Welcome, Announcements & Safety Moment.

Per Cato Berg welcomed the UBO-MPD committee and thanked Maersk Training for sponsoring the meeting.

Jacob Raffnøe Petz from Maersk welcomed the committee and gave a short safety information.

Leesa Teel gave an overview about IADC antitrust policy. The guidelines can be retrieved in their entirety from the IADC web site.

Antonio Torrealba was appointed to be a minute taker.

Carlton (Dale) Walden & Paul Sonnemann gave the Safety moment.

Introduction of Committee Members and Guests. The group was asked to introduce itself. Each attendee gave an introduction including company name and work location. See Appendix 1 for the detailed list of the attendees.

IADC UBO & MPD Committee recognized Per Cato Berg for his contribution and role as Committee Chair during 2016. Bravo Per Cato!

Q3.16 Meeting Minutes – Review

Per Cato went through the MOM from the 3rd quarter meeting. No feedback back was received, therefore the minutes were automatically approved.

Discussed Meeting and conference schedule

2017 Committee Meeting Destination.

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Date</th>
<th>Location</th>
<th>Sponsor</th>
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<tbody>
<tr>
<td>Q1</td>
<td>March 30 - 31</td>
<td>Rio de Janeiro</td>
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<tr>
<td>Q2</td>
<td>June 6 – 8</td>
<td>Houston</td>
<td>Blade</td>
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<td>Q3</td>
<td>August</td>
<td>London?</td>
<td>Schlumberger?</td>
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<td>Q4</td>
<td>December</td>
<td>Houston?</td>
<td>Maersk Training?</td>
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A sponsor for meeting in Rio has not been yet assigned.

The IADC UBO & MPD Committee will meet after the 2017 IADC/SPE UBO/MPD conference at the same venue, which make the cost of hosting the meeting be ~8,000 UDS. It has been proposed to have multiple sponsors.

Discussed location for 2018 IADC/SPE UBO/MPD conference:

- Leesa confirmed New Orleans as the location for the 2018 IADC/SPE UBO/MPD conference
• 2018 IADC/SPE UBO/MPD dates: 17-18 April 2018
• IADC UBO & MPD Committee meeting dates: 19-20 April 2018

Subcommittee reports

MPD

Per Cato Berg gave an update:

• **Surface Backpressure - Surface BOP (92M)**
  Went out for 2nd ballot with 12 comments returned. Per Cato received comments and implemented modifications, to later send 92M back to API.
  92M has not been published yet, but it is expected to happen by February 2017.

• **PMCD - Subsea BOP (92P)**
  Ballot distributed with 250 comments received. Those comments were partially addressed during Q3 meeting, leaving approximately 40 comments to be reviewed during Q4 meeting.
  It is expected to finalize outstanding comments during Q4.

• **Surface Backpressure - Subsea BOP (92S)**
  Went out for 1st ballot and as a result the IADC UBO & MPD Committee received 219 comments. After some initial screening there are 173 outstanding comments, comments that will start being reviewed during 2016 Q4 meeting
  The goal it to finished post Q4 outstanding comments during 2017 Q1 meetings in Rio de Janeiro.

UBO

No representatives present.
No action items have been assigned to the subcommittee since last meeting. 92M has taken precedence before any further work.

DGD – Børre Fossli

1st draft o Controlled Mud Level (CML) MPD RP has been prepared and distributed within the DGD group. There are 15 remaining comments to process from the initial 158.

The task group plans to review outstanding comments during Q4 meeting, to then get the MPD subcommittee approval before redistribution.

It has been highlighted that CML MPD RP will need to be reviewed to incorporate updates done to 92S.

The document will need some drawing updates and editorial work. Anyone wishing to participate in the work group is welcome to do so and should reach out to Børre Fossli.

DGD task group leader to check with API regarding their position and plan toward the document.

HSE / Training Subcommittee – Oscar Gabaldon

New guidelines for Wellsharp have been provided by IADC and must reviewed by the subcommittee.
Despite of a very low quorum of the subcommittee, the goal it to finished processing IADC comments during Q4 meeting.

Gas in Riser – Paul Sonnemann

Gas in Riser is now a subcommittee.

It has been brought up again that there is a lot of interest from the industry on this matter, and that there are a few processes/initiatives being started.

The task group has not met yet. The plan forward of the task group is to define the scope of the document and come up with a game plan.

Regulatory liaison

No representatives present.

Comments about some potential changes to regulations due to changes in the US administration.

This has been identified as something to follow up, and no further details has been given.

Well Control Liaison – Paul Sonnemann

It has been decided that the “gas in riser” topic will be addressed by the IADC UBO & MPD Committee.

No additional work performed by work group, understand problems and solution but there is stalling until committee commits to picking it up.

Certifying Authority Liaison – CJ Bernard

No known updates for DNV-GL. It seems that DNV-GL has started an internal revision of their certifying MPD related documents. The CJ Bernard will contact DNV-GL to learn more.

Committee members consider advisable to eventually cross reference DNV-GL docs with RP 92M

Jay Bruton provided update from ABS


API 16RCD Task Group

No representatives present.

Task group to meet independently between 2016 Q4 and 2017 Q1 meetings, or if not possible, after 2017 IADC/SPE UBO/MPD conference (Rio de Janeiro)

Businesses yet to be Addressed

- Mike Vander Staak proposes we should have participation in API RP 16Q task group and pending revision. Document will be submitted to UBO/MPD committee for review and comment. Propose to have liaison report back to UBO/MPD Committee.
Consolidated MPD RP document will remain on hold until existing RP revisions or new RP’s (ie. CML RP) are complete.

Action Item – Martin to verify with API if we can include monogramming of RCD component – Bearing assembly or cartridge.

New Business Discussed

- A new Well Construction guideline has been published by O&G UK, covering some MPD related topics.
- An update has been given by Antonio T. regarding the work that the Canadian group IRP 22 done reviewing the current document to represent more accurately current MPD practices.

Nominees for the next year’s committee officials were received.

Breakout sessions

Working sessions covering:

- **MPD sub-committee** will review remaining comments on SBP, Subsea BOP (92S) document and PMCD (92P) document.
- **DGD sub-committee** working on CML RP document.
- **Gas in Riser sub-committee** will define the scope of their work.
- **HSE / Training Subcommittee** will discuss documents status.

12:00 Lunch - Sponsored by Maersk Training.

13:00 Breakout sessions continued throughout afternoon.

16:00 Meetings adjourned for the day

DAY 2 – Wednesday November 30th

Per Cato Berg welcomed the UBO-MPD committee to the 2nd day and thanked Maersk Training for sponsoring the meeting again.

Summary of yesterday’s breakout sessions:

**MPD subcommittee:**

- Continue reviewing outstanding comments on 92P, 20 comments left.
- Once finished with 92P, the subcommittee will start working on the comments received in regards 92S.

**DGD subcommittee:**
• Not enough quorum on the first breakout session, therefore no progress was achieved processing outstanding comments.
• It has been asked to the rest of the committee to participate on the DGD subcommittee breakout session today.

Gas in Riser subcommittee:
• Subcommittee members were brought up to speed in regards to the idea of forming this subcommittee.
• Ideas on how to present/deliver the subcommittee work to the industry were discussed.

HSE / Training Subcommittee:
• Subcommittee members were brought up to speed in regards to the status of the curriculums and IADC feedback.
• Waiting to hear from IADC, no further work has been performed.

As it has been the costume for many years, the Vice Chairmans of 2016 will play the role of Chairmans during 2017. Therefore, only Vice chairmans were nominated and elected (with a few exceptions). The leaders of the Committee and Sub-Committees are indicated below. Non-elected nominees are also listed.

<table>
<thead>
<tr>
<th>2017</th>
<th>Chairman</th>
<th>Vice Chairman</th>
<th>Non-elected candidate</th>
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<tbody>
<tr>
<td>UBO &amp; MPD Committee</td>
<td>John Kozics</td>
<td>Oscar Gabaldon</td>
<td>Martin Culen, Paul S.</td>
</tr>
<tr>
<td>MPD Sub-Committee</td>
<td>Andre Alonso</td>
<td>Martyn Parker</td>
<td>Martin Culen</td>
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<tr>
<td>UBO Sub-Committee</td>
<td>Dennis Moore</td>
<td>Antonio Torrealba</td>
<td>-</td>
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<tr>
<td>DGD Sub-Committee</td>
<td>Borre Fossli</td>
<td>Kent Mayfield</td>
<td>-</td>
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<tr>
<td>HSE / Training Sub-Committee</td>
<td>George Medley</td>
<td>Jacob Raffnsøe Petz</td>
<td>-</td>
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<tr>
<td>Regulatory Liaison</td>
<td>Earl Dietrich</td>
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<tr>
<td>Well Control Liaison</td>
<td>Paul Sonnemann &amp; Chalie Orbel</td>
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<tr>
<td>Certifying Auth. Liaison</td>
<td>C.J. Bernard</td>
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<tr>
<td>API Document Liaison</td>
<td>Sara Shayegi</td>
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<tr>
<td>API 16 RCD Task Group</td>
<td>Martin Culen</td>
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</table>
10:00 – 10:15  Coffee Break – sponsored by Maersk Training

Breakout session cont.

12:00  Lunch - Sponsored by Maersk Training.

13:00  Breakout sessions continued throughout afternoon.

16:00  Meetings adjourned for the day

**DAY 3 – Thursday December 1st**

Per Cato Berg welcomed the UBO-MPD committee to the 3rd and last meeting day, and thanked Maersk Training for sponsoring the meeting again.

**Summary of yesterday’s breakout sessions:**

**MPD subcommittee:**

- 92P comment revision completed, and to be sent to API.
- ~100 outstanding comments on 92S.

**DGD subcommittee:**

- More participants joined the breakout session.
- Outstanding comments were addressed.
- The task group will review the document once more before sharing the document with the entire committee

**Gas in Riser subcommittee:**

- Initial thoughts on how to present/deliver the subcommittee work to the industry:
  - API Standards
  - API technical report
  - API bulletin
  - IADC Articles
  - IADC announcements alert (notification and request for industry support)
  - Appendix to Deep Water Well Control current guidelines

- Ongoing discussion
  - How to communicate to the industry why is this important
  - What can be done about this
  - Subcommittee task/role designation

**HSE / Training Subcommittee:**
• IADC have sent their comments back and the subcommittee will now review them

**Breakout session cont.**

10:00 – 10:15  Coffee Break – sponsored by Maersk Training

11:30 – 12:15  Other Topics and Meeting Wrap Up

**Summary of Day 3 breakout sessions:**

**MPD subcommittee:**

• Continue processing the comments associated to 92S
• 74 outstanding comments on 92S.
• Conference call will be coordinated before Christmas to finalize outstanding comments

**DGD subcommittee:**

• No further progress on the CML best practice documents
• Subcommittee members joined other subcommittee’s sessions during the 3rd day.
• Worked on a proposed schedule for next

**Gas in Riser subcommittee:**

• Initial thoughts on how to present/deliver the subcommittee work to the industry:
  o API Standards
  o API technical report
  o API bulletin
  o IADC Articles
  o IADC announcements alert (notification and request for industry support)
  o Appendix to IADC Deep Water Well Control current guidelines
• Ongoing discussions
  o How to communicate to the industry why is this important
  o What can be done about this
  o Subcommittee members task/role designation

**HSE / Training Subcommittee:**

No representatives present.

**11:30 – 12:15  Other Topics and Meeting Wrap Up**

Paul Sonnemann introduced to the rest of the committee what the Gas in Riser subcommittee has been working on and how they are planning to proceed:

**Why this subcommittee work is important:**

  o Awareness of problem due to frequency of events (versus perception of low
frequency/high consequence)
  ▪ “An estimated 20% of gas influxes in deepwater wells make it above the BOP”
○ Awareness of possible problems caused by ongoing implementation of equipment without clear basis of design (no standard guidance docs).
○ Awareness of inadequacy of existing response options for management of any gas delivered to a rig during the drilling process (contributed to by lack of thorough understanding of gas behaviors under various containment and removal processes)
○ Awareness of commons misconceptions of gas behavior in isolated (possibly) risers (leading to expensive, but ineffective practices focused on avoidance which may tend to inhibit acceptance of deepwater MPD practices)
○ Increasing industry activity focused on this topic.

What are we preparing to accomplish?

Draft mission statement for subcommittee: Subcommittee will provide recommendations to the industry with regards to safe handling of hydrocarbons in a marine riser above a subsea BOP. The work will address and contribute to provision of:

1) Improved understanding of underlying physics (including new principles)
   a. Propose practical calculation methods (for different fluid types)
2) Seek opportunity for validating field tests
3) Develop/assess procedures and equipment requirements to be published (most likely via IADC or API)

Who will do what?

Work plan; Define relevant work issues and assign initial tasks potentially including:

  a. Solicitation of interest and resources (including field trial opportunities)
  b. Riser as a pressure vessel
  c. energy/flow behaviors; collect/distribute current modeling efforts
  d. static closed volume modeling
  e. Riser content definition

Define optimal deliverables

  a. IADC Deepwater well control guideline addendum
  b. API TR or Bulletin
  c. API RP
  d. Conference workshops
  e. Assessment of existing curriculum content/need for supplementation
  f. Published papers/presentations
Initial work on each topic has been assigned to individuals and will be coordinated prior to next scheduled UBO/MPD Committee meeting in Q1 2017 in Rio.

Per Cato thanked Maersk Training for arranging and sponsoring the meeting, and adjourned the meeting.

**Attendance:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Company Name</th>
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<tbody>
<tr>
<td>Brian Piccolo</td>
<td>AFGLOBAL</td>
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<tr>
<td>Jay Bruton</td>
<td>AMERICAN BUREAU OF SHIPPING</td>
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<td>Oscar Gabaldon</td>
<td>BLADE ENERGY PARTNERS</td>
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<td>Stan Christman</td>
<td>CHRISTMAN CONSULTING</td>
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<td>Borre Fossli</td>
<td>ENHANCED DRILLING</td>
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<td>Dale Walden</td>
<td>EXXONMOBIL</td>
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<td>Christopher Bernard</td>
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<td>Leesa Teel</td>
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<td>Konstantin Puskarskij</td>
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<td>Jacob Petz</td>
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<td>Eric Brown</td>
<td>MHWIRTH</td>
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<td>Tracy Mossman</td>
<td>NEXEN ENERGY SERVICES</td>
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<td>Frédéric Jacquemin</td>
<td>PACIFIC DRILLING</td>
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<td>Marcos Tolfo</td>
<td>PETROBRAS</td>
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<td>Micah Spahn</td>
<td>PRUITT TOOL &amp; SUPPLY</td>
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<td>Martyn Parker</td>
<td>PRUITT TOOL &amp; SUPPLY</td>
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<td>Antonio Torrealba</td>
<td>REFORM ENERGY SERVICES CORP</td>
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<tr>
<td>David Postel</td>
<td>REGIONAL MARINE &amp; ENGINEERING SERVICES PTE LTD</td>
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<tr>
<td>Paul Sonnemann</td>
<td>SAFEKICK</td>
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<tr>
<td>Giacomo</td>
<td>Caleffi</td>
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