



**IADC UBO & MPD
Committee Meeting
Milan, Italy**

**1st Quarter Meeting
Date 22 – 23 March 2012**

Attendance:

Name		Company Name
John	Cohen	AGR Subsea Inc.
Martin	Culen	Blade Energy Partners
Patrick	Brand	Blade Energy Partners
Stuart	Butler	Canrig Drilling Technology Ltd.
Charles	Weinstock	Chevron
Ray	Bullock	Halliburton
Christopher	Bernard	Halliburton
Craig	Godfrey	Halliburton
Mike	Vander Staak	Hess Corporation
Clayton	Myktyiw	Hess Corporation
Joe	Hurt	IADC
Steve	Kropla	IADC
Dennis	Moore	Marathon Oil Company
Michael	Offner	MiSwaco
Shantur	Tapar	National Oilwell Varco
Tracy	Mossman	Nexen Petroleum USA Inc.
Kristin	Falk	Ocean Riser Systems
Cathrine	Lagerberg	Ocean Riser Systems
Frederic	Jacquemin	Pacific Drilling
Guilherme Ribeiro	Magalhaes	Petrobras
Guillermo	Vanni	Petrobras
Paulo Fragomeni	Simon	Petrobras
Emmanuel	Nogueira	Petrobras
Rui	Passarelli	Petrobras
Felipe	Terra	Petrobras
Marcos	Tolfo	Petrobras
Kenneth	Downs	Pruitt Tool & Supply Co., Inc.
John	van-Vegchel	Research & Teaching Services
Don	Reitsma	Schlumberger



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Juan Carlos	Beltran Paredes	Schlumberger
Sara	Shayegi	Shell International E&P
Dave	Elliott	Shell International E&P
Tom	Askeland	SIEM WIS AS
Jan	Andresen	SIEM WIS AS
Thomas	Aarstad	SIEM WIS AS
Anantha	Nauduri	Signa Engineering Corp.
Adrian	Houlbrook	Simmons Energy
Dag Ove	Molde	Statoil
John-Morten	Godhavn	Statoil
Gjertrud	Skar	Statoil
Per Cato	Berg	Statoil
Frederik	Varpe	Statoil
Ivar	Kjoesnes	Statoil
Gavin	Humphreys	Stena Drilling
Stewart	Wilson	Strata Energy Services Inc.
Jose	Gutierrez	Transocean
John	Kozicz	Transocean
Derek	Hibbard	Weatherford
Brian	Grayson	Weatherford
Thomas	Bailey	Weatherford
Bo	Anderson	Weatherford
Guy	Feasey	Weatherford
David	Pavel	Weatherford

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Welcome, Announcements & Safety Moment

Dag Ove, Committee Chairman welcomed group, thanked ENI for sponsoring the meeting.

Joe Hurt, IADC Staff Representative, also welcomed the attendees and gave the group a safety orientation on exits and smoking areas. Joe also discussed the IADC Anti-Trust Guidelines.

Introduction of New Committee Members and Guests

Each attendee introduced themselves including their company name and location. See the attendee list.

Review & Approval of 4Q11 Meeting Minutes

Joe Hurt asked if paper copies of the minutes were necessary at the meeting, keeping the environment in mind or whether the committee members would be satisfied by receiving these electronically. The committee agreed to receive the minutes electronically. The meeting minutes from 4Q11 were reviewed. A motion to approve minutes was made by Martin Culen, seconded by David Pavel. Motion passed. It was noted that the UBD matrix had been discussed at the previous meeting but a motion had not been formally made to accept. The discussion was captured in the meeting minutes on last page.

Review and Confirm Subcommittee and Task Group Chair and Co-Chair

- MPD Subcommittee – Dave Pavel, John Kozicz
- UBO Subcommittee – Clayton Mykytiw, Martin Culen
- HSE Subcommittee – Derek Hibbard, Don Reitsma
- Training – Martin Culen, David Pavel,
- Outreach – Mike Offner, Mike Vander Staak
- DGD – John Cohen, Kristen Falk, Charlie Weinstock
- API Spec 16 RCD Task Group – Martin Culen, Shantur Tapar, Tom Bailey
- Regulatory – George Medley US, Derek Hibbard Canada, Per Cato Norway, Petrobras Representative will confirm, Brazil

Each Subcommittee to draft their subcommittee's mandate, what they are trying to achieve for 2nd Quarter meeting.

Report on status of US BOEMRE/BSEE Draft NTL on Dual Gradient Drilling

Kristen Falk gave an update of the DGD NTL. Six months ago BOEMRE/BSEE approached the Committee and requested a DGD NTL. ORS, AGR, Stena and put together a draft for the DGD NTL which they presented to the rest of the group. The NTL covers offshore applications of DGD only.

The DGD NTL was completed in February 2012. The NTL will need approval by the committee prior being sent to BOEMRE/BSEE. After committee discussion it was decided that some changes are required. The NTL will be reviewed by the DGD Subcommittee and a rewrite presented to the group Friday morning. These will be reviewed in a breakout.

Discussion of MPD candidate screening tool

Sara Shayegi gave an update on the status of the MPD candidate screening tool. The tool has been uploaded to the IADC website and is downloadable. Changes have been made to the excel spread sheet

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and illustrations based on an initial testing of the tool by the subtask group. The link is <https://mpdtool.iadc.org/> that will allow access to the full committee for testing. When this link is used you will be asked to input some information, the system will generate user id and password for you which may require up to 24-48 hours for delivery of credentials. Comments/issues on the tool should be sent to George Medley gmedley@signa.com /Sara Shayegi sara.shayegi@shell.com.

Discussion of UBO/MPD Training Initiative

Martin Culen updated group on reorganization of UBO WellCap course. Martin is preparing the changes and will send the document to Steve Kropla, IADC VP Operations and Brenda Kelly, IADC Sr. Director of Program Development who is in charge of recertification for training within IADC.

The committee had approved these changes.

Status of proposal to reaffirm API Spec 16RCD

API Spec 16 RCD document has been reaffirmed by the group previously. Martin Culen, Spec 16 RCD Task Group chair stated that it is now necessary to address issues/changes with the specification itself to make changes to improve the specification. He would like to receive input from RCD manufacturers. He proposed a break out session for the RCD TG to meet and discuss the changes to the document. Members need to start reading though the document and discussing changes. Discuss details and way forward for the document.

Status of Managed Pressure Drilling Best Practices

Dave Pavel suggested that the best practices document especially the well control matrices are impacted by the specification and need to be included.

Tom Bailey noted that the API 92 U has issues that are more urgent and should be addressed such as the operating matrix with reference to the pressure rating reference as well as other issues that need to be reviewed. This will be addressed in another breakout meeting.

Report on status of IADC/SPE Conference and Dual Gradient Seminar in Milan

Joe Hurt, IADC VP NA Land Operations reported that based on comments it appears that the two conferences were very successful. The 2013 MPD & UBO planning committee met and discussed the possibility of combining the DGD and MPD & UBO conference in 2013. The committee voted to add a half day to the conference and integrate DGD into it. *(IADC note: The hotel does not have a conference room available for additional half day, therefore other options to be discussed at next planning meeting.)* Next MPD & UBO conference is in San Antonio April 17-19, 2013. It was proposed that the conference be 2.5 days instead of one separate day for DGD and a separate 2 day conference for MPD & UBO. There was discussion to require papers accepted and not just presentation abstracts. Although MPD & UBO Committee members would like papers to review as references, it was decided not to require papers. **Motion** by Dave Elliott: To extend conference to 2.5 days and incorporate DGD aspects as appropriate and seconded by Don Reitsma. Motion passed by the committee meeting attendees

One attendee commented that the 2012 DGD workshop and seminar was invited guests only, because there were not enough abstracts submitted. There was discussion on having case histories on DGD projects at the 2013 conference, but it appears that there may not be enough projects completed by the abstract selection time so maybe abstracts would have to be on progress reports, as opposed to additional projects if there have not been many jobs completed and technical papers to present.

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Another proposal was to have a separate DGD seminar in the fall of 2013. It was noted that SPE has been holding an Applied Technology Workshop (ATW) for MPD/UBO six months from the MPD & UBO conference in Asia each year. This does not have papers. It was suggested to hold ATW separately for DGD, or include in MPD/UBO at another forum.

Discussion of Draft HSE Planning Guidelines

Derek Hibbard reported on the HSE planning guidelines. The HSE Planning Guide is more risk based document. A new draft of the document is ready and just needs to be reviewed by the subcommittee break out this afternoon. Necessity of keeping the HSE guidelines which will be discussed in the breakout and results will be presented Friday morning.

Report on status of Marine Guidelines Task Group

John Kozicz reported that the group had been considering issues related to riser use during MPD and were prepared to offer proposed language for the MPD “best practice” document.

Report on Outreach activities

No report at this time.

Review 2012 meeting plans

- 2Q12 – 4-6 June to be held in Oslo hosted by Ocean Riser Systems.
- 3Q12 – 10-12 September to be held in Houston hosted by Pacific Drilling.
- 4Q12 – 3-5 December to be held in Copenhagen hosted by Hess.
- April 17-19, 2013 next MPD & UBO Conference.
- 1Q13 – 15-16 April to be held in San Antonio.

Mike Van Der Saak made a **motion** to have the UBO MPD Committee First Quarter 2013 meeting in San Antonio April 15 – 16, 2013. It was seconded by Derek Hibbard. Motion passed by all.

Discussion of Addendum to API RP92U – Underbalanced Drilling Operations, 1st Edition

David Pavel reported on the work done on API RP 92U regarding the well control matrix in terms of fixing the pressure reference. This was the main urgency and the committee had agreed to the matrix; however there was lack of clarity on definitions.

It was decided to review the well control matrix with the entire committee and take a final vote. David Pavel and Martin Cullen discussed the tables.

Original matrix and matrix from December meeting were presented to the group. Issues covered included the ranges of pressure and flow and their definitions. The committee has gone through multiple versions and the latest one was presented. The well head flowing pressures and surface flow rate ranges definitions were shown. The changes to section 5.4 of API 92U RP were discussed extensively.

Motion made by David Elliott to accept the modified matrix and text of section 5.4 as is, seconded by Dennis Moore. Motion passed unanimously.

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Next steps: Martin noted that matrix and changes to section 5.4 will be packaged and go to Roland Goodwin for revision of section 5.4. It will then go through the API process for re-affirming.

API has been informed that UBO & MPD Committee is starting the process to revise API RP 92U. David Pavel will chair the RP 92U TG and work with Rolland Goodwin to get this in place. This will be issued as a 2nd edition. When the TG revises API RP 92U they need to review the use of “Should” to see where “Shall” is to be used, since API is now going through the process of making changes to the recommended practice and standards document development guidelines.

Discussion of status of MPD “best practice” document

David Pavel stated that the document is combined into one document. The document was sent to the entire committee for review, but only received contributions from Statoil and Brian Tarr, Shell. Dave proposed to delay further review until the June committee meeting. He proposed to send document with track changes showing the changes received from Statoil/Brian to the group.

Dag Ove expressed concern on delaying the review of the document and would like to stick with the original plan. His concern is that committee members will not focus on this document due to other documents to be revised.

Discussion was held for a timeline for feedback on MPD RP, if David can get all comments by May 7, 2012. David emphasized that everyone needs to review and provide comments by the deadline. **Motion** was made by Derek Hibbard: “Anyone who wants to make formal comments on MPD RP must submit these by May 7th to Holly Shock. After this date the document will be closed and to be reviewed by committee”. It was seconded by Grayson; all accepted motion and agreed to review the draft document.

Any Other Business

Report on NORSOK by Per Cato Berg, Statoil

Per Cato Berg reported that NORSOK D-010 (Well integrity in drilling and well operations standard) is being revised. It is a standard for Norway, but it is being used in several places around the world. The first round of commenting closed November 15, 2011. Per Cato is main editor for chapter 13 “Underbalanced drilling and completions operations” and Connor Stricklan (Shell) co-editor. D-010 only covers UBD today but the revised version will cover MPD. Input from the committee is welcomed. The current draft contains some new/controversial issues: One is related to the MPD matrix discussed in the IADC that allows a little influx for MPD operations. Also there are plans for including requirements for minimum drilling window which is a new minimum requirement.

Per Cato and Connor have almost finished their edits, but there is still ongoing discussion on the structure of the chapters which has to be settled. A second industry hearing will be set for May and everyone globally can comment on the second draft. Comment period is from May 18 through July 15, 2012. Everyone should send comments go to Per Cato and Conner Strickland by July 15th. They will edit them and send the second draft to the Standards group in Norway as well as the “experts group” who will review before it is stamped. PTIL, the governing group in Norway, will also comment on NORSOK D-010. The document can be found at: <http://www.standard.no/en/PDF/FileDownload/?redir=true&preview=true>

When it comes to requirements for floaters, it was decided not to include this, at this time. There are numerous technologies both for dual gradient and MPD with backpressure, but none of them have been used on NCS. There is also very little experience worldwide, especially in harsh weather conditions. There is a high risk that new requirements will be quickly proven insufficient, or not relevant.

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Breakout into Task Groups & Subcommittees

Friday, March 23, 2012

Dag Ove, Committee Chair welcomed group and thanked ENI for sponsoring the meeting.

Joe Hurt, IADC Staff Representative gave the group a safety orientation on exits and smoking areas.

Presentation made by Fredrick Varpe of Statoil

Expected limitations to DGD without seal

- Window < friction (Drilling window may be too small i.e. between 7 to 30 bar)
- Window < heave induced pressure fluctuations (i.e. 20bar)
- Statoil regulations: cannot drill statically UBD unless you have mitigating action
 - System needs to be able to deal with contingency more than just closing the BOP, there needs to be further action/capability feasible.
- High depleted reservoir

Backpressure MPD:

- Light mud statically underbalanced
- Overbalance due to back pressure and friction
- Both friction and choke pressure lost quickly if flow stops without mitigating action
- Mitigating action: special automatic control solution to trap pressure with a fast acting choke, if the rig pump stops – verified by tests
- Theoretically possible to address

Dual Gradient without annular seal:

- Open system
- Not possible to trap pressure
- Not possible to compensate for fast changes
- Not okay to drill statically underbalanced
- Depletion capabilities limited to water depth

Dual gradient with annular seal in riser (i.e. SMD)

- Possible to trap pressure
- Theoretically possible to compensate for all or some of the swab/surge effects induced by heave by having a fast subsea pump
- Depletion capabilities limited to water depth

Statoil has done several wells already including

- Above tension ring installation – difficult solution due to weather window and high heave in North Sea compared to other regions – calm seas
- Implementing the GSF Explorer type below the tension ring implementation in the North Sea compared to other regions of calm seas.
 - MPD
 - Well bore strengthening
- Below tension ring installation
 - Installed on GSF Explorer and used on several wells for consortium where Statoil is partner – used as gas handling and for ballooning.
 - Intent is to take the system used to North Sea
 - Issue is with heave, highest heave seen in Indonesia was 0.5m
 - Deployment through rotary table was to get people out of the moon pool area but do have two hoses

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- Current one requires 60” rotary table, next one will be 48”.
- RP 16Q Design and analysis of Riser Systems is being re-written currently and will include a section on MPD.
- Petrobras – 500m water depth, 5700m, surge/swab not getting the numbers seen, with periods of 6 – 7 seconds. Very low numbers compared to what is shown in Statoil’s report.

The Committee divided into breakout sessions

Break – ENI/Saipem

Breakout Session Summaries

Report of Dual Gradient Drilling Subcommittee

Kristen Falk presented the results from the DGD subcommittee breakout session in which the DGD NTL has been reviewed the content has not been changed, with just some changes to wording.

- Use wording including “may” instead of “shall” where appropriate so that all types of DGD are included and no one is excluded.
- This document was written last summer and has been reviewed several times. This was the last review.
- Steps forward is to send this document to Joe Hurt who will then send it to BSEE next week.
- At the next Committee meeting in Oslo the DGD subcommittee will be working on planning and outreach.
- Kristen Falk made **motion** to accept DGD NTL as is presented from subcommittee. Charlie Weinstock seconded the motion and passed unanimously.

Report of Breakout Session to HSE Guidelines Document

Derek Hibbard presented results from HSE guidelines subcommittee. The group discussed the issue and decided to change the direction they had been working. The plan forward was presented.

Mission was defined and the primary aim is to identify considerations to mitigate risks during diffident phases of UBD/MPD projects and note what is different from a conventional drilling operation.

1. Initial well design
 2. Detail Well Design
 3. UBO/MPD Planning
 4. Implementation
 5. Pre- execution
 6. Execution
 7. Completion
 8. Learning’s and Knowledge management
- Appendices will be included for additional examples.

A document will be ready two weeks prior to the June Oslo meeting. Please send comments prior to the Oslo meeting. Would like to close out and vote on this at the next meeting. A word format will be sent out that will allow track changes.

Intended Audiences: Project Management Teams/HSE Teams

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Key Objectives: To provide information and guidance on HSE related activities in the planning and execution phases of an UBO/MPD project.

Breakout Session for API Spec 16 RCD

Martin Culen presented results from the API Spec 16 RCD task group discussion. Accepting API 16 RCD document as it was intended which is a standard for design and manufacturing rotating control devices. It is not an operations, inspection, or field use recommended practice type document.

The Task Group will be going down several tracks.

1. Changes need to be made to API 16 RCD will be the main focus of the TG.
2. Operational issues will be captured in either Recommended Practice document or Supplement to 16 RCD
 - a. Build separate documents to address these issues under guidance from API.
 - i. Possibly be placed in a Recommended Practice:
 1. RCD testing – Pressure test non monogram equipment to a test criteria as defined by end user
 - ii. Possibly in Supplemental Testing document to 16 RCD
 1. High Pressure High Temperature (HPHT)
 2. Oil Base Mud (OBM)
 3. Marine Riser Use
 4. Combined testing

Complete minutes of the first task group meeting are issued as a separate document.

The TG will meet 3 May 2013, in Houston, Texas. Manufacturers are asked to send their comments and recommended changes to Martin by April 25th. APR Spec 16 RCD with the recommendation will be posted on the IADC website for review by the subtask group prior to the meeting.

API RP 16Q “Recommended Practice for Design, Selection, Operation and Maintenance of Marine Drilling Riser Systems” has a section for MPD, whoever on the subcommittee who wants to participate needs to get involved and volunteer.

Adjournment:

Dag Ove Molde asked if there was additional business. Since there was no additional business brought forward Dag Ove Molde called the meeting adjourned. He thanked everyone for attending and expressed thanks to ENI for hosting the meeting. Martin notified the group that the API Spec 16 RCD task group will continue discussion after lunch.