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Issue

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Responsible investor

# Briefing

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Wednesday 8<sup>th</sup> February 2012

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In 2010, we accepted all 26 recommendations made by the Bly Report – our internal investigation into the Deepwater Horizon incident.

BP has committed to providing quarterly updates on progress towards the implementation of these 26 recommendations.

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By the end of 2011, four recommendations had been completed. In this update, and in response to requests for greater disclosure, we also include a summary of the actions taken towards completion of the remaining recommendations.

## Update on completed recommendations

By the end of 2011, four of the report's recommendations had been completed. These were:

- **Recommendation 6:** to propose a recommended practice for foam cementing to the American Petroleum Institute
- **Recommendation 8:** to strengthen the technical authority's role in cementing and zonal isolation
- **Recommendation 13:** to strengthen our rig audit process to improve closure and verification of audit findings across the rigs we own and contract
- **Recommendation 14:** to establish key performance indicators for well integrity, well control, and rig safety-critical equipment

The BP board has identified an independent expert to provide further oversight and assurance regarding the implementation of the Bly recommendations. The independent expert's engagement is expected to commence in the latter half of May 2012

## Progress update

We continue to make progress on all of the remaining recommendations largely in line with our planned schedule. The following is a summary of the work completed towards each of the remaining recommendations<sup>1</sup>.

### BP's drilling operating practices and management systems

1. Update and clarify cementing guidelines
  - A technical document for cementing requirements during drilling operations, well abandonment and suspension has been developed and issued to BP's global engineering operations
  - Three technical documents specific to plug cementing, squeeze cementing and laboratory testing have been issued to BP's global drilling organization
  - Ongoing training for ETP 10-60 (zonal isolation) is underway; 320 drilling engineers in BP have participated in training to date
2. Update requirements for subsea blow out preventer (BOP) configuration
  - Requirements for subsea BOP configurations have been defined and documented
  - Progress has been made toward delivery of revised technical document for subsea BOPs
  - Two sets of blind shear rams are now required on all subsea BOP's used on dynamically positioned rigs
  - The revised estimated delivery date for this recommendation is due to a management decision to align with the Bly program team's 7 step implementation process
3. Update requirements for negative pressure tests and lock-down rings<sup>2</sup>

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<sup>1</sup> You can find a more detailed description of each of the recommendations at [www.bp.com/26recommendations](http://www.bp.com/26recommendations)

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- BP has written an updated tubing design manual which includes requirements for negative pressure tests
  - BP has also issued a casing and tubing technical practice document to include requirements for negative pressure testing and standardization of installation of lock-down rings
4. Update practice on working with pressure, including contingency and testing procedures
    - Updates to related technical documents to include negative-pressure testing are progressing through the final approval process
  5. Strengthen incident reporting standards for well control and well integrity
    - A document to assure appropriate reporting of well control, well integrity and other process safety incidents has been developed and issued
  6. **Proposal of recommended practice for design and testing of foamed cement slurries to API. - Complete.**
  7. Assess risk management and Management of Change (MoC) processes for life cycle of global wells activities
    - Documents for MoC and risk management practices have been developed for global drilling operations and issued to the Global Wells Organization
    - BP has issued a guidance note to the Global Wells Organization surrounding temporary and permanent changes
  8. **Strengthen the technical authority's role in cementing and zonal isolation. - Complete.**
  9. Enhance drilling and completions competency programs for key operational and leadership positions
    - A proposal for the key roles to be included in the enhanced competency programs in BP's global drilling operations has been approved
    - A well control competency assurance program has been instituted for well site leaders (WSLs), with 170 active WSLs assessed (55% complete)
  10. Develop advanced deepwater well control training
    - A proposal for the advanced deepwater well training program has been developed, and its training execution plan is pending approval
    - A well control simulator has been purchased (~\$2MM) to provide actual hands on training for a current estimate of 260 attendees. Course content is under development
  11. Establish BP in-house expertise for subsea BOP & BOP control systems
    - A documented set of authorities and accountabilities for the BP subsea and BOP engineering technical authority role has been completed
    - BP's BOP team is now staffed with a team leader and 11 technical specialists.
    - The revised estimated delivery date for this recommendation is due to internal and external recruitment efforts to fill the BOP Segment Engineering Technical Authority (SETA) position via an advertised vacancy being unsuccessful, meaning the search is now focused on external sources using recruitment specialists

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<sup>2</sup> The negative pressure tests are conducted to assess whether influxes to the wellbore are likely to occur. Lock-down rings are pressurized locking mechanisms which help to seal the casing hanger and maintain the integrity of the well head.

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12. Request the International Association of Drilling Contractors (IADC) to develop subsea engineering certification
    - A request for the IADC to develop a subsea engineering certification has been prepared and is pending management approval for delivery to the IADC
  13. Strengthen our rig audit process to improve closure and verification of audit findings across the rigs we own and contract. - **Complete**
  14. Establish key performance indicators (KPI) for well integrity, well control, and rig safety-critical equipment. - **Complete**.
  15. Require drilling contractors to implement auditable integrity monitoring system
    - For phase one (subsea) of three phases (subsea, offshore, onshore), leading and lagging indicators for integrity performance monitoring of well control equipment on floating rigs with subsea BOP systems have been documented

### Contractor and service provider oversight and assurance

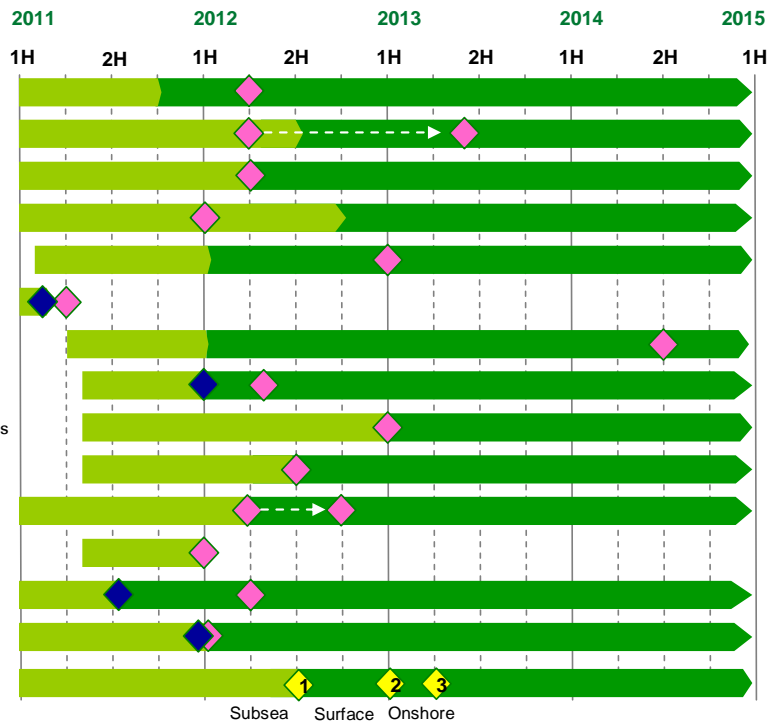
16. Assess cementing service provider capabilities
  - Identification and quality reviews of 36 of 39 cementing service provider facilities within BP's regions have been completed
  - Strategies for incorporating contractual provisions required of BP's cementing service providers in competency and conformance to BP and industry standards have been developed
  - A proposal to enhance cementing capability assessment process has been defined
17. Confirm well control and monitoring practices are defined and applied
  - Requirements for well control and well control monitoring have been defined and a proposal submitted for inclusion in the appropriate technical document
  - BP's well control manual has been updated to include practices for well control and well monitoring, and a proposal has been developed to provide verification and assurance that well control and well monitoring practices are rigorously applied
18. Require hazard and operability reviews for surface gas and drilling fluid systems
  - A practice for assessing surface gas handling systems on rigs has been developed, and 13 of 59 hazard and operability studies (HAZOPS) have been completed as of Q4 2011
19. Include study of all drilling rig surface system hydrocarbon vents in all HAZOPS
  - A document for HAZOP reviews to address a study of all applicable surface system hydrocarbon vents has been developed, and central planning and material development has been completed
  - A rig site visual inspection of surface system hydrocarbon vents on offshore operating BP-owned and BP-contracted rigs has been conducted
20. Establish minimum levels of redundancy and reliability for BOP systems
  - For phase one (subsea) of three phases (subsea, offshore, onshore), a proposal document identifying BP redundancy and reliability requirements for subsea BOP control systems has been completed

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21. Strengthen BP's requirements for BOP testing by drilling contractors, including emergency systems
    - For phase one of three phases, a proposal identifying requirements for subsea BOP testing including emergency systems has been completed
  22. Strengthen BP's requirements for BOP maintenance management systems by drilling contractors
    - For phase one of three phases, a proposal identifying requirements for drilling contractors' subsea BOP maintenance management systems has been completed
  23. Set minimum requirements for drilling contractors' MoC for subsea BOPs
    - A proposal identifying requirements for drilling contractors' subsea BOP MoC systems has been completed
  24. Develop a clear plan for remotely operated vehicle (ROV) intervention for each subsea BOP
    - ROV and other intervention methods for subsea BOP emergency operations have been evaluated, and a proposal defined including emergency options for shearing pipe and sealing the wellbore
  25. Require contractors to verify blind shear ram performance capability
    - For phase one of three phases, a proposal document identifying requirements for contractor qualification processes for subsea BOP blind shear ram pipe shearing performance and management of drill pipe inventory has been completed
  26. Include testing and verification of revised BOP standards in rig audit
    - Upon Completion of Recommendations 20-25 a testing and verification effort will be conducted

# Updated project timeline<sup>3</sup>

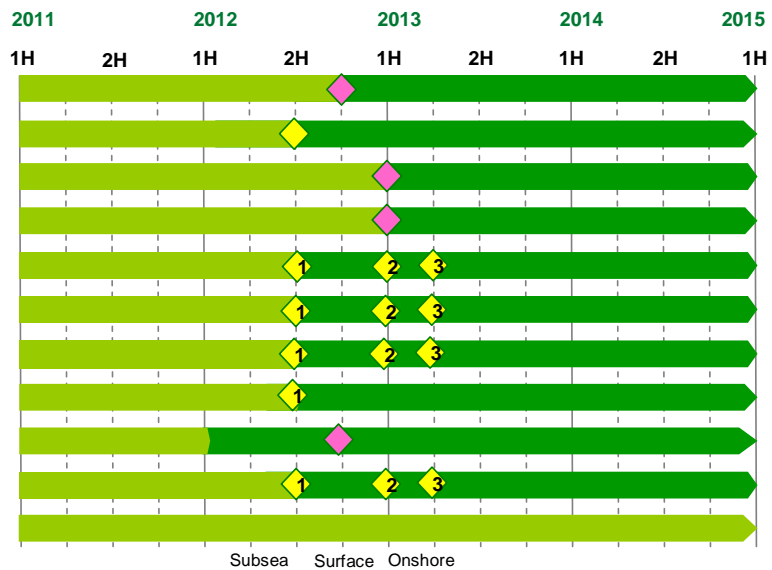
## BP's drilling operating practices and management systems

- 1 Update and clarify cementing guidelines
- 2 Update requirements for BOP configuration
- 3 Update requirements for negative pressure tests and lock-down rings
- 4 Update practice on pressure, including contingency and testing procedures
- 5 Strengthen incident reporting standards for well control and well integrity
- 6 Propose recommended practice for foam cement testing to API
- 7 Assess risk management and MOC processes for life cycle of D&C activities
- 8 Strengthen the technical authority's role in cementing and zonal isolation
- 9 Enhance D&C competency programs for key operational and leadership positions
- 10 Develop advanced deepwater well control training
- 11 Establish BP in-house expertise for subsea BOP and BOP control systems
- 12 Request IADC to develop subsea engineering certification
- 13 Strengthen BP's rig audit process to improve closure and verification
- 14 Establish KPIs for well integrity, well control and rig safety-critical equipment
- 15 Require drilling contractors to implement auditable integrity monitoring system



## Contractor and service provider oversight and assurance

- 16 Assess cementing service provider capabilities
- 17 Confirm well control and monitoring practices are defined and applied
- 18 Require hazard and operability reviews for surface gas/drilling fluid
- 19 Include study of all surface system hydrocarbon vents in all HAZOPs
- 20 Establish minimum levels of redundancy and reliability for BOP systems
- 21 Strengthen BP's requirements for BOP testing by drilling contractors
- 22 Strengthen BP's requirements for BOP maintenance by drilling contractors
- 23 Set minimum requirements for drilling contractors' MOC for subsea BOPs
- 24 Develop a clear plan for ROV intervention for each of BP's operating regions
- 25 Require drilling contractors to verify BSR shearing performance capability
- 26 Include testing and verification of revised BOP standards in rig audit



### Legend – Recommendation Level

Document issue date

Recommendation completed

Sustain in OMS

Recommendation completion (Est.)

Activity delivery

<sup>3</sup> These timelines are estimated and based on existing facts and circumstances. They can shift due to complexity, resource availability and evolving regulatory requirements.

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## Additional information

BP's investigation into the Deepwater Horizon accident drew upon the expertise of more than 50 technical and other specialists from within BP and the industry.

### Internal investigation findings

The resulting Bly Report concluded that no single cause was responsible for the incident. The investigation instead found that a complex, interlinked series of mechanical failures, human judgments, engineering design, operational implementation and team interface failures, involving several companies including BP, contributed to the accident.

In addition, there have been several external investigations, including those of the National Commission on the BP Deepwater Horizon Oil Spill (<http://www.oilspillcommission.gov/>) and Offshore Drilling and the Joint Investigation Team of the Bureau of Ocean Energy Management, Regulation and Enforcement and the United States Coast Guard (<http://www.boemre.gov/ooc/press/2011/press0914.htm>) All of these found that the accident resulted from multiple causes and was due to the actions of multiple parties. We are committed to understanding the causes, impacts and implications of the Deepwater Horizon accident and to learn and act on lessons from it. As part of this commitment, BP is reviewing recommendations from government and industry reports.

### Implementing the recommendations

The investigation team made 26 recommendations specific to drilling which BP has accepted and is implementing across its worldwide drilling operations. The recommendations included strengthening contractor management, as well as improving assurance on blowout preventers, well control, pressure-testing for well integrity, emergency systems, cement testing, rig audit and verification, and personnel competence.

Shortly following the publication of BP's Deepwater Horizon Accident Investigation Report (on 8th September 2010), BP developed specific interim measures to immediately address the 8 key findings contained within the report.

Specifically, an interim guidance document was issued to each region on 27th December 2010 which contained specific requirements including a well start up check list. This guidance continues to be in effect across all BP Drilling & Completions operations in each of our 14 regions. We continue to progress implementation of the recommendations from the Deepwater Horizon Investigation report which will ultimately replace the interim guidance.

Implementing the recommendations requires detailed work - and members of the investigation team have provided input into the project team working to implement the recommendations. S&OR audit provides independent verification that each action is complete. The practices and processes developed out of this effort will be incorporated into our group-wide operating management system.

### Systematic approach

#### *Project delivery*

The process for implementing the Bly Recommendations is firmly in place. The delivery of a project of this scale takes time to assure that all actions are delivered to a high standard and rigorously implemented across all of our well operations. Each recommendation involves many activities from creating new practices and guidance, training and testing appropriate staff, changing requirements and expectations of

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our contractors, and establishing verification processes to assure the changes are sustainably imbedded.

*Dedicated team*

To effectively implement, the effort takes a dedicated team of over 85 individuals working with many key individuals and organizations across BP to develop the content and supporting efforts to implement.

*Timelines*

We have estimated and communicated delivery timelines for each of the recommendations and will continue to provide regular updates of our progress. These timelines are based on existing facts and circumstances and can shift due to complexity, resource availability and evolving regulatory requirements.