




**IADC UBO & MPD
Committee Meeting
Shell
Denver, Colorado USA**

**7-8 April
2011
1st Quarter**

Attendance Sheet

Name		Company Name
Sara	Shayegi	Hess Corporation (Chair)
Richard	Brainard	AGR Subsea Inc
John H.	Cohen	AGR Subsea Inc
Nigel	Alvares	Blade Energy Partners
Clayton	Christensen	Blade Energy Partners
Kent	Fortney	BOEMRE
Dana	Witt	Chevron
Tim	Tonnessen	Halliburton
Randy	Lovorn	Halliburton
Neil	Ross	National Oilwell Varco
Robert	Goodwin	National Oilwell Varco
Jason	Power	Noble Drilling
Cathrine	Lagerberg	Ocean Riser Systems
Kristin	Falk	Ocean Riser Systems
James	Dech	Ocean Riser Systems
Guilherme	Vanni	Petrobras
John	van-Vegchel	Research & Teaching Services
Don	Reitsma	Schlumberger
Juan Carlos	Beltran	Schlumberger
Ossama	Sehsah	Schlumberger
Brian	Tarr	Shell International E&P
Rick	Medeiros	Shell International E&P
Dave	Elliott	Shell International E&P
George	Medley	Signa Engineering Corp.
Jaye	Shelton	Smith
Dag Ove	Molde	Statoil
John-Morten	Godhavn	Statoil
Per Cato	Berg	Statoil

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Sturle	Gaassand	Statoil
Fredrik	Varpe	Statoil
Gavin	Humphreys	Stena Drilling
John	Kozicz	Transocean
Jasmin	Begagic	Transocean
Brian	Grayson	Weatherford
Thomas Floyd	Bailey	Weatherford
David	Pavel	Weatherford
Derrek	Hibbard	Weatherford
Don	Hannegan	Weatherford
Mark	Gilmour	Woodside
Ken	Fischer	IADC

Thursday, 7 April 2011

Welcome, Announcements & Safety Moment.

Sara Shayegi and Ken Fischer opened the meeting and provided venue information and safety announcements. Brian Grayson was thanked for his 2010 involvement as the Committee chair.

Introduction of New Committee Members and Guests.


Each attendee stated their name and company. An increase in attendance was noted from the 4Q10 Committee meeting (i.e., an increase from 19 to 34).

Review & Approval of 4Q10 Meeting Minutes.

The Minutes of the 4Q10 meeting were approved without amendment. Nigel Alvares volunteered to take the Minutes for the 1Q11 meeting.

Comments on 2011 IADC/SPE MPD & UBO Conference.

- Large increase in attendance was noted. Conference is gaining exposure.
- Offshore focus was disappointing. Presentations regarding land operations were lacking.
- International representation was preferred which skewed the presentations towards offshore operations.
- MPD received much more attention than UBO. Low cost applications would be of interest.
- International flavor was good. Venue was good but San Antonio was better. Lunch was crowded. Audio/visual needed improvement. Presenters need coaching, especially in regard to reading entire slides.
- Prescreening of presentations and coaching required. Minimization of commercial content required.
- Good technical content. Too much chatter in audience. Not enough questions.

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- Speakers and moderators should be given guidelines.
- Need to accommodate the young/inexperienced/nervous speakers and allow for some slack in order to encourage growth of younger engineers. A suggestion was made to bring presenters and moderators in one day early.
- A suggestion was made to organize the committee meeting prior to the conference.
- Some level of commercialism should be accepted as long as it is not too overt.
- Text and graphics in some presentations were unreadable or not understood due to formatting. A template for presentations and plots should be issued.
- An effort should be made to reach into SPE to broadcast technical and operations content.
- An effort should be made to invite speakers to talk about specific topics.
- An Applied Technical Workshop (ATW) format may work better than a conference. This may be a better method to pull in more people and promote discussion and confrontation and less commercialization in the breakout sessions. ATW format will work for a maximum of 100 people.
- Service companies dominated conference. Operator attendance and involvement could be increased by reaching out and inviting specific operators. Pemex did not attend yet papers were presented on their operations. An incentive like free registration could be a way to draw in operators.
- Use the online conference evaluation forms to pass on suggestions to the conference planning committee.
- Discussion on Notice To Lessee documents (NTL) and post Macondo industry response.
- Suggestions on ~6 papers/presentations to make into articles for the Drilling Contractor magazine.
 - o Fluids presentation from MI Swaco with possible collaboration from Statoil.
 - o Control systems and hydraulic modeling presentation from Statoil
 - o MPD past/present/future presentation from Petrobras
 - o RCD and well control presentation from Shell
 - o Gulfaks MPD from Halliburton
 - o Mitigating risk and NPT using MPD from Forest Oil
 - o Potential combined operator's perspective article on the value of MPD
 - o Potential combined article on well control and MPD
- Suggestions for North American venue for 2013
 - o San Antonio
 - o New Orleans
 - o Calgary

Discussion of Dual Gradient Drilling Subcommittee Terms of Reference.


John Cohen made a brief presentation on the work required of the DGD Subcommittee. Vision and mission statements, goals, tasks and roles were mentioned as being important to discuss and define. Future work included identifying technical gaps and developing best practice/well control documents.

Report on plans for Dual Gradient Workshop, 5 May 2011, in Houston.

John Cohen stated this DGD workshop would be on the Thursday of OTC week. There were 84 participants currently registered.

Discussion of proposal to reaffirm API Spec 16RCD.

Brian Grayson updated the group on the process to reaffirm API Spec 16RCD as per discussions with Roland Goodwin, API. A balloting process would need to be conducted in order to reaffirm the Spec. Optional would be to draft an addendum to the Spec. The general consensus was to reaffirm the Spec as

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it is now without an addendum. Updating the current list of voters would be the first step regarding the balloting process (existing members may need to be replaced). Proposed is an RCD breakout session. Brian Grayson will continue his work on the reaffirmation of API Spec 16RCD.

Discussion of Draft HSE Planning Guidelines and Training Initiative.

Derek Hibbard provided a brief update for the Committee noting that 2 out of 50 had responded with comments on the HSE Planning Guidelines document. The plan was to validate the comments and incorporate whatever was appropriate into the document. Regarding the training initiative, Martin Cullen was identified as the responsible party for developing the agenda for a 1 day training course on UBO/MPD operations.

Discussion of Status of MPD “Best Practice” Document.

David Pavel provided an update on the Applied Back Pressure (ABP) “best practice” document. The ABP method is the first of four methods that will comprise the final document.

Discussion of MPD Candidate Selection Tool.

George Medley provided an update on the current status of the tool. The MPD candidate selection tool may be renamed to MPD screening tool. Work had been done to revise the scoring system to increase the weight of each method’s primary goal. The current version is stable using .NET. Outstanding work included revision of each method’s description and well control. The ideal location for the MPD screening tool would be the IADC website. The screening tool could be promoted at future IADC exhibitor’s booths.

Report on Outreach activities.

Encouragement of Apache, Exxon, Pemex and Conoco to attend future committee meeting was mentioned.

Review 2011 meeting plans.


Ken Fischer discussed the upcoming meeting dates in 2011 and the following dates and locations were agreed upon:

- **2Q11:** 13-14 June, Copenhagen, host(s) TBD
- **IADC World Drilling Conference:** 15-16 June, Copenhagen.
- **3Q11:** 23-24 August, Houston, AGR to host.
- **4Q11:** 6-7 December, location in Europe TBD. (Later Ocean Riser offered to host in Oslo.)

Any Other Business.

Don Hannegan and Dave Elliott stated API RP92U well control matrix requires revisiting. The use of stripping pressures in the matrix will be discussed in the MPD best practice subcommittee. The UBO and MPD matrices will be aligned.

Gavin Humphreys stated his concern on new technology using marine risers as pressure vessels instead of flow conduits without standardizing the approach from an engineering and testing perspective. Since the MPD best practice document will not be released soon, a suggestion was made to create a focus group (from members the DGD subcommittee). The task of the focus group would be write marine riser

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“do’s and don’ts” for MPD and DGD operations. Stena, Transocean and Noble were identified as members of the focus group.

Kent Fortney explained the need for a BOEMRE Notice to Lessees pertaining to dual gradient drilling. NTL No. 2008-G07 *Managed Pressure Drilling Projects* expires in 2013. The current MPD NTL only addresses the constant bottom hole pressure (CBHP) technique. Revisions to the MPD NTL should be considered by the UBO & MPD Committee. The use of an RCD as a part of primary well control also needs to be addressed. For DGD operations, a separate NTL may need to be developed. A draft version of the DGD NTL is hoped for the end of the 2011.

Breakout into Task Groups & Subcommittees

The Committee divided into breakout sessions for the MPD “best practice” document, the DGD Subcommittee and the review of the HSE Planning Guidelines.

Friday, 8 April 2011

The meeting was called to order by Sara Shayegi. Safety, comfort and smoking arrangements were reviewed.

Breakout into Task Groups & Subcommittees

The Committee continued breakout sessions for the MPD “best practice” document, the DGD Subcommittee and the review of the HSE Planning Guidelines.

Report on Health, Safety & Training Subcommittee Breakout Session


Minutes captured by Derek Hibbard, HSE&T Subcommittee Chair.

The HSE and T Subcommittee met with two primary objectives to address; the first being the development of a strategy to move the Training initiatives forward that has been stalled for the past 6 months. Specifically, the course outline for a proposed one day basic UBO/ MPD addendum that could be used as a supplement to the Conventional WellCAP Accreditation stream. In order to move this forward, Martin Cullen of Blade Energy agreed to champion the initiative and develop a draft course outline to be available for review in advance of the Q2 meeting and intended for presentation to the full Committee for sanction at the meeting in Copenhagen in June.

The second objective was to discuss and review the IADC UBO/ MPD HSE Planning Guidelines. At the Q4 meeting in 2010 (Reading, UK) the full Committee was requested to undertake a comprehensive review of the existing guidelines and provide comments back to the Subcommittee for review and inclusion. Due to the lack of comments received, it was agreed that an analysis should be undertaken to determine the current values of the Guidelines. The results of this analysis identified that the document in its current form was dated and unlikely to meets the needs of broad industry moving forward. Therefore, the Subcommittee proposed a number of changes to the full Committee that were accepted as a means to move the initiative forward. It was agreed that a new draft of the Guidelines would be developed and made available for broad review in advance of the Q2 meeting and then intended for presentation and sanction at the meeting in Copenhagen in June.

A summary of the proposed changes to the Guidelines is as follows:

- *Amend focus of guidelines from HSE management systems to the more targeted “critical” planning components for UBO or MPD operations; Development of a Risk Register,*

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completion of a HAZID/ HAZOP, development of effective bridging documentation and communication

- *Development and inclusion of additional templates & tools*
- *Intent of the Guidelines would change to act as a source of validation for the UBO/ MPD planning process*
- *Amend to more effectively bridge to Standards documentation where appropriate (API RP 16 RCD, RP 7 NRV, RP 92U & MPD) for operations/ execution phases*
- *The title, scope & objectives of the Guidelines to be amended from HSE to incorporate Risk Management as the primary focus*
- *Significant streamlining of the document required*

Report on Dual Gradient Drilling Subcommittee Breakout Session

Minutes captured by Kristin Falk, DGD Subcommittee Vice Chair.

NTL- Dual Gradient Drilling:

Discussion how to do this, and whether it should be a part of the MPD current document. Should start with a new document. We will send out a note that we are looking for persons to sit on working group to facilitate writing of draft guidelines to DGD. Richard Brainard and a person from Chevron will chair this. This should be a high level document. Need to talk about well control and barriers. IADC will write guidelines only. Should not be tied to any specific system. What Dual gradient must achieve. The guidelines are required within 4-5 months from today. 30CFR250.414-H: For equipment not covered by NTL. Requires well control procedures involving anything that might be considered a well control equipment. BOEMRE sends out a first draft of the NTL to all members of the sub-committee, and we will discuss on the Friday after DGD workshop. Company procedures: 3rd party review will be required.

Definition of Dual Gradient:

Ossama will do a first rewrite of the DG definition and send it out for review through IADC prior to the next meeting in May. "Two or more effective densities." Will exclude the word "annulus" and include "multiple" gradients".

Meeting in May:

Will do a DGD sub-committee meeting in Houston May 6th after the DG workshop.

DG Drilling workshop:


We should try to avoid commercialism and not to have the subjects repeated for each presentation. IADC should send out e-mail (John) with high-level guidelines by middle next week. It is too late to standardize on format, but we can still send out guidelines. It was decided last time on the phone that we will not have a pre-meeting. We will still ask moderators to coordinate amongst their group. 84 registered. Can take more than 150 persons. Will have an IADC stand. Please register as soon as possible.

Re-state DGD vision and mission:

We will include fixed, floating, and land based operations into our sub-committee activities. New Vision statement: "To facilitate the safe and efficient exploitation of hydrocarbons utilizing Dual Gradient technologies."

Subcommittee:

There are currently 34 persons on the list. Encourage additional operator and regulatory participants. Try to get all groups that are working with DGD to be represented in the DGD subcommittee. Proposals from Ken to what we should be doing in this group: GAP analysis on existing technologies. What elements do not have industry standards? Find areas that needed standards, prioritize, and then define. Promote and teach.

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Publicity:

We will consider having DGD workshop as annual event. But we should move it to another venue and place. One idea is to have a Workshop as part of committee meeting in Q4. Another idea is an ATW on Dual Gradient Drilling. Invite specifically persons to do DGD presentations at next MPD-conference in Milan (Both operators, drilling contractors and government bodies (PTIL and BOEMRE)).

Well Control:

This should be one of the first subjects to discuss. We need same level for barriers or better. BOEMRE: The most important issue to discuss is how you define DGD for well control situations. What happens then? When does a company procedure get a standard?

Riser Margins: Can demonstrate that we get the riser margin. For deep water it is very difficult to obtain riser margin with conventional drilling.

Important point to using a partly evacuated riser:

1. Need reliable and accurate level measurement.
2. The seals on the wellhead/BOP have a limited tolerance towards external pressure. Shell has experienced that there are engineering solutions to this.
3. Lubrication of the slip joint. Cooling of a dry slip joint should be considered.

Documents:

That should be basis of our work.

Barriers:

Use NORSOK D10, Defines the need for two independent barriers. Marine operations. IADC surface BOP for floating operations (from 2004).

Marine considerations to MPD (with a Riser)

Use the IADC surface BOP guidelines as a starting document and adjust for Dual Gradient Drilling and Pressurized Drilling. Action: John Kozicz is in charge of reviewing the documents together with the other drilling contractors.

Report on MPD Screening Tool Breakout Session


Minutes captured by George Medley, MPD Subcommittee Co-Chair.

The MPD Screening tool group met during the afternoon of April 7. Three goals of the meeting were agreed on: 1) Finalize the descriptions of the various methods of conducting MPD, which will be included in the screening tool software; 2) Define the color code used in the software that is related to well control barriers; and 3) Determine how the software should be distributed.

(1) Descriptive statements for each MPD Method

The descriptions currently in the software are not completely accurate and some of the links in the software point to incorrect descriptions. The descriptions should include a title that corresponds to the methods listed in other parts of the software tool that were decided on earlier. A list of SPE and IADC/SPE paper numbers relevant to each method should be the only reference material attached to the software. These paper numbers can be added to in the future. Any committee member may suggest paper numbers to be added as references.

George Medley will finish collating the descriptive statements collected by Sara Shayegi and will be responsible for editing them for correct content. Additional descriptive statements will be solicited from John Cohen regarding the dual gradient forms of MPD. These will be added to those collected already by Sara Shayegi. **(Activity Since April Meeting:** All descriptive statements have been collected, edited for

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technical content, edited for grammatical content in the English Language, and are ready to be included in the software.)

The updated and corrected descriptive statements will be sent to the entire UBO and MPD Committee one more time to have them checked. This check will be for *accuracy only*, and no additional changes will be made unless the statements are incorrect.

Discussion ensued regarding the inclusion of some sort of generic “gradient vs. depth” graph to be included with the generic schematic for each MPD technique. The group decided this may be added later once the software is up and running.

(2) Well Control Barrier Color Code

The color scheme utilized in the software is straightforward. Jim Dech, who has written most of the code for the screening tool will ensure a description of the code is included with the software. The color code for the WC Barriers column in the software is as follows:

Green – Mud Weight is the primary well control barrier

Yellow – Mud Weight plus some mechanical means are required together as the primary well control barrier.

Grey – Use of the particular MPD technique in question may or may not alter the primary well control barrier to something other than Mud Weight.

Red – Use of the particular MPD technique in question severely impacts the primary well control barrier. (NOTE: Currently no techniques result in a red color code with regard to well control barriers, but this definition will be maintained for possible future use.

(3) Distribution of the Screening Tool Software

Once descriptive statements are updated and corrected, the UBO & MOD Committee should again take approximately one month to use the software with the intent to find as many bugs as possible. At the end of the time period, required changes, if any, will be made to the software. The software will be made available free of charge to anyone in the industry.

The preferred method of distribution of the screening tool is to have IADC host the software on the IADC website. George Medley will check with Ken Fischer to see if IADC can add the screening tool to the published documents. George will also check with Mike Killalea about having IADC host the software on the website. (**Activity since meeting:** George Medley and Ken Fischer met with Mike Killalea on April 19, 2011 regarding this issue. At this time the IADC has no staff in place to facilitate hosting software on the IADC website or with the technical knowledge to carry this out. There may be a way to do it if one of the committee members’ companies can provide volunteer staff to set this up. However, that is not a sure thing, and it will require a commitment to keep the software updated and trouble shoot use of the tool once it is up and running.)

Adjournment:

Sara Shayegi thanked Shell for their sponsorship and thanked all participants for their time and effort over the course of the meetings. The meeting was then adjourned.