United States Department of the Interior
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
Alaska OCS Region
3801 Centerpoint Drive, Suite 500
Anchorage, Alaska 99503-5823

FEB 2 1 2012

Ms. Susan Childs
Alaska Venture Support Integrator Manager
Shell Offshore, Inc.
3601 C Street, Suite 1000
Anchorage, AK 99503

Dear Ms. Childs:

We have completed our initial review of the Proprietary Data submitted in support of your Application for Permit to Drill for the Burger A drill site. As the APD is as of yet incomplete, we were unable to determine whether certain issues that we found would be answered in a subsequent submittal. However, we have provided in the attached sheet, several inaccurate or incomplete items that can be addressed with your next submission, as well as questions that may indeed be answered later in the process.

Please be advised that at this time all submissions regarding this APD should be in the form of paper documents and that electronic submission of documents are not acceptable. These submissions should be directed to me at the above address. If you have any questions please contact Mr. Kyle Monkelien at 907-334-5307.

Sincerely,

(acting)

Mark E. Fesmire, P.E. J.D.
Regional Director, BSEE AKCOS Region

Attachment

Burger A

- On form BSEE-0123

o 33) F IN the remarks states that the proposed well "will be drilled from a conical drilling unit, not from a platform."

On form BSEE-0123s

- Have to put the open hole section of the well on this form for both wells
- Interval Number 3 and 4 pore pressure listed, does not match the pore pressure plot provided

- 250.414(g)

o They state they will use permafrost cement, but do not include estimated depths to permafrost.

o Also, if permafrost is present, need to address 250.415(d)

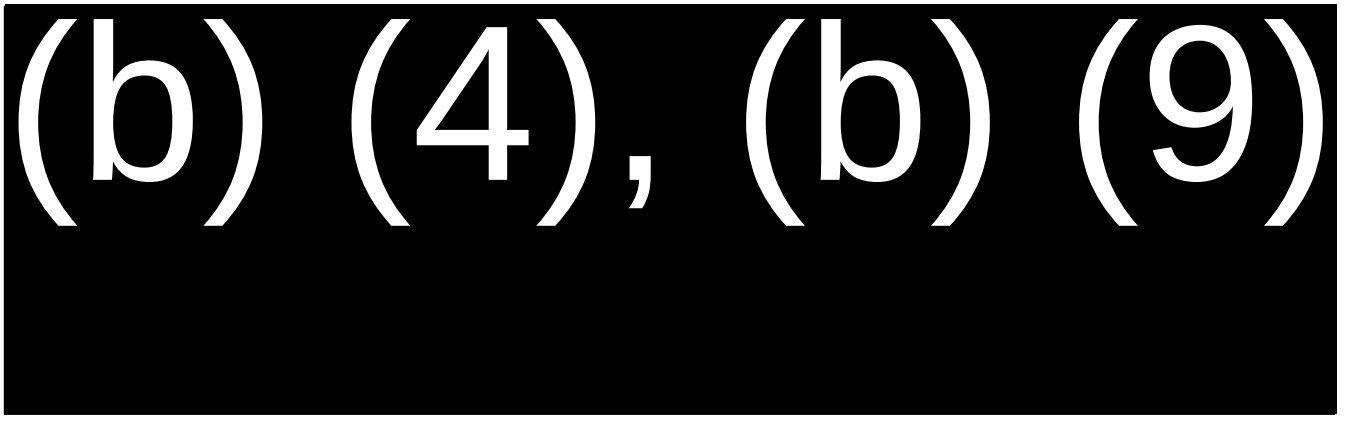
Chart entitled "Tension Safety Factors"

- In the calculations column for Burst Safety Factors for the 30" structural it states, "see MASP calcs". This calculation is not provided in the MASP worksheet.

Casing test pressure for Surface and Intermediate casings indicate that you plan to test to MASP + 500 psi. Test pressure per regulations says 70% of its minimum internal yield.

Regulations require that for BOP's: The high pressure test must equal the rated working pressure (15,000/10,000) of the equipment, or 500 psi above the (MASP) for the applicable section of hole. To test to any other pressure other than Working Pressure requires approval of the District Supervisor

Regulations require that for Annular's: The high pressure test must equal 70% of working pressure (10,000/10,000), or to a pressure approved in the APD. If you are requesting a different test pressure this should be indicated in request for departure section.



United States Department of the Interior
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APR 04 2012

Ms. Susan Childs
Alaska Venture Support Integrator Manager
Shell Offshore, Inc.
3601 C Street, Suite 1000
Anchorage, AK 99503

Dear Ms. Childs:

On March 16, 2012, BSEE AK OCS received Shell's supplementation and further development of the Applications for Permits to Drill for the Flaxman Island OCS-Y 1941 No. 001 Torpedo H well and the Posey OCS-Y 2280 No. 001 Burger A well. The partial APD's were originally submitted to this office on January 31, 2012.

As Shell has pointed out in its applications, certain portions of those applications still remain to be completed and submitted. However, BSEE is continuing to review the submissions to the extent that is possible with the information currently available.

At your request, BSEE has expedited its initial review of the information submitted to date and attached to this letter is a preliminary list of the issues we would like Shell to address to facilitate our further review of the APD's. While this list may not be comprehensive, we believe it contains most of the issues for which we will be seeking clarification.

Please be advised that at this time all submissions regarding this APD should be in the form of paper documents and that electronic submission of documents are not acceptable. These submissions should be directed to me through our point of contact, Ms. Yolanda Tankersley, at the above address. If you have any questions please contact myself or Mr. Kyle Monkelien at 907-334-5300 and 907-334-5307 respectively.

Sincerely,

Mark E. Fesmire, P.E. J.D.
Regional Director, BSEE AKCOS Region

Attachments

OCS-Y 2280 No. 001 Burger A
Comments

- On form BSEE-0123
  - Public information copy...only need one total (not one in each application)
  - Public information copy...need to fill out box #33

- On for BSEE-0123s
  - Frac Gradients listed for Intervals 4 and 5 do not match PPFG Plot given
  - Public information copy...only need one total (not one in each application)
  - Public information copy...box 3,7, and 8 don't need to be filled in

- Request for the drilling of a bypass hole will require the submittal of a new APD

- Will still need to provide an Application for Permit to Modify (APM) to perform the abandonment procedures.

- 250.415
  - The pages with the burst and collapse safety factors are titled "Tension Safety Factors," please label correctly.

- Tab 250.416 BOP
  - Need a 3rd party verification that the BOP stack is designed for specific equipment on rig and specific well design
  - Need a 3rd party verification regarding the stack has not been damaged or compromise
  - Need a 3rd party verification that the stack will operate in the conditions that it will be used.
  - Need the BOP control system diagrams.

- Tab 250.417
  BSEE is assessing information provided to directly satisfy the requirements of 250.417(a), 250.417(b), 250.417(c)(2), 250.417(d), and 250.417(e) regarding the MODU capabilities and operational limitations associated with environmental conditions at the drill site and associated plans for responding to an emergency situation that may arise from hazardous environmental conditions. This information can be provided to varying degrees of detail in a number of documents supplemental to an APD. These include (1) pages of the MODU Operating Manual/Procedures; (2) IADC Standard Format Equipment List (operational capabilities and environmental limits); (3) Mooring Analysis; (4) Riser Analysis; (5) Class Report(s); (6) Critical Operations and Curtailment Procedures (COCP); and (7) Ice Management Plan. BSEE recognizes that quantification of the relationship between unit operations, unit capabilities/limitations, and environmental conditions (wind, waves, currents, sea ice) is extremely complex, with many variables, and subject to MODU operator expertise and professional judgment. However, in order for BSEE inspectors onboard the unit to maintain a relative knowledge of the environmental conditions that could result in an exceedance of the unit's operational capabilities, it is important that this type of information within the APD documentation be

accurate, readily accessible, and as consistent as possible. See below for some specific areas in question.

- 250.417(b) Mooring Analysis: Discoverer Motion Mooring Analysis by Delmar Systems, Inc. is not signed reviewed or approved.

- 250.417(b) Mooring Analysis: 30 CFR 250.417(b) requires information that site-specific soil and oceanographic conditions are capable of supporting the proposed drilling unit. The information provided in the Discoverer Motion Mooring Analysis by Delmar Systems, Inc., incorporates oceanographic conditions but no site-specific soil conditions are provided evidencing soil properties (i.e. shear strength, stiffness).

- 250.417(b) Mooring Analysis: The mooring line properties and major components of the proposed mooring lines listed in the Discoverer Motion Mooring Analysis by Delmar Systems, Inc. does not match the mooring system components listed in the IADC Standard Format Equipment List submitted for 250.417(c) (e.g. Stevshark vs. Stevepris anchors). Which document is accurate regarding the mooring system equipment and associated specifications?

- 250.417(b) Mooring Analysis: Figure 7-*Detailed Elevation View of all line,* on page 15 of the *Noble Discoverer Motion Mooring Analysis* by Delmar Systems, Inc. is not legible in the paper or electronic APD submittals. Please provide a legible copy of this figure.

- 250.417(e) Critical Operations and Curtailment Plan (COCP): Note: Under 30 CFR 550.220(b), the term used is "procedures" not "plan". A Critical Operations and Curtailment "Plan" has been submitted with general "procedures" provided within this plan as well as within the submitted Ice Management Plan. BSEE understands that the Unit Operating Manual (or Rig Operations Procedures) maintained onboard the vessel is to contain guidance for the safe operation of the unit for both normal and envisaged emergency conditions and provide detailed well securing procedures. The COCP states that "thresholds will be established for weather and sea conditions that will control: equipment preparation to curtail operations; decision to cease drilling; hanging off drillstring or otherwise suspending the well; disconnecting riser; moving the drillship off the drill site". BSEE inspectors onboard the unit will be interested to know these thresholds before drilling commences, as they relate to a relative knowledge of the environmental conditions that could result in an exceedance of the unit's operational capabilities. Please be aware that documented "procedures" associated with drilling and vessel operations will be reviewed and become a component of the BSEE records as these procedures are established and provided to BSEE inspectors onboard the vessel.

- 250.417(a),(c),(d) DNV Report:
  - DNV Classification Certificate Expires 2012-06-15.
  - Will an "Appendix to the Class Certificate" be issued stating assumptions for the assignment of class and restrictions regarding the use of the vessel which were established or assumed at the time of assignment of class (see DNV-OSS-101 Rules for Classification of Offshore Drilling and Support Units, Chapter1, Section 4, C-106)?

- Note: No optional class notation for cold climate operations. 2011 EP identifies the Discoverer as a ship-shaped monohull with sponsons added for ice-resistance; sponsons designed and constructed to meet requirements of DNV Additional Class Notation "ICE-05". Is Shell to seek any optional class notations for cold climate (e.g. PC-7, Winterized Basic, Cold, or Arctic)?
- Note: No optional "Drill" notation. Drilling plant not classed.
- Note: Vessel not classed as a "Mobile Offshore Unit".

  - 250.417(c) Riser analysis: As the load case driver for load case 1 (operability-drilling) is the LFJ differential angle of 1 degree, will the INTECSEA recommendation (2.8) for instrumentation to carefully monitor the LFJ differential angle be implemented?

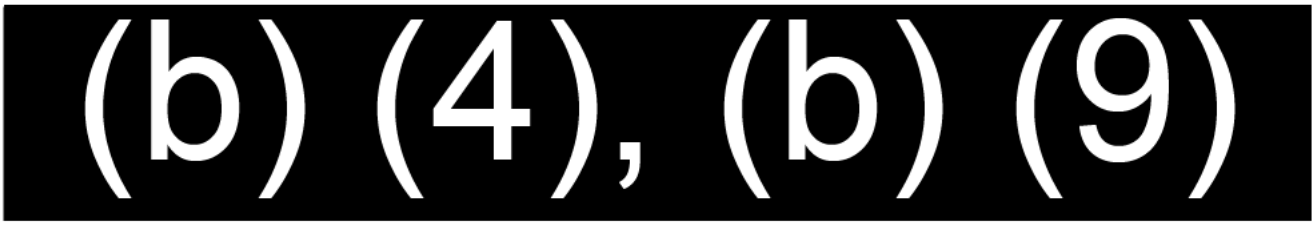
- Tab 250.418 Welding Plan
  - Noble Safety Policy Manual SPM-505 4.1.3 bullet 2 states "that in addition to the above, the fire watch shall make periodic checks with gas monitoring equipment." 250.113 (c) (2)(iv) states must maintain a *continuous* surveillance with a portable gas detector during welding and burning operation if welding occurs in an area not equipped with a gas detector. (4.4.5.3 Reiterates the periodic surveillance.)
  - Need standards or requirements for welders 250.110(a)

- Tab 250.420
  - Sentence on second page…"there will be a minimum of two independent tested barriers across each flow path while drilling in any expected hydrocarbon-bearing zone at least one of which is mechanical? Please provide specifics about what the barriers are at each point.

- Tab 250.442:
  - On the deadman sizing requirements, the volume calculated indicates that 20 accumulator bottles are required. However, only 18 dedicated bottles are listed on the available fluid list. Please confirm.

- Tab 250.444:
  - On the choke statement, it refers to the "Burger J location". We assume this should reference Burger A. Please correct.

- Tab 250.449
  - The BOP is function tested using the ROBOCOP unit controls to close one pipe ram and one blind shear ram and release the upper H-4 connector…all ROV intervention functions must be tested on the stump test.
  - Procedures state The BOP is again function tested using the ROBOCOP unit…should specifically state what is being tested.



(b) (4), (b) (9)

- We will need an updated H2S plan for operations under this APD specifically an updated emergency contact list.
    - H2S plan submitted with the Exploration Plan does not discuss the procedures for sustaining ignition and monitoring the status of the flare as required by 250.490(f)(15.

- Please be aware of the regulation at 250.459(a) that states a ventilation system capable of replacing the air once every 5 minutes or 1.0 cubic feet of air-volume flow per minute, per square foot of area, whichever is greater. Past inspections have not been able to confirm what the ventilation system in the drilling fluid-handling areas is.

OCS-Y 1941 No. 001 Torpedo H
Comments

- On form BSEE-0123
  - Public information copy...only need one total (not one in each application)
  - Public information copy...need to fill out box #33

- On for BSEE-0123s
  - Public information copy...only need one total (not one in each application)
  - Public information copy...box 3,7, and 8 don't need to be filled in

- Request for the drilling of a bypass hole will require the submittal of a new APD

- Will still need to provide an Application for Permit to Modify (APM) to perform the abandonment procedures.

- Tab 250.416 Diverter
  - Need to provide the diverter operating procedures for the Kulluk, not the Discoverer.
  - List Diverter burst strength.
  - List rated working pressure of the 16" ball valve
  - The diverter detailed drawings are unclear due to the fine detail and size. We would prefer a larger scale drawing to more accurately determine diverter pathways. (See Discoverer drawings)

- Tab 250.416 BOP
  - MASP that West engineering used for shearing was 1863 psi, yet highest calculated MASP is 3529 psi. Please evaluate at higher MASP.
  - Need a 3rd party verification that the BOP stack is designed for specific equipment on rig and specific well design
  - Need a 3rd party verification regarding the stack has not been damaged or compromised
  - Need a 3rd party verification that the stack will operate in the conditions that it will be used.
  - Need the BOP control system diagrams.
  - BOP description provided is listed for Discoverer, not Kulluk.

- Tab 250.417
  General Comment: BSEE will be assessing information provided to directly satisfy the requirements of 250.417(a), 250.417(b), 250.417(c)(2), 250.417(d), and 250.417(e) regarding the MODU capabilities and operational limitations associated with environmental conditions at the drill site and associated plans for responding to an emergency situation that may arise from hazardous environmental conditions. This information has been provided to varying degrees of detail in a number of documents supplemental to the APD. These include (1) pages of the MODU Operating Manual/Procedures; (2) IADC Standard Format Equipment List (operational capabilities and environmental limits); (3) Mooring Analysis; (4) Riser Analysis; (5) Class Report(s); (6) Critical Operations and Curtailment Procedures (COCP); and (7) Ice Management Plan. BSEE recognizes that quantification of the relationship between unit operations, unit capabilities/limitations, and environmental conditions (wind, waves, currents, sea ice) is

extremely complex, with many variables, and subject to MODU operator expertise and professional judgment. However, in order for BSEE inspectors onboard the unit to maintain a relative knowledge of the environmental conditions that could result in an exceedance of the unit's operational capabilities, it is important that this type of information within the APD documentation be accurate, readily accessible, and as consistent as possible. See below for some specific areas in question.

- 250.417(a),(c),(d) Operating Limits: Page 1 of 13 provided from Chapter 3-Vessel Operating Criteria. No information provided identifying where this page comes from?

- 250.417(a),(c),(d) Operating Limits: Information provided on Page 1 of 13 from Chapter 3-Vessel Operating Criteria does not match some of the environmental limits information provided in the IADC Standard Format Equipment List submitted for 250.417(c). Specifically (Drilling): max wind velocity (50 vs. 30 knots), max pitch and roll (2^0 vs. 7^0), max heave (12' drilling vs. 10' survival). Which document is considered accurate with regard to operating limits?

- 250.417(b) Mooring Analysis: Kulluk Motion Mooring Analysis by Delmar Systems, Inc. is not signed reviewed or approved.

- 250.417(b) Mooring Analysis: 30 CFR 250.417(b) requires information that site-specific soil and oceanographic conditions are capable of supporting the proposed drilling unit. The information provided in the Kulluk Motion Mooring Analysis by Delmar Systems, Inc., incorporates oceanographic conditions and discusses "ultimate holding capacity in site-specific lower and upper bound soils" but no site-specific soil conditions are provided evidencing soil properties (i.e. shear strength, stiffness).

- 250.417(b) Mooring Analysis: The mooring line properties and major components of the proposed mooring lines listed in the Kulluk Motion Mooring Analysis by Delmar Systems, Inc. does not match the mooring system components listed in the IADC Standard Format Equipment List submitted for 250.417(c) (e.g. Stevshark vs. Bruce anchors). Which document is accurate regarding the mooring system equipment and associated specifications?

- 250.417(b) Mooring Analysis: Figure 3-Detailed Elevation View of all line, on page 8 of the Kulluk Motion Mooring Analysis by Delmar Systems, Inc. is not legible in the paper or electronic APD submittals. Please provide a legible copy of this figure.

- 250.417(e) Critical Operations and Curtailment Plan (COCP): Note: Under 30 CFR 550.220(b), the term used is "procedures" not "plan". A Critical Operations and Curtailment "Plan" has been submitted with general "procedures" provided within this plan as well as within the submitted Ice Management Plan. BSEE understands that the Unit Operating Manual (or Rig Operations Procedures) maintained onboard the vessel is to contain guidance for the safe operation of the unit for both normal and envisaged emergency conditions and provide detailed well securing procedures. The COCP states that "thresholds will be established for weather and sea conditions that will control: equipment preparation to curtail operations; decision to cease drilling; hanging off drillstring or otherwise suspending the well; disconnecting riser; moving the drillship off

the drill site". BSEE inspectors onboard the unit will be interested to know these thresholds before drilling commences, as they relate to a relative knowledge of the environmental conditions that could result in an exceedance of the unit's operational capabilities. Please be aware that documented "procedures" associated with drilling and vessel operations will be reviewed and become a component of the BSEE records as these procedures are established and provided to BSEE inspectors onboard the vessel.

- Tab 250.418 Welding Plan
  - Noble Safety Policy Manual SPM-505 4.1.3 bullet 2 states "that in addition to the above, the fire watch shall make periodic checks with gas monitoring equipment." 250.113 (c) (2)(iv) states must maintain a *continuous* surveillance with a portable gas detector during welding and burning operation if welding occurs in an area not equipped with a gas detector. (4.4.5.3 Reiterates the periodic surveillance.)
  - Need standards or requirements for welders as required by 250.110(a) written within the plan.

- Tab 250.420
  - Referred to Sivulliq N rather than Torpedo H on back side of statement
  - Last sentence on this page..."there will be a minimum of two independent tested barriers across each flow path while drilling in any expected hydrocarbon-bearing zone at least one of which is mechanical? Please provide specifics about what the barriers are at each point.
- Tab 250.449
  - The BOP is function tested using the ROBOCOP unit controls to close one pipe ram and one blind shear ram and release the upper H-4 connector...per 250.449(j) all rov intervention functions must be tested on the stump test.
  - Procedures state The BOP is again function tested using the ROBOCOP unit...should specifically state what is being tested.
  - No procedures have been submitted to test the autoshear/deadman system either on the stump or initial sea floor test. Since the documentation is for the Discoverer we are unsure as to whether the Kulluk has an autoshear /deadman system.

- Please be aware of the regulation at 250.459(a) that states a ventilation system capable of replacing the air once every 5 minutes or 1.0 cubic feet of air-volume flow per minute, per square foot of area, whichever is greater. This will need to be verified prior to commencing drilling operations.

Shell Exploration & Production

Shell
3601 C Street, Suite 1000
Anchorage, AK 99503
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Mark Fesmire, Alaska Region Director
Alaska OCS Region
U.S. Department of Interior
Bureau of Safety & Environmental Enforcement
3801 Centerpoint Drive, Suite 500
Anchorage, AK 99503-5823

April 17, 2012

Re: Shell Gulf of Mexico Inc. - Applications for Permit to Drill for Burger A, F, J, R, S and V wells – Alaska Outer Continental Shelf, Chukchi Sea

Dear Mr. Fesmire:

Shell Gulf of Mexico Inc. (Shell) hereby submits Applications for Permit to Drill (APD) for the following drill sites in the Chukchi Sea:

- Lease # OCS-Y 2280, Posey Block 6764, Burger A (#001)
- Lease # OCS-Y 2267, Posey Block 6714, Burger F (#001)
- Lease # OCS-Y 2321, Posey Block 6912, Burger J (#001)
- Lease # OCS-Y 2294, Posey Block 6812, Burger R (#001)
- Lease # OCS-Y 2278, Posey Block 6762, Burger S (#001)
- Lease # OCS-Y 2324, Posey Block 6915, Burger V (#001)

The APD submittals for Burger F, J, R, S and V are new applications. The Burger A APD is the third submittal of information for this proposed well. The initial Burger A APD was submitted on January 31, 2012. On February 21, 2012, Shell received a request for additional information (RFAI) from the Bureau of Safety and Environmental Enforcement (BSEE) on the Burger A APD submittal. A second Burger A APD submittal, containing additional information and responses to BSEE's RFAIs occurred on March 16, 2012. On April 24, 2012, Shell received a second RFAI from BSEE on the Burger A APD submittal. This third APD submittal contains updated information and responses to BSEE's second RFAI on the Burger A APD, plus where applicable, BSEE's RFAIs have been addressed in the remaining new APDs for proposed drill sites at Burger.

These APD submittals are presented in the form of two volumes. One volume contains information that is specific to the drillship *Noble Discoverer* and the Burger Prospect area. Three copies of this information are submitted for the six Burger APDs. As per regulation 30 CFR 250.417(g) this information will only be submitted once, conditioned on being approved by BSEE. If this information changes, these changes will be submitted to BSEE. The second volume contains the subsurface information specific to each APD (e.g. Burger A, F, J, R, S and V). Three copies of this second volume are submitted for each drill site.

In addition to the APD documents, also attached are the following:

- Signed BSEE-0123 forms for each APD drill site
- A spreadsheet defining the second RFAI for Burger A APD from BSEE and Shell's responses
- A copy of an updated H_2S Contingency Plan (the H_2S Contingency Plan, submitted November 2011 with the Revised Chukchi Sea Exploration Plan, is not part of these APD submittals)

Shell requests that the Burger A APD submittal be given priority of review, followed by Burger J, Burger V, Burger F, Burger S then Burger R.

Shell asserts all materials submitted with this letter, except for the public information version of forms BSEE-0123 and -0123S, remain proprietary and are not subject to requests under the Freedom of Information Act (FOIA). Shell requests continuing confidentiality of the materials submitted herein, as well as any additional documentation supplied by Shell in support of this APD in response to requests for additional information by either BSEE, or Bureau of Ocean Energy Management. Shell will inform BSEE at the time of submittal if any additional documentation is not subject to FOIA assertion by Shell.

Please coordinate any requests for additional information through me at (907) 646-7112 or at Susan.Childs@Shell.com, or Pauline Ruddy at (907) 771-7243 or at Pauline.Ruddy@Shell.com.

Sincerely,

Susan Childs
AK Venture Support Integrator, Manager

Attachments:

BSEE RFAI Comment and Response spreadsheet
Signed BSEE-0123 Forms (Proprietary and Public)
M/V *Noble Discoverer* and Burger Area Specific Documents (3 copies)
Burger A APD documents (3 copies)
Burger F APD documents (3 copies)
Burger J APD documents (3 copies)
Burger R APD documents (3 copies)
Burger S APD documents (3 copies)
Burger V APD documents (3 copies)
H_2S Contingency Plan

Burger A

CFR	BSEE Information Request or Comment	Response
250.410	On form BSEE-0123:	
	Public information copy only need one total (not one in each application)	For completeness, under Tab 250.410 a public information copy of form BSEE-0123 has been put in each copy so that each copy is identical.
	Public information copy need to fill out box #33	Box 33 for the public version of form BSEE-0123 has been completed and is placed under Tab 250.410.
	On form BSEE-0123s:	
	Frac Gradients listed for Intervals 4 and 5 do not match PPFG Plot given	The BSEE-0123S form in Tab 250.410 now matches the PPFG plot under Tab 250.413.
	Public information copy only need one total (not one in each application)	For completeness, a public information copy of form BSEE-0123S has been put in each copy so that each copy is identical.
	Public information copy box 3,7, and 8 don't need to be filled in	Information contained in Boxes 3, 7, and 8 of the public information copy of form BSEE-0123S under Tab 250.410 has been removed.
	Request for the drilling of a bypass hole will require the submittal of a new APD	Comment noted.
	Will still need to provide an Application for Permit to Modify (APM) to perform the abandonment procedures.	Comment noted.
250.415	The pages with the burst and collapse safety factors are titled "Tension Safety Factors," please label correctly.	The document is now labeled correctly and is placed under Tab 250.415.
250.416	Need a 3rd party verification that the BOP stack is designed for specific equipment on rig and specific well design	Included under Tab 250.416 is a Provisional Verification of BOP Compatibility certificate supplied by West Engineering for the well site.
	Need a 3rd party verification regarding the stack has not been damaged or compromised	
	Need a 3rd party verification that the stack will operate in the conditions that it will be used	
	Need the BOP control system diagrams.	The *Noble Discoverer* BOP control system diagrams are currently being revised to incorporate the new Trendsetter ROBOCOP remote ROV intervention panel. This system is being manufactured and will be installed in May. A revised and updated control system diagram will be finalized upon completion of installation in May, and independently verified by West Engineering as a third party. Once the control system diagram is complete, this documentation will be submitted to BSEE.

Burger A

CFR	BSEE Information Request or Comment	Response
250.417	BSEE is assessing information provided to directly satisfy the requirements of 250.417(a), 250.417(b), 250.417(c)(2), 250.417(d), and 250.417(e) regarding the MODU capabilities and operational limitations associated with environmental conditions at the drill site and associated plans for responding to an emergency situation that may arise from hazardous environmental conditions. This information can be provided to varying degrees of detail in a number of documents supplemental to an APD. These include (1) pages of the MODU Operating Manual/Procedures; (2) IADC Standard Format Equipment List (operational capabilities and environmental limits); (3) Mooring Analysis; (4) Riser Analysis; (5) Class Report(s); (6) Critical Operations and Curtailment Procedures (COCP); and (7) Ice Management Plan. BSEE recognizes that quantification of the relationship between unit operations, unit capabilities/limitations, and environmental conditions (wind, waves, currents, sea ice) is extremely complex, with many variables, and subject to MODU operator expertise and professional judgment. However, in order for BSEE inspectors onboard the unit to maintain a relative knowledge of the environmental conditions that could result in an exceedance of the unit's operational capabilities, it is important that this type of information within the APD documentation be accurate, readily accessible, and as consistent as possible. See below for some specific areas in question.	Comment noted.
	250.417(b) Mooring Analysis: Discoverer Motion Mooring Analysis by Delmar Systems, Inc. is not signed reviewed or approved.	The mooring analysis report, under Tab 250.417 now has signatures.
	250.417(b) Mooring Analysis: 30 CFR 250.417(b) requires information that site-specific soil and oceanographic conditions are capable of supporting the proposed drilling unit. The information provided in the Discoverer Motion Mooring Analysis by Delmar Systems, Inc., incorporates oceanographic conditions but no site-specific soil conditions are provided evidencing soil properties (Le. shear strength, stiffness).	Site specific geothechnical report has been added to section 250.417.
	250.417(b) Mooring Analysis: The mooring line properties and major components of the proposed mooring lines listed in the Discoverer Motion Mooring Analysis by Delmar Systems, Inc. does not match the mooring system components listed in the IADC Standard Format Equipment List submitted for 250.417(c) (e.g. Stevshark vs. Stevepris anchors). Which document is accurate regarding the mooring system equipment and associated specifications?	The mooring equipment listed in the IADC equipment list is what the drilling vessel has as standard equipment. We are renting the equipment specified in the Delmar Mooring Analysis to fill the requirements of the Mooring Analysis. This is equipment to take the place of the mooring/anchoring equipment as shown in the IADC equipment lists
	250.417(b) Mooring Analysis: Figure 7-Detailed Elevation View of off fine, on page 15 of the Noble Discoverer Motion Mooring Analysis by Delmar Systems, Inc. is not legible in the paper or electronic APD submittals. Please provide a legible copy of this figure.	A legible drawing have been added to the end of the Mooring Analysis, under Tab 250.417.

Burger A

CFR	BSEE Information Request or Comment	Response
	250.417(e) Critical Operations and Curtailment Plan (COCP): Note: Under 30 CFR 550.220(b), the term used is "procedures" not "plan". A Critical Operations and Curtailment "Plan" has been submitted with general "procedures" provided within this plan as well as within the submitted Ice Management Plan. BSEE understands that the Unit Operating Manual (or Rig Operations Procedures) maintained onboard the vessel is to contain guidance for the safe operation of the unit for both normal and envisaged emergency conditions and provide detailed well securing procedures. The COCP states that "thresholds will be established for weather and sea conditions that will control: equipment preparation to curtail operations; decision to cease drilling; hanging off drillstring or otherwise suspending the well; disconnecting riser; moving the drillship off the drill site". **BSEE inspectors onboard the unit will be interested to know these thresholds before drilling commences, as they relate to a relative knowledge of the environmental conditions that could result in an exceedance of the unit's operational capabilities.** Please be aware that documented "procedures" associated with drilling and vessel operations will be reviewed and become a component of the BSEE records as these procedures are established and provided to BSEE inspectors onboard the vessel.	Critical operations and curtailment procedures associated with drilling and vessel operations will be available to BSEE inspectors when they are onboard the drilling vessel.
	250.417(a),(c),(d) DNV Report:	
	DNV Classification Certificate Expires 2012-06-15.	The current DNV Certificate of Class expires 15JUN2012. The Special Periodic Survey (Class Renewal Survey) is currently underway, and the Class will be renewed prior to 15JUN2012. The new certificate will be submitted to BSEE when acquired.
	Will an "Appendix to the Class Certificate" be issued stating assumptions for the assignment of class and restrictions regarding the use of the vessel which were established or assumed at the time of assignment of class (see DNV-OSS-101 Rules for Classification of Offshore Drilling and Support Units, Chapter1, Section 4, C-106)?	There will not be an Appendix to the Class Certificate issued. The vessel's classification incorporates all operating criteria (restrictions) and assumptions.
	Note: No optional class notation for cold climate operations. 2011 EP identifies the Discoverer as a ship-shaped monohull with sponsons added for ice resistance; sponsons designed and constructed to meet requirements of DNV Additional Class Notation "ICE-OS". Is Shell to seek any optional class notations for cold climate (e.g. PC-7, Winterized Basic, Cold, or Arctic)?	There will not be any additional ice-class notation requested.
	Note: No optional "Drill" notation. Drilling plant not classed.	The *Noble Discoverer* does not carry DNV classification on drilling systems as it is not a requirement.
	Note: Vessel not classed as a "Mobile Offshore Unit".	The *Noble Discoverer* is classed as a Maltese Cross w/Overscored DOT Ship-Shaped Drilling Unit, which means that it carries full DNV Steel Vessels classification (with overscored dot indicating the vessel was constructed under a different classification society).

Burger A

CFR	BSEE Information Request or Comment	Response
	250.417(c) Riser analysis: As the load case driver for load case 1 (operability-drilling) is the LFJ differential angle of 1 degree, will the INTECSEA recommendation (2.8) for instrumentation to carefully monitor the LFJ differential angle be implemented?	With regard to the method of measuring the LFJ differential angle, the *Noble Discoverer* is fitted with an acoustic positioning monitoring system, which includes an Electronic Riser Angle (ERA) measurement system. The system is a Kongsberg Model SPT 331, SBBL. The method used to determine LFJ differential angle is via the ERA transponder, which is fixed above the LFJ prior to deployment of the BOP. In addition to this the LFJ angle can be determined using vessel offset data, which is provided by a positioning transponder located on the BOP and LMRP.
250.418	Tab 250.418 Welding Plan	
	Noble Safety Policy Manual SPM-SOS 4.1.3 bullet 2 states "that in addition to the above, the fire watch shall make periodic checks with gas monitoring equipment." 250.113 (c) (2)(iv) states must maintain a continuous surveillance with a portable gas detector during welding and burning operation if welding occurs in an area not equipped with a gas detector. (4.4.5.3 Reiterates the periodic surveillance.)	Noble will revise the rig-specific Safe Welding Area document to add the requirement of continuous monitoring with a portable gas detector during hot work operations in an area not equipped with gas detection. Revision will be made prior to 15MAY2012.
	Need standards or requirements for welders 250.110(a)	Welders are certified to the American Bureau of Shipping 6G Standard.
250.420	Sentence on second page..."there will be a minimum of two independent tested barriers across each flow path while drilling in any expected hydrocarbon-bearing zone at least one of which is mechanical? Please provide specifics about what the barriers are at each point.	A document providing the specific for these barriers is included under section 250.420.
250.442	On the deadman sizing requirements, the volume calculated indicates that 20 accumulator bottles are required. However, only 18 dedicated bottles are listed on the available fluid list. Please confirm.	The Noble Discoverer BOP is fitted with 20 stack-mounted bottles for the deadman function.
250.444	On the choke statement, it refers to the "Burger J location". We assume this should reference Burger A. Please correct.	The correct version is now included.
250.449	The BOP is function tested using the ROBOCOP unit controls to close one pipe ram and one blind shear ram and release the upper H-4 connector...all ROV intervention functions must be tested on the stump test.	The ROV Operation document under Tab 250.449 has been modified to list what is being tested.
	Procedures state The BOP is again function tested using the ROBOCOP unit...should specifically state what is being tested.	
250.456	(b) (4), (b) (9) [redacted]	The kill weight fluid statement under Tab 250.456 has been modified to address this request.
	We will need an updated H2S plan for operations under this APD specifically an updated emergency contact list.	The H_2S plan has been updated with emergency contact information. A copy of the H_2S plan is submitted as an attachment to the cover letter.

Burger A

CFR	BSEE Information Request or Comment	Response
	H2S plan submitted with the Exploration Plan does not discuss the procedures for sustaining ignition and monitoring the status of the flare as required by 250.490(f)(15.	Shell has modified the Waiver to Regulation document (section 250.414) to include a waiver to this regulation. Shell does not intend to circulate out kicks from any zone capable of producing H2S. Instead the kick will be bullheaded back into the formation to avoid bringing the gas to the rig floor, through the choke manifold and into the vent piping system on the rig. For this reason, the need for a flare does not exist.
250.459	Please be aware of the regulation at 250.459(a) that states a ventilation system capable of replacing the air once every 5 minutes or 1.0 cubic feet of air-volume flow per minute, per square foot of area, whichever is greater. Past inspections have not been able to confirm what the ventilation system in the drilling fluid-handling areas is.	The mud pit room ventilation is sized to provide an air change every 2 minutes as calculated by LC Eldridge.

Shell Exploration & Production

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Shell
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April 17, 2012

Re: Shell Offshore Inc. - Applications for Permit to Drill for Sivulliq N and G and Torpedo H and J wells – Alaska Outer Continental Shelf, Beaufort Sea

Dear Mr. Fesmire:

Shell Offshore Inc. (Shell) hereby submits Applications for Permit to Drill (APD) for the following drill sites in the Camden Bay area of the Beaufort Sea:

- Lease # OCS-Y 1805, Flaxman Island Block 6658, Sivulliq N (#001)
- Lease # OCS-Y 1805, Flaxman Island Block 6658, Sivulliq G (#002)
- Lease # OCS-Y 1941, Flaxman Island Block 6610, Torpedo H (#001)
- Lease # OCS-Y 1936, Flaxman Island Block 6559, Torpedo J (#001)

The APD submittals for Sivulliq G and N, and Torpedo J are new applications. The Torpedo H APD is the third submittal of information for this proposed well. The initial Torpedo H APD was submitted on January 31, 2012. On February 21, 2012, Shell received a request for additional information (RFAI) from the Bureau of Safety and Environmental Enforcement (BSEE) on the Torpedo H APD submittal. A second Torpedo H APD submittal, containing additional information and responses to BSEE's RFAIs occurred on March 16, 2012. On April 24, 2012, Shell received a second RFAI from BSEE on the Torpedo H APD. This third APD submittal contains updated information and responses to BSEE's second RFAI on the Torpedo H APD, plus where applicable, BSEE's RFAIs have been addressed in the remaining APDs for proposed drill sites at Torpedo and Sivulliq.

These APD submittals are presented in the form of two volumes. One volume contains information that is specific to the conical drilling unit *Kulluk* and the Sivulliq and Torpedo Prospects area. Three copies of this information are submitted for the four Sivulliq and Torpedo APDs. As per regulation 30 CFR 250.417(g) this information will only be submitted once, conditioned on being approved by BSEE. If this information changes, these changes will be submitted to BSEE. The second volume contains the subsurface information specific to each APD (e.g., Sivulliq G, N or Torpedo H or J). Three copies of this second volume are submitted for each drill site.

In addition to the APD documents, also attached are the following:

- Signed BSEE-0123 forms for each APD;
- Spreadsheet defining the second RFAI for Torpedo H APD from BSEE and Shell's responses.

Shell requests that the Torpedo H APD submittal be given priority of review, followed by Sivulliq N, Torpedo J and Sivulliq G.

Shell asserts all materials submitted with this letter, except for the public information version of forms BSEE-0123 and -0123S, remain proprietary and are not subject to requests under the Freedom of Information Act (FOIA). Shell requests continuing confidentiality of the materials submitted herein, as well as any additional documentation supplied by Shell in support of this APD in response to requests for additional information by either BSEE, or Bureau of Ocean Energy Management. Shell will inform BSEE at the time of submittal if any additional documentation is not subject to FOIA assertion by Shell.

Please coordinate any requests for additional information through me at (907) 646-7112 or at Susan.Childs@Shell.com, or Pauline Ruddy at (907) 771-7243 or at Pauline.Ruddy@Shell.com.

Sincerely.

Susan Childs
AK Venture Support Integrator, Manager

Attachments:

BSEE RFAI Comment and Response spreadsheet

Signed BSEE-0123 Forms (Proprietary and Public)

Kulluk, Torpedo and Sivulliq Area Specific Documents (3 copies)

Sivulliq G APD documents (3 copies)

Sivulliq N APD documents (3 copies)

Torpedo H APD documents (3 copies)

Torpedo J APD documents (3 copies)

Torpedo H

April 17, 2012

CFR	BSEE Information Request or Comment	Response
250.410	On form BSEE-0123:	
	Public information copy only need one total (not one in each application)	For completeness, under Tab 250.410 a public information copy of form BSEE-0123 has been put in each copy so that each copy is identical.
	Public information copy need to fill out box #33	Box 33 for the public version of form BSEE-0123 has been completed and is placed under Tab 250.410.
	On for BSEE-0123s:	
	Public information copy only need one total (not one in each application)	For completeness, a public information copy of form BSEE-0123S has been put in each copy so that each copy is identical.
	Public information copy box 3,7, and 8 don't need to be filled in	Information contained in Boxes 3, 7, and 8 of the public information copy of form BSEE-0123S under Tab 250.410 has been removed.
	Request for the drilling of a bypass hole will require the submittal of a new APD	Comment noted.
	Will still need to provide an Application for Permit to Modify (APM) to perform the abandonment procedures.	Comment noted.
250.416	Tab 250.416 Diverter	
	Need to provide the diverter operating procedures for the Kulluk, not the Discoverer.	The *Kulluk* diverter controls are being manufactured and will be installed in the next two weeks. Part of the Diverter Operating Procedure is comprised of specific schematics, drawings, and photographic representations of the diverter controls and operating panel, which are not yet installed or finalized. The procedure from the *Noble Discoverer* was included in the previous submission as reference. A revised and updated procedure will be finalized upon completion of installation in May, and independently verified by West Engineering as a third party.
	list Diverter burst strength.	New annotated diverter sketches have been included under Tab 416.
	list rated working pressure of the 16" ball valve	
	The diverter detailed drawings are unclear due to the fine detail and size. We would prefer a larger scale drawing to more accurately determine diverter pathways. (See Discoverer drawings)	
	Tab 250.416 BOP	
	[redacted] (b) (4), (b) (9) [redacted]	[redacted]
	Need a 3rd party verification that the BOP stack is designed for specific equipment on rig and specific well design	Included under 250.416 is a Provisional Verification of BOP Compatibility certificate supplied by West Engineering for the well site.
	Need a 3rd party verification regarding the stack has not been damaged or compromised	
	Need a 3rd party verification that the stack will operate in the conditions that it will be used.	

Torpedo H

CFR	BSEE Information Request or Comment	Response
	Need the BOP control system diagrams.	The *Kulluk* BOP description will comprise a large part of specifications of the BOP control system. This system is being manufactured and will be installed in the next two weeks. A revised and updated procedure will be finalized upon completion of installation in May, and independently verified by West Engineering as a third party. When this systems information is available it will be submitted to BSEE
	BOP description provided is listed for Discoverer, not Kulluk.	
250.417	General Comment: BSEE will be assessing information provided to directly satisfy the requirements of 250.417(a), 250.417(b), 250.417(c)(2), 250.417(d), and 250.417(e) regarding the MODU capabilities and operational limitations associated with environmental conditions at the drill site and associated plans for responding to an emergency situation that may arise from hazardous environmental conditions. This information has been provided to varying degrees of detail in a number of documents supplemental to the APD. These include (1) pages of the MODU Operating Manual/Procedures; (2) IADC Standard Format Equipment list (operational capabilities and environmental limits); (3) Mooring Analysis; (4) Riser Analysis; (5) Class Report(s); (6) Critical Operations and Curtailment Procedures (COCP); and (7) Ice Management Plan. BSEE recognizes that quantification of the relationship between unit operations, unit capabilities/limitations, and environmental conditions (wind, waves, currents, sea ice) is extremely complex, with many variables, and subject to MODU operator expertise and professional judgment. However, in order for BSEE inspectors onboard the unit to maintain a relative knowledge of the environmental conditions that could result in an exceedance of the unit's operational capabilities, it is important that this type of information within the APD documentation be accurate, readily accessible, and as consistent as possible. See below for some specific areas in question.	Comment noted.
	250.417(a),(c),(d) Operating Limits: Page 1 of 13 provided from Chapter 3-Vessel Operating Criteria. No information provided identifying where this page comes from?	The *Kulluk* Marine Operating Manual is currently under revision to update and incorporate changes to the rig being made during this refurbishment project. The updated stability and motion characteristics will be incorporated into this. Previously submitted information was drawn from the original Marine Operating Manual, and is no longer valid. The environmental limitations shown in the IADC Standard Format Equipment List were taken from the Marine Operating Manual from a previous vessel operator. Verified operating limits will be revised and communicated upon DNV acceptance of the Manual in May, and the IADC Standard Format Equipment List will be updated as well.
	250.417(a),(c),(d) Operating Limits: Information provided on Page 1 of 13 from Chapter 3-Vessel Operating Criteria does not match some of the environmental limits information provided in the IADC Standard Format Equipment List submitted for 250.417(c). Specifically (Drilling): max wind velocity (50 vs. 30 knots), max pitch and roll (2° vs. 7°), max heave (12' drilling vs. 10' survival). Which document is considered accurate with regard to operating limits	

Torpedo H

CFR	BSEE Information Request or Comment	Response
	250.417(b) Mooring Analysis: Kulluk Motion Mooring Analysis by Delmar Systems, Inc. is not signed reviewed or approved.	The mooring analysis report, under Tab 250.417 now has signatures.
	250.417(b) Mooring Analysis: 30 CFR 250.417(b) requires information that site-specific soil and oceanographic conditions are capable of supporting the proposed drilling unit. The information provided in the Kulluk Motion Mooring Analysis by Delmar Systems, Inc., incorporates oceanographic conditions and discusses "ultimate holding capacity in site-specific lower and upper bound soils" but no site-specific soil conditions are provided evidencing soil properties (i.e. shear strength, stiffness).	Site specific geothechnical report has been added to section 250.417.
	250.417(b) Mooring Analysis: The mooring line properties and major components of the proposed mooring lines listed in the Kulluk Motion Mooring Analysis by Delmar Systems, Inc. does not match the mooring system components listed in the IADC Standard Format Equipment List submitted for 50.417(c) (e.g. Stevshark vs. Bruce anchors). Which document is accurate regarding the mooring system equipment and associated specifications?	The mooring equipment listed in the IADC equipment list is what the drilling vessel has as standard equipment. We are renting the equipment specified in the Delmar Mooring Analysis to fill the requirements of the Mooring Analysis. This is equipment to take the place of the mooring/anchoring equipment as shown in the IADC equipment lists
	250.417(b) Mooring Analysis: Figure 3-Detailed Elevation View of all line, on page 8 of the Kulluk Motion Mooring Analysis by Delmar Systems, Inc. is not legible in the paper or electronic APD submittals. Please provide a legible copy of this figure.	A legible drawing have been added to the end of the Mooring Analysis, under Tab 250.417.
	250.417(e) Critical Operations and Curtailment Plan (COCP): Note: Under 30 CFR 550.220(b), the term used is "procedures" not "plan". A Critical Operations and Curtailment "Plan" has been submitted with general "procedures" provided within this plan as well as within the submitted Ice Management Plan. BSEE understands that the Unit Operating Manual (or Rig Operations Procedures) maintained onboard the vessel is to contain guidance for the safe operation of the unit for both normal and envisaged emergency conditions and provide detailed well securing procedures. The COCP states that "thresholds will be established for weather and sea conditions that will control: equipment preparation to curtail operations; decision to cease drilling; hanging off drillstring or otherwise suspending the well; disconnecting riser; moving the drillship off the drill site". **BSEE inspectors onboard the unit will be interested to know these thresholds before drilling commences, as they relate to a relative knowledge of the environmental conditions that could result in an exceedance of the unit's operational capabilities.** Please be aware that documented "procedures" associated with drilling and vessel operations will be reviewed and become a component of the BSEE records as these procedures are established and provided to BSEE inspectors onboard the vessel.	Critical operations and curtailment procedures associated with drilling and vessel operations will be available to BSEE inspectors when they are onboard the drilling vessel.
250.418	Welding Plan	
	Noble Safety Policy Manual SPM-505 4.1.3 bullet 2 states "that in addition to the above, the fire watch shall make periodic checks with gas monitoring equipment." 250.113 (c) (2)(iv) states must maintain a continuous surveillance with a portable gas detector during welding and burning operation if welding occurs in an area not equipped with a gas detector. (4.4.5.3 Reiterates the periodic surveillance.)	Noble will revise the rig-specific Safe Welding Area document to add the requirement of continuous monitoring with a portable gas detector during hot work operations in an area not equipped with gas detection. Revision will be made prior to 15MAY2012.
	Need standards or requirements for welders as required by 250.110(a) written within the plan.	Welders are certified to the American Bureau of Shipping 6G Standard.

Torpedo H

CFR	BSEE Information Request or Comment	Response
250.420	Referred to Sivulliq N rather than Torpedo H on back side of statement	This has been corrected.
	last sentence on this page..."there will be a minimum of two independent tested barriers across each flow path while drilling in any expected hydrocarbon-bearing zone at least one of which is mechanical? Please provide specifics about what the barriers are at each point.	Adocument providing the specific for these barriers is included under section 250.420.
250.449	The BOP is function tested using the ROBOCOP unit controls to close one pipe ram and one blind shear ram and release the upper H-4 connector...per 250.449(j) all rov intervention functions must be tested on the stump test.	The ROV Operation document under Tab 250.449 has been modified to list what is being tested.
	Procedures state The BOP is again function tested using the ROBOCOP unit...should specifically state what is being tested.	
	No procedures have been submitted to test the autoshear/deadman system either on the stump or initial sea floor test. Since the documentation is for the Discoverer we are unsure as to whether the Kulluk has an autoshear /deadman system.	The *Kulluk* will be equipped with a Deadman / Autoshear function on the blowout preventer. The full BOP control system is still being manufactured and installed. Test procedures will be developed in conjunction with commissioning of the system and audited by West Engineering as an independent third party. Procedures from *Noble Discoverer* Deadman/Autoshear were provided as a typical reference. The BOP control system documentation will be submitted when finalized.
250.459	Please be aware of the regulation at 250.459(a) that states a ventilation system capable of replacing the air once every 5 minutes or 1.0 cubic feet of air-volume flow per minute, per square foot of area, whichever is greater. This will need to be verified prior to commencing drilling operations.	The mud pit room ventilation is sized to provide an air change every 2 minutes as calculated by LC Eldridge.

Burger V

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD.
- The APD BSEE-123 is not signed.
- BSEE-123s interval 4, the Mud Weight does not match the Pore Pressure plot.
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info."
- The cement volumes listed for interval 2 and 3 are less than the BSEE calculated necessary cement volumes.
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification?
- No USCG Certificate of Inspection or Letter of Compliance present.
- The welding plan letter dated June 9th still states that only periodic monitoring will occur if outside the safe welding area. Per 30 CFR 250.113(c)(2)(iv), this is unacceptable.
- (b) (4), (b) (9)
- Are there 18 or 20 bottles for the Deadman? This needs to be made clear within the APD.

RECEIVED
JUL 18 2012
Regional Director, Alaska OCS
Bureau of Safety and Environmental Enforcement
Anchorage, Alaska

Shell Exploration & Production

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July 18, 2012

Re: Shell Gulf of Mexico Inc. – Revised and new information in support of Applications for Permit to Drill for Burger A, F, J, R, S and V wells – Alaska Outer Continental Shelf, Chukchi Sea

Dear Mr. Fesmire:

Shell Gulf of Mexico Inc. (Shell) hereby submits revised and new information for the Applications for Permit to Drill (APD) for drill sites in the Chukchi Sea.This information is supplied either at the request of the Bureau of Safety and Environmental Enforcement (BSEE) or is a new document in support of the APD submittal.

Included in this submittal are the following documents:

- APD documents for the Burger drill sites and documents specific to the Noble Discoverer drilling vessel
- A spreadsheet outlining the BSEE requests for additional information, Shell's comments to the specific requests, document(s) that were revised to meet the request and the location of the document(s)
- An explanation of Shell's cementing strategy regarding minimizing cement volumes while maintaining wellbore quality and integrity
- A copy of an updated Chukchi Sea Regional Hydrogen Sulfide (H_2S) Contingency Plan (this plan remains non-confidential; the original H_2S Contingency Plan, was submitted November 2011 with the Revised Chukchi Sea Exploration Plan)
- Compact discs with the revised and new information

In addition to the above changes, for only the Burger A APD Shell will change the test type from a Leak Off Test to a Formation Integrity Test (FIT) at the Burger A 13-3/8 shoe (see the Burger A BSEE-0123S form). FIT test pressure will exceed the estimated shut-in pressure from a Level 1 "kick" as estimated by the BSEE Well Containment Screening Tool.

Shell asserts all materials submitted with this letter, except for the H_2S Contingency Plan, remain proprietary and are not subject to requests under the Freedom of Information Act. Shell requests continuing confidentiality of the materials submitted herein, as well as any additional documentation

supplied by Shell in support of this APD in response to requests for additional information by either BSEE, or Bureau of Ocean Energy Management.

Please coordinate any requests for additional information through me at (907) 646-7112 or at Susan.Childs@Shell.com, or Pauline Ruddy at (907) 771-7243 or at Pauline.Ruddy@Shell.com.

Sincerely,

Susan Childs
AK Venture Support Integrator, Manager

Attachments:

BSEE RFAI spreadsheet with Shell comments
Cementing Strategy Document
M/V *Noble Discoverer* and Burger Area Specific Documents (3 copies)
Burger A APD documents (3 copies)
Burger F APD documents (3 copies)
Burger J APD documents (3 copies)
Burger R APD documents (3 copies)
Burger S APD documents (3 copies)
Burger V APD documents (3 copies)
H_2S Contingency Plan

(b) (4), (b) (9)

(b) (4), (b) (9)

(b) (4), (b) (9)

(b) (4), (b) (9)

(b) (4), (b) (9)

Burger S

- Interval 4 and 5 PP and FG don't match plot Fixed
- Depth on BSEE-123s don't match up with drilling plan, pp plot, nor drilling prognosis. Fixed
- 15 & 16 do not have to be filled out on BSEE-123 Fixed
- 12 & 14 do have to be filled out on BSEE-123s but 16 does Fixed
- (b) (4), (b) (9) Fixed
- Need to be consistent in saying what they will test to between departures, procedures and forms Fixed
- Fill up line waiver is not necessary Not Fixed Fixed July 18
- Request not testing at casing point unless 7 day test due, but in drilling procedure it states they will be testing at the casing point…need to be consistent. Fixed
- On surface casing, used wrong burst pressure in calculation Fixed
- No BOP control diagrams Fixed
- Third party verifications are still provisional Not Fixed Part of APD Approval Letter
- No USCG letter of compliance Not Fixed Fixed July 18
- Normal minimal water depth is listed at 300 ft on specs yet water depth for well is 150 Not Fixed Fixed July 18
- Requesting waiver to not have flare system, yet plan talks about. Not Fixed Fixed July 18
- Areas in plan that state n/a because only applicapable to h2s present or unknown. Classified as h2s unknown. Not Fixed Fixed July 18
- Contact info for BSEE needs updating. Not Fixed Fixed July 18
- States attending vessels will be identified...when? Not Fixed Fixed July 18
- Noble Safety Policy Manual SPM-505 4.1.3 bullet 2 states that in addition to the above, the fire watch shall make periodic checks with gas monitoring equipment. 250.113 (c) (2)(iv) states must maintain a continuous surveillance with a portable gas detector during welding and burning operation if welding occurs in an area not equipped with a gas detector. Not Fixed Fixed July 18
- Don't see any standards or requirements for welders 250.110(a) written within the plan. Fixed
- Provide test procedures for a successful test for proper installation of casing. Fixed
- Are there 18 or 20 dedicated deadman bottles? Not Fixed Fixed July 18

Burger A

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD.
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info."
- The cement volumes listed for interval 2 and 3 are less than the BSEE calculated necessary cement volumes.
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification?
- No USCG Certificate of Inspection or Letter of Compliance present.
- The welding plan letter dated June 9th still states that only periodic monitoring will occur if outside the safe welding area. Per 30 CFR 250.113(c)(2)(iv), this is unacceptable.
- Are there 18 or 20 bottles for the Deadman? This needs to be made clear within the APD.

Burger F

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD.
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info."
- The cement volumes listed for interval 2 and 3 are less than the BSEE calculated necessary cement volumes.
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification?
- No USCG Certificate of Inspection or Letter of Compliance present.
- The welding plan letter dated June 9th still states that only periodic monitoring will occur if outside the safe welding area. Per 30 CFR 250.113(c)(2)(iv), this is unacceptable.
- Are there 18 or 20 bottles for the Deadman? This needs to be made clear within the APD.

Burger J

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD.
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info."
- The cement volumes listed for interval 2 and 3 are less than the BSEE calculated necessary cement volumes.
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification?
- No USCG Certificate of Inspection or Letter of Compliance present.
- The welding plan letter dated June 9th still states that only periodic monitoring will occur if outside the safe welding area. Per 30 CFR 250.113(c)(2)(iv), this is unacceptable.
- Are there 18 or 20 bottles for the Deadman? This needs to be made clear within the APD.

Burger R

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD.
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info."
- The cement volumes listed for interval 2 and 3 are less than the BSEE calculated necessary cement volumes.
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification?
- No USCG Certificate of Inspection or Letter of Compliance present.
- The welding plan letter dated June 9th still states that only periodic monitoring will occur if outside the safe welding area. Per 30 CFR 250.113(c)(2)(iv), this is unacceptable.
- Are there 18 or 20 bottles for the Deadman? This needs to be made clear within the APD.

Burger S

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD.
- On BSEE-123s, interval 3 FG does not match Pore Pressure plot.
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info."
- The cement volumes listed for interval 2 and 3 are less than the BSEE calculated necessary cement volumes.
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification?
- No USCG Certificate of Inspection or Letter of Compliance present.
- The welding plan letter dated June 9th still states that only periodic monitoring will occur if outside the safe welding area. Per 30 CFR 250.113(c)(2)(iv), this is unacceptable.
- Are there 18 or 20 bottles for the Deadman? This needs to be made clear within the APD.

Burger A

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder.

Burger F

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder.

Burger J

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder.

Burger R

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder.

Burger S

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder.

Burger V

- The APD BSEE-123 is not signed.
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder.

Burger A

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder.

Burger F

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Burger V

- The APD BSEE-123 is not signed.
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder.

Burger A

- On form BSEE-0123
  - Question the date Fixed
  - #33 has to be filled out on the public information copy Fixed
- On form BSEE-0123s
  - #3, 7, and 8 don't have to be filled out on the public copy Fixed
  - FG for interval 4 and 5 don't match pore pressure plot Fixed
- Fill up line departure is not necessary Not submitted as comment to Shell Fixed July 18
- Request for drilling of a bypass hole will require submittal of a new APD Acknowledged
- Will still need to provide an APM to perform abandonment procedures. Acknowledged
- No BOP control diagrams Acknowledges they still need Fixed June 11
- Maximum MASP used was 2341, yet highest Shell calculated is 3283
- No 3rd party verification of BOP Stack Included West Engineering review…but provisional Part of APD Approval Letter
- Normal minimal water depth is listed at 300 ft, yet water depth at location is 150
- Noble Safety Policy Manual SPM-505 4.1.3 bullet 2 states that in addition to the above, the fire watch shall make periodic checks with gas monitoring equipment. 250.113 (c) (2)(iv) states must maintain a continuous surveillance with a portable gas detector during welding and burning operation if welding occurs in an area not equipped with a gas detector. Shell will revise Fixed July 18
- Don't see any standards or requirements for welders 250.110(a) Welders are certified to ABS 6G Standard
- There will be a minimum of two independent tested barriers across each flow path while drilling in any expected hydrocarbon-bearing zone at least one of which is mechanical? Be more specific? Letter from Les Skinner describing barriers
- All ROV intervention functions must be tested on the stump test. Fixed
- Seafloor tests should state what is being tested. Fixed
- No procedures submitted to test the deadman on stump test or seafloor Fixed
- H2S plan submitted with EP does not discuss the procedures for sustaining ignition and monitoring status of the flare as required by 250.490(f)(15) Submitted new H2S Plan

Burger A

- Interval 2 has wrong diverter rating Fixed
- Interval 3 pore pressure does not match plot Fixed
- Interval 4 casing test is not 500 above masp Fixed
- 12 & 14 do have to be filled out on BSEE-123s Fixed
- Need to be consistent in saying what they will test to between departures, procedures and forms Fixed
- Fill up line waiver is not necessary Not Fixed Fixed July 18
- Request not testing at casing point unless 7 day test due, but in drilling procedure it states they will be testing at the casing point…need to be consistent. Fixed
- On surface casing, used wrong burst pressure in calculation Fixed
- No BOP control diagrams Fixed
- Third party verifications are still provisional Not Fixed Part of APD Approval Letter
- No USCG letter of compliance Not Fixed Fixed July 18
- Normal minimal water depth is listed at 300 ft on specs yet water depth for well is 150 Not Fixed Fixed July 18
- Requesting waiver to not have flare system, yet plan talks about. Not Fixed Fixed July 18
- Areas in plan that state n/a because only applicapable to h2s present or unknown. Classified as h2s unknown. Not Fixed Fixed July 18
- Contact info for BSEE needs updating. Not Fixed Fixed July 18
- States attending vessels will be identified...when? Not Fixed Fixed July 18
- Noble Safety Policy Manual SPM-505 4.1.3 bullet 2 states that in addition to the above, the fire watch shall make periodic checks with gas monitoring equipment. 250.113 (c) (2)(iv) states must maintain a continuous surveillance with a portable gas detector during welding and burning operation if welding occurs in an area not equipped with a gas detector. Not Fixed Fixed July 18
- Don't see any standards or requirements for welders 250.110(a) written within the plan. Fixed
- Provide test procedures for a successful test for proper installation of casing. Fixed
- Are there 18 or 20 dedicated deadman bottles? Not Fixed Fixed July 18

Burger A

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD. Hopefully will fix for future submittals
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info." Fixed
- The cement volumes listed for interval 2 and 3 are less than the BSEE calculated necessary cement volumes. Fixed with cementing strategy letter submitted
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Not Fixed Part of APD Approval Letter
- No USCG Certificate of Inspection or Letter of Compliance present. Fixed
- The welding plan letter dated June 9th still states that only periodic monitoring will occur if outside the safe welding area. Per 30 CFR 250.113(c)(2)(iv), this is unacceptable. Fixed
- Are there 18 or 20 bottles for the Deadman? This needs to be made clear within the APD. Fixed

Burger A

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Burger A

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder. Part of APD Approval Letter

Burger F

- 15 & 16 do not have to be filled out on BSEE-123 Fixed
- 12 & 14 do have to be filled out on BSEE-123s but 16 does Fixed
- Need to be consistent in saying what they will test to between departures, procedures and forms Fixed
- Fill up line waiver is not necessary Not Fixed Fixed July 18
- Request not testing at casing point unless 7 day test due, but in drilling procedure it states they will be testing at the casing point…need to be consistent. Fixed
- No BOP control diagrams Fixed
- Third party verifications are still provisional Not Fixed Part of APD Approval Letter
- No USCG letter of compliance Not Fixed Fixed July 18
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- Provide test procedures for a successful test for proper installation of casing. Fixed
- Are there 18 or 20 dedicated deadman bottles? Not Fixed Fixed July 18

Burger F

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD. Fix for future
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info." Fixed
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- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Not Fixed Part of APD Approval Letter
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- Are there 18 or 20 bottles for the Deadman? This needs to be made clear within the APD. Fixed

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- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder. Part of APD Approval Letter

Burger J

- 15 & 16 do not have to be filled out on BSEE-123 Fixed
- 12 & 14 do have to be filled out on BSEE-123s but 16 does Fixed
- Need to be consistent in saying what they will test to between departures, procedures and forms Fixed
- Fill up line waiver is not necessary Not Fixed Fixed July 18
- Request not testing at casing point unless 7 day test due, but in drilling procedure it states they will be testing at the casing point…need to be consistent. Fixed
- On surface casing, used wrong burst pressure in calculation Fixed
- No BOP control diagrams Fixed
- Third party verifications are still provisional Not Fixed Part of APD Approval Letter
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- The welding plan letter dated June 9th still states that only periodic monitoring will occur if outside the safe welding area. Per 30 CFR 250.113(c)(2)(iv), this is unacceptable. Fixed
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Burger J

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder. Part of APD approval letter

Burger R

- 15 & 16 do not have to be filled out on BSEE-123 Fixed
- 12 & 14 do have to be filled out on BSEE-123s but 16 does Fixed
- AT 6100 ft margin between fluid weight and pore pressure is not .5 ppg Fixed
- Need to be consistent in saying what they will test to between departures, procedures and forms Fixed
- Fill up line waiver is not necessary Not Fixed Fixed July 18
- Request not testing at casing point unless 7 day test due, but in drilling procedure it states they will be testing at the casing point…need to be consistent. Fixed
- On surface casing, used wrong burst pressure in calculation Fixed
- No BOP control diagrams Fixed
- Third party verifications are still provisional Not Fixed Part of APD Approval Letter
- No USCG letter of compliance Not Fixed Fixed July 18
- Normal minimal water depth is listed at 300 ft on specs yet water depth for well is 150 Not Fixed Fixed July 18
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- Don't see any standards or requirements for welders 250.110(a) written within the plan. Fixed
- Provide test procedures for a successful test for proper installation of casing. Fixed
- Are there 18 or 20 dedicated deadman bottles? Not Fixed Fixed July 18

Burger R

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD. Fix for future.
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info." Fixed
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Burger R

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder. Not Fixed Part of APD Approval Letter

Burger R

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Burger S

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD. Fix for future
- On BSEE-123s, interval 3 FG does not match Pore Pressure plot. Fixed
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info." Fixed
- The cement volumes listed for interval 2 and 3 are less than the BSEE calculated necessary cement volumes. Fixed with cementing strategy letter
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Not Fixed Part of APD Approval Letter
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Burger S

- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder. Part of APD Approval Letter

Burger v

- 15 & 16 do not have to be filled out on BSEE-123 Fixed
- 12 & 14 do have to be filled out on BSEE-123s but 16 does Fixed
- Need to be consistent in saying what they will test to between departures, procedures and forms Fixed
- Fill up line waiver is not necessary Not Fixed Fixed July 18
- Request not testing at casing point unless 7 day test due, but in drilling procedure it states they will be testing at the casing point…need to be consistent. Fixed
- On surface casing, used wrong burst pressure in calculation Fixed
- No BOP control diagrams Fixed
- Third party verifications are still provisional Not Fixed Part of APD Approval Letter
- No USCG letter of compliance Not Fixed Fixed July 18
- Normal minimal water depth is listed at 300 ft on specs yet water depth for well is 150 Not Fixed Fixed July 18
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- Don't see any standards or requirements for welders 250.110(a) written within the plan. Fixed
- Provide test procedures for a successful test for proper installation of casing. Fixed
- Are there 18 or 20 dedicated deadman bottles? Not Fixed Fixed July 18

Burger V

- Three copies of the APD need to be submitted and only one public copy. In the future, do not include the public copy as part of the APD binder; submit them along with the APD. Fix for future
- The APD BSEE-123 is not signed. Not Fixed
- BSEE-123s interval 4, the Mud Weight does not match the Pore Pressure plot. Fixed
- Requested departure from 250.443(e) is not necessary. Either remove from departure page or change to "info." Fixed
- The cement volumes listed for interval 2 and 3 are less than the BSEE calculated necessary cement volumes. Fixed with cementing strategy letter submitted
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Not Fixed Part of APD Approval Letter
- No USCG Certificate of Inspection or Letter of Compliance present. Fixed
- The welding plan letter dated June 9th still states that only periodic monitoring will occur if outside the safe welding area. Per 30 CFR 250.113(c)(2)(iv), this is unacceptable. Fixed
- The Torok at 3135 ft. is not discussed in letter provided by Les Skinner. Fixed
- Are there 18 or 20 bottles for the Deadman? This needs to be made clear within the APD. Fixed

Burger V

- The APD BSEE-123 is not signed. Not Fixed
- Independent third party verification of the BOP stack are provisional…when will we receive non provisional verification? Just leaving in here as a reminder. Not Fixed Part of APD Approval Letter

Burger V

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June 28, 2012

Travel Trip Report

Shell Drilling Rig Inspection Log; Seattle, WA

Sunday, June 10 2012

-Kyle Monkelien BSEE petroleum engineer and Michael Shank BSEE petroleum engineer arrived in Seattle from Anchorage. Randy Howell BSEE industrial specialist arrived in Seattle from personal travel in the evening.

Monday, June 11 2012

-Arrived at the USCG Sector Puget Sound inspections office and met LCDR Gretchen Bailey, CWO2 Iain Wells (our primary contact), LCDR Brian Khey of the 8th Coast Guard District, and Jay Jerome from the USCG Sector Anchorage. Discussed the plan for the inspection.

-Drove to the Vigor Shipyard and boarded the Noble Discoverer. Discussed with the Shell (Jim Miller and Don Brown) and Noble representatives what we planned to do and what we expected to gain from our visit.

-Performed a walk-around inspection of the ship. We looked at the derrick, top drive, crown block safety device, choke manifold parts, BOP, moon pool area, and riser tensioners. Then we went below deck to see the mud mixing room, mud pit room, shale shakers, and accumulator system. We came back above deck to see the safe welding area and to look at where the mud pit ventilator exhausts. There were no major issues with the equipment. The choke manifold was not in place, but the tags on the flanges checked out and it will be put together before the pre-drill inspection. Not all of the gas detectors were installed and none of them were tested while we were there. Afterwards we discussed what we saw with the Shell and Noble representatives. The Coast Guard checked the progress on a few of their outstanding items from their inspection the previous week. They looked at bulbs on the generator panels and tested the rudder control.

Tuesday, June 12 2012

-Arrived at the USCG Sector Puget Sound inspections office. Discussed the plan for the inspection.

-Drove to the Vigor Shipyard and boarded the Kulluk. Discussed with the Shell (Don Brown) and Noble representatives what we planned to do and what we expected to gain from our visit.

-We inspected the drilling floor equipment (BOP panels, driller's controls, derrick, crown block safety device, choke manifold, top drive). We inspected the moon pool area and the primary and back-up BOPs. Below-decks we inspected the mud mixing room, safe welding area, mud pit room, shale shakers, and the accumulator system.

-We sat in on a meeting between the USCG inspectors (Brian Khey and Jay Jerome) and the Det Norske Veritas representatives that were performing the classification of the Kulluk. Hao Bing YU was the Senior Surveyor for DNV. They discussed the classification report and the USCG inspection and drills that would be performed when it was received.

-Mark Fesmire Regional Director of BSEE Alaska Region arrived in the evening.

Wednesday, June 13 2012

-Kyle flew to Portland in the morning to perform the inspection on the capping stack. Travelled to Vigor Ship Yard Portland and performed visual inspection of the Capping Stack and controls as well as the mudline ROV accessible remote control panel for the BOP. All equipment appeared to be complete and ready for operations. Witnessing of actual deployment and testing of the system will be completed at a later date.

-Randy and Michael went to the EPA office to meet with Rick Cool (our primary contact) the Alaska State Oversight/SRF for the NPDES Compliance Unit and Hanh Shaw the manager of the Oil , Gas, and Energy Sector. We discussed the environmental inspections that their office would like our inspectors to perform while on duty on the rig. They provided us with some documents to detail what is involved in the environmental inspections.

Thursday, June 14 2012

-Mark, Randy, and Michael went to the USCG Sector Puget Sound inspection office to follow along while the CG inspectors reviewed the progress on some of their outstanding inspection items on the Noble Discoverer. However due to travel delays we were not able to coordinate our visit.

Kyle provided transportation for the Director to Vigor Shipyard Portland to observe the capping Stack and associated equipment. Briefing and tour provided by Shell Vice President Pete Slaiby.

Friday, June 15 2012

-Mark flew back to Anchorage in the morning.

- Randy and Michael followed along on the USCG inspection of the Kulluk. We met the CG at their office and discussed the plan for the inspection.

-Items inspected include, but are not limited to: immersion suits, life boats, life rafts, pfds, fire hoses, pumps to the fire hoses, fire doors, general health and safety items in the accommodations (medical facilities, galley, bathrooms, bunks), and emergency lighting. A fire and rig abandonment drill was also performed. We left before the end of the inspection in order to make our flight.

-Randy and Michael flew back to Anchorage in the evening.