and conducted under a different APM or AST prior to abandoning a casing string or the well. Any potential leak paths which might exist in the intermediate casing and liner strings and their associated seals and barriers are expected to present themselves during positive pressure testing of these strings.

15. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.423 / 425** is requested. Casing/liner test pressures approved in the APD Supplemental Information Sheet will be adjusted to reflect the actual mud weight in the hole at the time the test occurs, (which may differ from the projected mud weight listed on the Supplemental APD Information Sheet), so that the adjusted casing pressure test remains equivalent to the approved test pressure. The method of calculation shall remain identical to the approved APD and any deviations shall require prior approval.

    BSEE approval to be required if the adjusted casing/liner test pressure is not equivalent to the approved APD casing test pressure and/or if the casing setting depth varies more/less than 100 feet TVD from the approved APD casing setting depth.

    Justification
    Assures that the casing/liner strings are tested to the equivalent of the approved APD casing/liner test pressures.

DRILLING

16. A **PROPOSED ALTERNATE MEANS OF COMPLIANCE** for **30 CFR 250.461 (b)** is requested. APC requests the following:

    - During angle and/or azimuth changes surveys to be taken a maximum of every stand.

    A stand length on the ENSCO 8506 is estimated at +/-140 feet.

    Justification
    Some rigs now have derricks that handle quads instead of triples resulting in connections that will exceed the stipulated 100 foot maximum survey interval. Surveys are typically taken with the MWD when the pumps are cycled at connections. Performing surveys during routine connections at intervals not to exceed 140 feet, instead of the stipulated 100 foot maximum survey interval, is more efficient in this situation and will not appreciably affect the directional uncertainty.