Gulf of Mexico SPU

bp

GoM Drilling and Completions

D&C Recommended Practice for Management of Change

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AMENDMENT RECORD

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1 Introduction

BP's Management of Change (MOC) requires the use of a formal, systematic program to document, evaluate, approve, and communicate temporary and permanent changes to plant or rig equipment, technology, processes, products, services, compliance requirements, procedures, people, and organization. This recommended practice establishes the minimum guidelines for the systematic approach to be used for change control and management within the Gulf of Mexico (GoM) Drilling and Completion (D&C) Organization.

The application and process will be consistent with the requirements of the Beyond the Best/Capital Value Process (BtB/CVP). The recently issued BP standards in BP's Operations Management System (OMS), Integrity Management and Group Recommended Practice also stipulate the use of a management of change system.

2 Purpose

The intended purpose of this MOC process is to:

- Provide a systematic methodology to accomplish change control across all areas within the GoM D&C Organization
- Communicate scope and justification for any proposed change, and record the results of the review and approval process
- Provide a common process to fully document the assessed impacts of a proposed change before the change is made, capturing the quantification and mitigation plans associated with reducing risk to an acceptable level and ensuring all prerequisite actions identified to implement a change are executed before the change is made
- Allow for a closed loop "QA" system to ensure that all changes have been adequately reviewed by appropriate parties, documented, and closed out to the satisfaction of all interested stakeholders
- Provide a database of changes for subsequent review of practices and policies

3 Scope

This D&C Management of Change (DCMOC) recommended practice provides guidance for initiation, verification, coordination, review, and approval for all applicable changes and shall be applied consistently for all engineering/planning, process, and operations in the GoM D&C organization.

Emergency MOC's are defined as any action necessary to remedy an emergency that poses imminent impact to safety, health, or the environment and demanding an immediate response. Emergency changes are permitted only on the verbal authority of the appropriate BP management team member(s) following an appropriate hazards assessment, and every effort should also be made to complete an appropriate cross discipline review. An authorized MoC must be completed as early as possible after the emergency situation has subsided.

This recommended practice supersedes any change control and management procedures in effect up to approval of this document. All teams will transition from existing MOC systems and should be in compliance by July 1, 2009 or earlier.

All projects will utilize the GoM's standard, web-based application/tool, BizFlow®. After July 1, 2009, any open/pending "paper" MOCs requiring review/approval will be added to the BizFlow® DCMOC workflow and then progressed, tracked and closed-out within this system.

This recommended practice will remain in effect until superseded in writing.

3.1 Applicable Teams

All D&C teams are included within the scope of this recommended practice: Leadership, Engineering, Operations, Performance (including Project Services and Rig Construction). Common interface teams include Subsurface, Facilities, Subsea, Marine, Procurement and Supply Chain Management, HSSE/Regulatory, Major Projects, and Production Operations.

3.2 Types of Change

Typical change types covered by this recommended practice are listed below.

1. Administrative – Any changes to approved Recommended Practices, GoM Site Technical Practices, or significant management processes. Also included are major changes in annual plans, changes in schedules that introduce significant risks and dispensations for the use of a non-approved contractor.
2. DWOP Dispensations – Any dispensations from BP's Drilling and Wells Operation Practice (DWOP). These are captured in a specific category within the BizFlow® DCMOC workflow so they can be analyzed periodically.
3. Organizational – Includes any change in the organization structure. This includes changes in:
   - BP personnel (leadership and technical authorities)
   - Well Site Leaders that are new to the GoM
   - Well Site Leaders that are changing rig types (dynamic positioned MODU, moored-semi rig, platform rig, jack-up rig) with no previous or recent (within five years) experience with that particular rig type
4. Technical – Any procedural or significant scope change to approved plans and well programs. The following are some examples:
   - Changes to approved Well Basis of Design/Statement of Requirements (BOD/SOR)
   - Deviation to Engineering Technical Practices or Site Technical Practices (ETP/STP) or other BP Practices, not covered in a DWOP dispensation
   - Changes to operational procedures that have completed a HAZID/HAZOP review
   - Changes to well program procedures that introduce new risks to achieving the well objectives and time/cost targets:

- Completion brine weight
- Perforation interval
- Test pressures and test durations
- Downhole equipment changes
- Pressure containing equipment changes
- Well suspension/temporary abandonment
- Changes to well equipment that could potentially expose it to conditions outside approved operating range
- Changes to cement program that are not adjustments in response to real time data

- Major service company changes on a rig (fluids, cementing, wireline logging, well placement, completion tools, mud logging, waste management, perforating, tubular running)
- Changes to approved annular pressure mitigation plans
- Changes to approved SIMOPS plan
- Rig schedule well additions or changes within 90 days of execution on the GoM SPU early planning case schedule or MODU rig changes when a well is in DEFINE or READY TO EXECUTE planning stage

5. BP-owned rig equipment – Any change in rig-owned equipment's operating procedure or rig-owned equipment that is not replacement in-kind. The change would be a deviation from frozen design data, or from documentation that has undergone a rigorous review and/or risk activity such as HAZID, HAZOP or Blast Analysis, such as:

   - Piping and Instrumentation Diagrams (P&IDs)
   - SORs/ETPs/STPs
   - Layouts
   - Control System Software
   - Electrical Diagrams and General Arrangement Drawings
   - Hazardous Area Classifications

   Refer to Section 7.2 for a checklist for initiating an MOC for BP-owned equipment. Refer to Section 7.3 for an HSE and Regulatory review checklist for D&C rigs. And, refer to Section 7.4 for a pre-startup checklist (drilling rigs).

   These BP rig equipment changes should be initiated from the:

   - BizFlow® Operations workflow if the rig equipment is on a BP platform that is in operation (e.g., PDQ or Holstein rig), or if the BP equipment is on a Contractor's MODU (e.g., BP Well Test Equipment on the Transocean Enterprise rig).
   - BizFlow® Projects workflow if the rig equipment is on a BP platform in the construction phase. The checklists in Sections 7-2 through 7-4 should be used.

   If a Rig Contractor makes changes to their equipment, BP should ensure a Contractor MOC process is used and includes BP as appropriate.

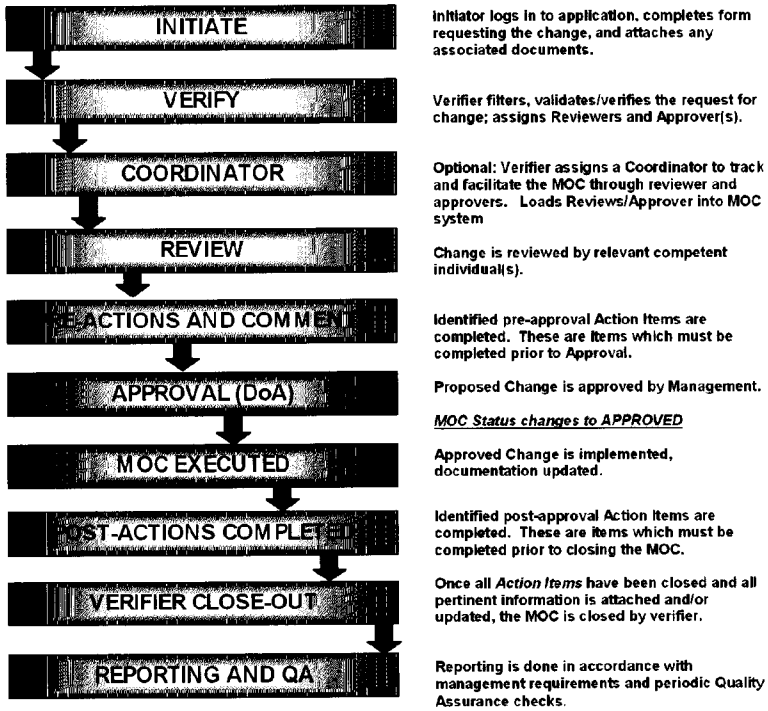
Due to the uncertainty of downhole conditions in D&C operations, numerous changes and adjustments are made during operations. Minor changes that do not fall under the above criteria do not need to have a formal MOC process using BizFlow®. Examples of these minor changes would be activities such as:

- Making adjustments to drilling parameters due unexpected hole conditions (e.g., lowering flow rate and penetration rate to reduce mud losses while drilling)
- Making an adjustment to a fracture stimulation design in response to real time data

These changes should be discussed with MOC mindset on risks and mitigations.

4 Process Summary

Change requests can originate from any GoM D&C team member, typically an engineer. Any proposed change should be "socialized" within the D&C team and any other applicable stakeholder team prior to the initialization of the MOC and entry of the MOC into the BizFlow® DCMOC workflow. A complete vetting of the change proposal will minimize the likelihood of MOC rejection or extended review cycles, both of which will delay actioning the MOC. The following flow chart summarizes the Drilling and Completions MOC process.



Additional process details and guidance are described in the following section.

5 Process Detail, BizFlow® DCMOC Workflow, and Roles

The BizFlow® DCMOC workflow is initiated to facilitate the MOC process and to ensure changes are properly reviewed, approved, communicated, and documented.

The following sections describe the MOC process in more detail and how the process is facilitated using the BizFlow® DCMOC workflow.

5.1 Access to BizFlow® DCMOC Workflow

BP D&C employees and direct consultant engineers, well site leaders, and support personnel will have access to the BizFlow® DCMOC Workflow (or the BizFlow® Operations Workflow for rig MOCs on production platforms) and will conduct all BP-required MOCs. Rig and service contractors will utilize their own Management of Change systems and will be subject to BP audit.

5.2 MOC Initiation

MOC Initiation begins with the change initiator recognizing a MOC is required. Guidance is provided in Section 3.2 for changes that require a formal MOC, and in Section 7.2 on the MOC Initiation Decision Tree for BP-owned equipment.

The MOC initiator enters the BizFlow® DCMOC workflow at the Initiation page and selects the appropriate Asset/Rig and MOC type (Technical, DWOP Dispensation, Administrative and Organization). The initiator will complete the required fields (yellow highlight) on the Initiate page, select the appropriate verifier, and upload any supporting documentation and/or reference links to the Attachments section.

The MOC initiator is responsible for providing all necessary supporting information to make the verification and review process as efficient as possible. Any gaps in the information may cause the initial request for change to be rejected or returned to the Initiator due to missing critical data. Rejection of a MOC will be minimized when the appropriate review and discussion of the change has occurred with verifiers and reviewers prior to the initiation of the MOC in the BizFlow® DCMOC workflow.

The following information must be provided in the original request for change (MOC):

- Selection of verifier and coordinator
- MOC Title
  - Concise, descriptive as possible to well, rig, issue
- Justification
  - Reason for change (in accordance with Practice or approved plan and criteria)
- Justification Statement
  - Should reflect the rationale for the proposed change and implementation timing. Describe how the change meets one or more of justification hurdles, for example, improving safety, operations efficiency, cost, risk mitigation
- Scope
  - Should adequately describe the task and activity(s), including resources, interfaces, impacts and any other pertinent information
  - Should be as concise and detailed as possible; technical MOCs require that evidence of sufficient engineering to support the required hazard assessment and the hazard assessment be included

- Risk/Mitigation
  - Details associated risk and what actions and hazard reviews will be done to manage the change
- Estimated Latest Start/Desired Completion Date
  - Will establish the urgency for closing the MOC (milestones, if known, should be included on the Impact Checklist)

Detailed information may be attached as a separate file or pasted into the form as appropriate. After completing the Initiate page, and uploading pertinent data, attachments, etc. the initiator will save the MOC to the system using the "Save/Submit" Function (Rubber Stamp icon). This creates a system-generated e-mail notification to the verifier advising the new MOC is awaiting review.

Additional information on HSSE, risk, costs, etc. may be required to facilitate the verification and review process if the change is to BP-owned equipment on BP platforms where these changes originate out of the BizFlow® Operations MOC workflow. Reference these MOC recommended practices.

Typical initiators would be engineers or support staff. Their roles would include:

- Understand the definition of change and the DCMOC recommended practice
- Understand and recognize the potential impact a proposed change may have on D&C project and interface teams with D&C
- Highlight any known external interfaces in the original request for change to enable the verifier to route the MOC to the appropriate individuals and also reduce the time for processing the MOC
- Initiate the MOC process in the BizFlow® DCMOC workflow
- Provide sufficient detail in the MOC documents to support MOC validity and review process
- Be an active participant in the ongoing MOC process until implementation and closeout has occurred

5.3 MOC Verification

MOC verifiers are responsible for screening out change requests that do not meet established SPU or D&C criteria. Change Request is verified, rejected or returned to originator for additional information. At this step reviewer(s) and approver(s) are assigned by the verifier via the comments box for the coordinator to load the reviewer and approvers in the BizFlow system. Action items may also be added by the verifier.

Verifier will move the MOC onto the Review phase, without additional discussion, based on the following minimum criteria:

- The scope and justification have sufficient clarity and detail to support further review
- The change meets the type of D&C MOC as described in Section 3.2

Serious consideration should be given to cancelling an MOC that does not meet these criteria at the Verify step. The verifier should consult with appropriate D&C management.

An MOC can be cancelled at any point in the MOC process by D&C management. The MOC would then be closed-out by the verifier with details for this action included as part of the close-out package.

Typical verifiers would be the Initiator's team leader. The verifier would have the central role in communicating and executing the MOC process and be responsible for implementing, monitoring and reporting on the performance of the process.

For change requests that impact multiple delivery areas (interfaces), the verifier should designate additional reviewer(s)/approver(s) for those impacted areas to ensure the proposed change is properly communicated to the affected stakeholders. This will typically be Subsurface, Subsea, or Operations personnel.

The MOC verifiers may also identify pre- and post-approval actions, assurance activities, and the necessary documentation updates required prior to closing out the MOC. Within the application, the verifier will select the reviewer(s) and approver(s) (up to three sequential levels of Approval are available) in the BizFlow® DCMOC workflow.

Following are specific responsibilities:

- Fully understand the definition of change and the DCMOC recommended practice
- Understand and recognize the potential impact a proposed change may have on a D&C project
- Provide coaching, guidance and application training/support to other D&C team members relevant to the MOC process
- Determine if proposed change meets the D&C criteria by acting as the "first filter" by assessing if the justification for the change fulfills any of the following requirements:
    1. Meets IM/ETP/DWOP standards or justifies dispensation
    2. Meets HSSE, Regulatory, or Legal compliance standards or justifies dispensation
    3. Enhances the procedures, equipment, or systems to achieve well objectives
    4. Improves D&C economics
    5. Improves delivery schedule
    6. Enhances communication of a change
- Assesses whether MOC provides adequate detail for review (adequate scope, justification, associated documentation to support the request for change)
- Assigns appropriate reviewers for the type of change, including EAs and TAs based on the DCMOC recommended practice
    - If engineering or rig operations area initiating MOC may impact more than one area, or other external stakeholder interfaces, additional reviewers may be added by respective MOC verifier for these engineering or rig operations areas
- Assigns appropriate approvers in line with D&C's Management organization and roles and responsibilities
- Verifies that all Action Items are certified as completed prior to close-out

5.4 MOC Coordination

Coordinators can be assigned by the Initiator to track and facilitate a MOC through the reviewers and approvers. The coordinator would also track and facilitate the completion of any associated action items. The coordinator would typically be a Common Process Coordinator who has been thoroughly trained on the BP GoM D&C MOC recommended practice and the BizFlow® DCMOC workflow.

The Coordinator with input from the Verifier loads the Reviewers and Approvers into BizFlow®.

The Coordinator has access to the MOC Coordinate step function in BizFlow® that allows the Coordinator to modify attachments or comments throughout the MOC lifecycle as per the request of reviewers and approvers.

5.5 MOC Review

All the assigned reviewers, working as a team, are responsible for ensuring that both a thorough technical evaluation and impact assessment of the MOC are completed. The technical reviews shall include an assessment of risk, which was conducted by a competent authority prior to initiating a Technical MOC.

The MOC is reviewed by competent project or SPU personnel in accordance with DOA and Technical or HSSE roles as established by the D&C and the GoM SPU Register of Engineering Authorities and Technical Authorities.

Ideally, this review step will document the work already done by the reviewer to evaluate a change and to attach any supporting documentation such as hazard reviews. If the reviewer cannot support the MOC as presented, s/he should discuss the remaining issues with the initiator or other reviewers, as appropriate, before formally rejecting the MOC. Requiring changes to the MOC during the Review stage will necessitate the MOC to be canceled or re-reviewed. The re-review process will add significantly to the time and effort required to approve the MOC. Therefore, all changes should be carefully considered prior to officially rejecting the MOC.

If any reviewer has rejected the change, the MOC is routed back to the verifier after all the assigned reviews are complete. The verifier will coordinate the effort to address the review comments. When the MOC is updated, it is again circulated to all reviewers for their concurrence. An e-mail notification will be sent automatically to approver(s) after the last reviewer has agreed with the change and all pre-approval action items have been completed.

Reviewers can add additional reviewers, assign pre/post actions, including documentation updates, to themselves or others, add comments, and attach documentation supporting their conclusions.

Typical reviewers would be team leaders (Engineering, Operations, Performance, and multi-discipline) as appropriate and any applicable technical authorities.

Reviewers are responsible for reviewing the change and developing a clear understanding of the content and consequences of the proposed change within their respective areas of expertise. They also are expected to consult other subject matter

experts if not fully conversant with all aspects of a MOC within their area of expertise. Following are specific responsibilities:

- Understand the definition of change and the DCMOC recommended practice
- Fully understand and recognize the potential impact a proposed change may have on a D&C project
- Work closely with other assigned reviewers to ensure a thorough cross-discipline review has been conducted
- Facilitate timely review of MOCs
- Facilitate timely completion of assigned pre- and post-approval actions
- Append necessary relevant documents that support the decision to execute the MOC
- Follow up with other reviewers to ensure completeness in the documentation package
- Identify opportunities to streamline the MOC process and make recommendations on process improvements

5.6 MOC Pre-Approval Actions

Once all reviewers have acknowledged their agreement with the MOC, a notification is routed to each person with a pre-approval action (technical, HSSE, regulatory, or other assurance) requesting immediate attention. After all pre-approval actions are completed and acknowledged in the BizFlow® DCMOC workflow, an automatic e-mail is routed to each first-level approver stating the MOC has been fully reviewed and all pre-approval action items have been completed. These pre-approval actions are optional.

5.7 MOC Approval

Approvers approve or reject the change and can add post-approval action items. If the approver requests additional clarification, the MOC will return to the verifier who is responsible for coordinating the response to the approver's request. Approvers also can select "add additional approvers" in accordance with the D&C Organization structure and Roles and Responsibilities. A rejected MOC will be routed to the verifier who will either coordinate the preparation of additional information prior to resubmitting the MOC for review, or cancel the MOC with no further action required. The initiator will be notified as to why the MOC was not approved.

As applicable, having multiple approvers including approvers in the Asset, Operations, or Project is a good practice to ensure the D&C MOC is understood by all applicable teams.

Approvers are accountable for the overall impact of the change on a D&C project. The approver(s) will approve the MOC after reviewing the MOC form and all attachments and pre-approval action item close-outs.

Typical approvers would be managers (Engineering, Operations, Performance, multi-discipline) as appropriate.

Approvers have a significant role in the oversight and implementation of the MOC process and are accountable for providing leadership and guidance to ensure timely disposition of the MOC. Following are specific responsibilities:

- Clarify and coach team members with respect to understanding the definition of change within the context of the Change Management Philosophy
- Fully understand and recognize the potential impact a proposed change may have on a D&C project
- Verify the competency of the personnel involved in the MOC review, and ensure technical specialist resources are available to support the MOC process
- Periodically monitor the performance of the MOC process, and recommend any corrective actions to enhance the system

5.8 SPU Engineering Authorities and Technical Authorities

SPU Engineering Authorities and SPU Technical Authorities act in a consulting/advisory capacity within the MOC process and are accountable for providing guidance and technical engineering or operations manager support to the D&C teams as necessary.

If the D&C team is requesting an exception to an approved ETP/STP, a dispensation to DWOP, or a change in a field well basis of design, the SPU EA will act as an approver for the MOC. In this instance, the appropriate D&C manager may act as the Level 1 approver and the SPU EA as the Level 2 approver. A permanent modification to a STP should be addressed using the SPU's ETP/STP MOC process.

- Appropriate SPU EA will endorse and support (i.e., "own") the development and implementation of the SPU DCMOC recommended practice
- Appropriate SPU TA will provide consulting and advisory services when requested
- Appropriate SPU TA, when assigned, will participate as a reviewer in their specific discipline
- Appropriate SPU EA and TA will advise on the use of appropriate standards, specifications, codes, etc. as they relate to any proposed change, and provide feedback on the use of proposed dispensations to same

5.9 MOC Post-Approval Action Items and MOC Close-Out

Once the MOC is approved, e-mail notifications are routed to all persons with outstanding post-approval actions advising them that the action is awaiting completion. Post-approval action items may identify actions that are to be completed either before or after the change is completed.

Post-approval actions will ensure that the change was implemented as required in the MOC documentation and that all applicable documents and associated controlled documentation is updated and all impacted project members are notified of the approved timing of the change.

Upon completion and acknowledgement of post-approval actions, the MOC verifier receives a notification stating the MOC is ready for close-out. The verifier will check that the change described in the MOC has been completed. As appropriate, the verifier can attach documentation to the MOC, such as e-mails, or simply add a comment to support the closure. MOC's are finally closed when the Verifier changes the MOC status to "Closed" in the BizFlow® DCMOC application.

5.10 Documentation

All relevant documentation will be included in the system's central repository (BizFlow® application database), as an attached e-file (native and/or PDF is acceptable).

5.11 BizFlow® Application Support

The following user support is in place to assist with project implementation of the SPU DCMOC application:

- SPU-level MOC Process TA
  - Guidance on BizFlow® and MOCs
- BizFlow® Administrators (listed in BizFlow® system)
  - BizFlow® user administration and technical support
- D&C Common Process Coordinators
  - Team support and training on use of BizFlow® and MOC process
  - Coordination role in tracking the MOC through to approval
- D&C Performance Team Leader
  - Custodian of GoM SPU D&C MOC Recommended practice

6 Additional Guidance

Any document attached to a BizFlow® MOC is viewable to any user. Confidential documents should be referenced and a link provided to a secure site with restricted access. This may not be considered an all-inclusive list. The D&C team is responsible to fully implement an MOC in the DCMOC tool as required by BP OMS, IM, and Recommended Practices.

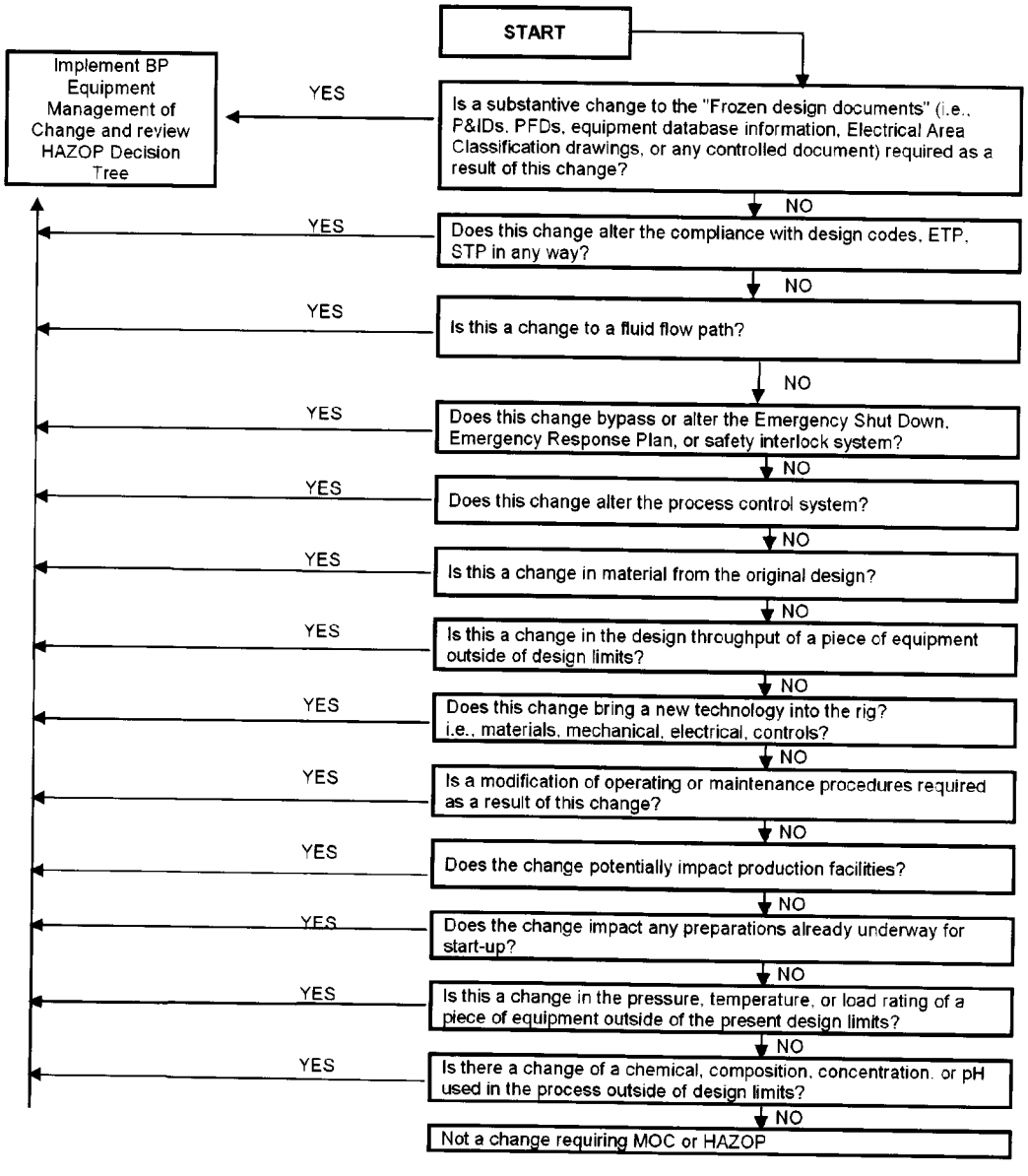
7 Appendices

7.1 Acronyms and Definitions

Acronym	Definition
BizFlow®	Computer based system to record and communicate MOCs
BizFlow DCMOC workflow	Application within BizFlow® designed to facilitate the documentation, review and approval of D&C MOCs prior to their implementation
BOD	Basis of Design
BtB	Beyond the Best, BP's drilling and completion project management system
DCMOC	D&C Management of Change application/tool; a workflow application designed to facilitate the documentation, review and approval of project changes prior to their implementation
D&C	Drilling and Completion
DWOP	BP Drilling and Well Operations Practice
EA	Engineering Authority
ETP	BP Engineering Technical Practice
HSSE	Health Safety Security Environmental
IM	BP Integrity Management Standards
HAZID	Hazard Identification Study for hazard analysis
HAZOP	Hazard and Operability Study for hazard analysis
Management of Change (MOC)	Common process by which all temporary and permanent changes to a project are evaluated and managed to ensure that health, safety, environmental, technical, cost and schedule and other commercial risks arising from these changes remain at an acceptable level in accordance with corporate governance standards and SPU business objectives
MOC	Can be read interchangeably within the context of the document as "Management of Change" process; a document initiating or describing a change – "Request for Change," a fully approved "Change Documentation Package"
MODU	Mobile Offshore Drilling Unit, typically a drill ship or semi-submersible offshore drilling rig
PFD	Process Flow Diagram
P&ID	Process/Piping and Instrumentation Diagram
SOR	Statement of Requirements
Stakeholder	Any person having a vested interest in the D&C change including: subsurface, subsea, project, operations, contractors, suppliers and partners
STP	BP Site Technical Practice
TA	Technical Authority

7.2 Initiation Decision Tree – BP-Owned Rig Equipment

A "checklist" for initiating an MOC for BP-owned rig equipment is below.



7.3 HSE and Regulatory Review Checklist for D&C Rigs

GoMP MOC - HSE and Regulatory Review Checklists
FOR D&C RIGS

HSE REVIEW CHECKLIST

The following example checklist may help to identify and address safety and health hazards associated with change. Based upon the response to each question, precautions can be identified and exercised as appropriate.

Questions	YES	NO
1. Will this change affect any other operations or outstanding MOCs?	☐	☐
2. Will safety systems be bypassed?	☐	☐
3. Can utility systems support the change?	☐	☐
4. Does this impact the electrical area classification?	☐	☐
5. Is adequate fire and gas protection available?	☐	☐
6. Is ventilation adequate to prevent an explosive mixture?	☐	☐
7. Is there potential for static electric charge?	☐	☐
8. Are piping and tubing supported and protected?	☐	☐
9. Is there adequate means of escape or safe haven?	☐	☐
10. Are there potential ergonomic considerations (e.g., noise, body position, reach and lighting)?	☐	☐
11. Is there adequate personal protective equipment?	☐	☐
12. Are temporary connections or equipment involved?	☐	☐
13. Will this affect ZMS or any other collision management systems?	☐	☐
14. Is pressure/vacuum relief adequate?	☐	☐
15. Is there increased potential for spill or release?	☐	☐
16. Will there be an impact to a JSEA or an Operating Procedure?	☐	☐
17. Do materials differ from those in standard practice?	☐	☐
18. Does this impact start/stop or emergency procedures?	☐	☐
19. Will affected system need to be re-commissioned after modification is complete?	☐	☐
20. Will Maintenance Procedure revisions be required?	☐	☐
21. Have design limitations been considered and will change affect limits?	☐	☐
22. Any other considerations? Is yes, please list them here.	☐	☐

REGULATORY REVIEW CHECKLIST

If any of the items below can be checked "Yes" as a result of the proposed change, then regulatory agency involvement (notification/approval) may be required.

Questions	YES	NO
1. Does the change impact safety devices (drilling or production)?	☐	☐
2. Will the Electrical Area Classification change?	☐	☐
3. Will the facility layout change?	☐	☐
4. Will this change include modifications to any drilling related structure?	☐	☐
5. Will the change deviate from approved Application for Permit to Drill parameters?	☐	☐
6. Will the fire-fighting system change?	☐	☐
7. Will there be a change that effects to permitted emissions (cuttings, SBM)?	☐	☐
8. Will there be a change to air emission volumes or composition?	☐	☐
9. Will an air emission source be added or modified?	☐	☐
10. Will there be an impact on the ability to maintain regulatory compliance?	☐	☐
11. Will there be a change to ventilation in a classified area?	☐	☐
13. Does this modification affect any systems governed by USCG or MMS?	☐	☐
14. Does this change raise noise levels above industry standards for this area?	☐	☐
15. Is this modification being made to well control or associated systems.	☐	☐
16. Does change affect any hoisting or lifting equipment (cranes, etc.)	☐	☐

Document Owner: Phil Clasen, GoMP Integrity Manager Revised for Drilling Rigs: Dan Welch Revision Date: 2/22/09

7.4 Pre-Startup Checklist (Drilling Rigs)

Pre Start Up Checklist (Drilling Rigs)

APPROVALS

Checklist should be assigned to Single Point of Accountability (SPA) who assigns discipline sections and coordinates the completion of the process. The SPA will assign only those sections that are needed for a particular MoC (select N/A for entire section).

MOC Number:	Section assigned to:	Title/Position:	Complete Date:

ENGINEERING

Entire Section Not Applicable (Yes/No)	Engineering Section assigned to (if applicable):	Complete Date:

Item	Question	Disposition		Completed By
1	All applicable permits and approvals have been received from regulatory agencies (MMS/USCG)	○ Complete	○ N/A	
2	Hazard analysis recommendations have been addressed and implemented	○ Complete	○ N/A	
3	PSV/Ventilation System design basis updated.	○ Complete	○ N/A	
4	Process & Instrumentation Diagrams (P&ID's) redlined	○ Complete	○ N/A	
5	Process Flow Diagrams (PFD's) redlined	○ Complete	○ N/A	
6	Process and Safety Flow Diagrams (PSFDS) redlined.	○ Complete	○ N/A	
7	Fire and Safety Equipment Locations Plans redlined.	○ Complete	○ N/A	
8	Electrical Area Classification Plan drawings redlined.	○ Complete	○ N/A	
9	Electrical One-line Drawings redlined.	○ Complete	○ N/A	
10	All equipment registers have been updated? (EX- Register, Software Register, Safety Equipment Register, Lifting Equipment Register)	○ Complete	○ N/A	
11	Structural and Isometric drawings redlined	○ Complete	○ N/A	
12	Applicable Integrity Management ETP(s) consulted and followed. (Example: Was GP 08-10 Practice on Corrosion Management, consulted when adding in a new line to the existing mud system?)	○ Complete	○ N/A	
13	The Safety Instrumented Functions (SIF) on new designs/modifications has been classified using the Safety Integrity Level (SIL) or modified Layer of Protection Analysis (LOPA) process.	○ Complete	○ N/A	
14	Formal safety assessments (HAZOPs, blast, fire, and dropped objects studies) are updated and all identified action items closed (hazards register updated)	○ Complete	○ N/A	
15	Structural steel and supports required meet design structural engineering standards.	○ Complete	○ N/A	
16	All equipment meets design specifications	○ Complete	○ N/A	
17	ZMS or applicable zone management system has been restored, initialized, the system tested and documentation/programming updated?	○ Complete	○ N/A	

HSE

Entire Section Not Applicable (Yes/No)	HSE Section assigned to (if applicable):	Complete Date:

Item	Question	Disposition		Completed By
18	Emergency response and evacuation procedures/plans updated, communicated, and in place	○ Complete	○ N/A	
19	Safety information is complete and in place	○ Complete	○ N/A	
20	Training of all affected personnel has been completed (operations, maintenance, emergency response)	○ Complete	○ N/A	
21	MSDS files updated.	○ Complete	○ N/A	
22	Safety equipment, including fire fighting devices, escape devices, safety showers and eye wash stations, have been inspected and reviewed for proper operation and location.	○ Complete	○ N/A	
23	Platforms ladders, handrails, and guards (rotating equipment and heat) constructed correctly.	○ Complete	○ N/A	
24	Fire detection system has been reviewed for proper detector location and correct response/action.	○ Complete	○ N/A	
25	All safeguards including signs (DANGER, HIGH VOLTAGE, KEEP OUT, HEARING PROTECTION REQUIRED), chains, safety equipment boxes, PPE boxes, etc. are installed and adequately stocked	○ Complete	○ N/A	
26	Area has been cleaned of construction equipment, surplus equipment, combustible materials, extraneous tools, unused parts, scaffolding and empty drums	○ Complete	○ N/A	
27	All construction punch list items have been reviewed and completed.	○ Complete	○ N/A	

MARINE

Entire Section Not Applicable (Yes/No)	Marine Section assigned to (if applicable):	Complete Date:

Item	Question	Disposition		Completed By
28	Weight Management Program impacts addressed.	○ Complete	○ N/A	
29	Marine Operations Manual updated	○ Complete	○ N/A	

MAINTENANCE

Entire Section Not Applicable (Yes/No)	Maintenance Section assigned to (if applicable):	Complete Date:

Item	Question	Disposition		Completed By
30	Pre-Start Up Inspection and Maintenance requirements addressed in MAXIMO and approved by Inspection Authority (refer GP 32-30)	○ Complete	○ N/A	
31	All applicable vendor data sheets and other pertinent data updated	○ Complete	○ N/A	
32	PLC logic tested and documentation completed	○ Complete	○ N/A	

Authority: Tom Gray
Custodian: Phil Clarke
Revised for rics: Dan Welch 3/22/09

Pre Start Up Checklist (Drilling Rigs)

33	The fire fighting system complies with 30 CFR 250.803 (8)	○ Complete	○ N/A	
34	Adequate spare parts are available.	○ Complete	○ N/A	
35	All equipment and structures grounded and tested.	○ Complete	○ N/A	
36	All electrical and pneumatic loop checks completed.	○ Complete	○ N/A	
37	Interlocks (Electrical and Mechanical) have been reviewed and tested for proper operation.	○ Complete	○ N/A	
38	All tubing and tubing fittings have been inspected for proper fit-up and leakage.	○ Complete	○ N/A	
39	All instruments weatherproofed.	○ Complete	○ N/A	
40	Emergency equipment (i.e., ESD/PSD), alarms, communication equipment, and shutdown devices calibrated, tested, documented and activated.	○ Complete	○ N/A	
41	The fire and gas detection systems have been inspected and tested and are in auto mode.	○ Complete	○ N/A	
42	All bypasses and jumpers on control or safety circuits have been removed.	○ Complete	○ N/A	
43	Backup batteries at full charge.	○ Complete	○ N/A	
44	Mechanical equipment has been checked for proper alignment, lubrication, and rotation; functional checkouts have been performed on equipment and controls.	○ Complete	○ N/A	
45	All equipment has been filled with proper fluids to the appropriate level and charged as necessary.	○ Complete	○ N/A	
46	Electrical Motors (check for proper rotation and heaters are connected).	○ Complete	○ N/A	
47	Electrical relays, circuit breakers, transformers, lighting and emergency power systems have been inspected and tested.	○ Complete	○ N/A	
48	Controllers and disconnects are labeled if the device being controlled is not obvious.	○ Complete	○ N/A	
49	All electrical equipment installed to design specifications.	○ Complete	○ N/A	
50	All electrical seals have been packed and poured; all explosion-proof boxes, conduit covers are properly secured and all electrical connections tightened and checked.	○ Complete	○ N/A	
51	Any equipment and associated breaker panels not to be used or not available for use are out of service. All lockouts are flagged, tagged and listed.	○ Complete	○ N/A	
52	Rotating equipment: trip points, especially overspeed, have been checked and tested.	○ Complete	○ N/A	
53	The UPS and/or emergency power systems have been tested.	○ Complete	○ N/A	
54	Confirm that replacement hoses have been hydro tested and hose is compatable with operating media.	○ Complete	○ N/A	

OPERATIONS

Entire Section Not Applicable (Yes/No)	Operations Section assigned to (if applicable):	Complete Date:

Item	Question	Disposition		Completed By
55	Written/upoated operating and maintenance procedures are in place.	○ Complete	○ N/A	
56	A start-up plan has been prepared and applied.	○ Complete	○ N/A	
57	All ventilation is restored to as ready status.	○ Complete	○ N/A	
58	Piping and equipment has been inspected for damage, debris, integrity, and anodes.	○ Complete	○ N/A	
59	All permanent blinds are in place; all temporary blinds have been removed. The blind list has been reviewed and approved.	○ Complete	○ N/A	
60	All purging, flushing, draining, and pickling complete.	○ Complete	○ N/A	
61	All drains and sewers have been inspected for plugs and covers.	○ Complete	○ N/A	
62	Piping is routed and valved according to the P&ID.	○ Complete	○ N/A	
63	Inspect valves, flanges and spec breaks to ensure proper pressure rating and compatibility.	○ Complete	○ N/A	
64	All critical piping systems have hydro, pneumatic or non-destructive testing completed and QA documentation.	○ Complete	○ N/A	
65	Relief systems, including PSV's, PCV's, vent piping, flare stacks, and vent booms are installed per construction dwgs.	○ Complete	○ N/A	
66	Flange installations have been inspected for proper bolting, gaskets, isolation kits, and restriction orifices.	○ Complete	○ N/A	
67	Proper installation, operation and orientation of all valves (process, instrumentation, utility, etc.) have been ensured.	○ Complete	○ N/A	
68	All filters, screens, and strainers (temporary or permanent) are properly located and installed.	○ Complete	○ N/A	
69	Piping systems have been reviewed allowing for equipment/facility blowdown and isolation.	○ Complete	○ N/A	
70	Exhaust lines and vents are properly located away from air intakes, air conditioners, fans, sources of ignition, etc.	○ Complete	○ N/A	
71	Locked-secured valves have been inspected and are properly secured in their intended position.	○ Complete	○ N/A	
72	All block valves have been reviewed for normal position (normally open or closed) and handle is able to go full travel.	○ Complete	○ N/A	
73	All fail safe valves have been reviewed for proper action (fail open, fail close, fail unchanged), and location.	○ Complete	○ N/A	
74	Plans in place for future corrosion/erosion inspections (Wall thickness readings, ultrasound inspections, etc.)	○ Complete	○ N/A	

Authority: Tom Gray
Custodian: Phil Clasen
Revised for rigs: Dan Welch 3/2/2009

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Revision Date:

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7.5 References

Following are essential references related to this D&C Management of Change Process:

- DCMOC – BizFlow® work flow application Website: http://dwDCMOC.bpweb.bp.com
- E&P Integrity Management – Element 7 – Management of Change
  - 7.2 Systems and procedures (para. 4)
  - 7.4 Consistency of Procedures
  - 7.7 References
- BP Beyond the Best common process – Segment Recommended Practice
- GoM SPU Register of Engineering Authorities and Technical Authorities (2010-10-EA-RR-0001)
- Delegation of Authority Website: BP Delegation of Authority Home

Following are additional reference documents and materials that should be consulted as necessary. Hyperlinks to the documents are available on the "Welcome" page of the DCMOC – BizFlow® application (refer to hyperlink above).

- BP Drilling and Well Operations Policy – Segment Defined Practice
- BP E&P OMS Implementation Manual, Chapter 4.2, Management of Change
- BP Group Recommended Practice for Management of Change, GRP 4.2-0001
- Selection of Hazard Evaluation & Risk Assessment Techniques – GRP 3.1-0001
- Assessment, Prioritization and Management of Risk – GDP 3.1-0001
- GoM SPU Major Hazards Risk Management Policy 2010-T2-IM-000010
- Engineering Authority Handbook
- Integrity Management Portal
- BP GoM HSSE Website

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	Jonathan Sprague	4/1/09	
	Dave Rich		
	Ian Little		
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