MAINTENANCE COMMITTEE
MEETING MINUTES

11 January 2017

Location: IADC - Crown Center 1 & 2 Conference Rooms

Call to Order / Agenda:

The committee was called to order and the attendees were welcomed by the IADC Maintenance Committee Chairman, Frank Breland (Diamond). The Chairman provided an overview of the proposed agenda for this meeting.

A building security and safety briefing was given by Mr. John Pertgen (IADC).

Introductions:

Each attendee provided an introduction of themselves and their company affiliation.

IADC Antitrust Policy and Guidelines and Committee Mission Statement:

The Chairman provided a review of the Committee’s Mission Statement and the IADC Antitrust Policy and Guidelines and stated that the full policy is available on IADC’s webpage.

Regulatory Review / Update:

The API regulatory update was covered by Holly Hopkins (API), who was participating by phone. Mr. Pertgen provided a few additional highlights from the IADC Federal Summary, as well as a couple International points of interest (Polar Code and Ballast Water Convention) that were not covered in the API update.

John Pertgen (IADC) provided the Committee with information about the two IADC-published semi-annual regulatory reports on the revised IADC website:

1. International Standards Activities affecting the Offshore Oil and Gas Industries --
   This report provides a handy reference to the standards development activities of various organizations (e.g., the International Maritime Organization, International Labor Organization, the International Organization for Standardization, and various international trade associations).

2. Federal Regulatory Actions Impacting the Offshore Industry --
   This report provides a reference summary that reflects the regulatory actions, announced in the Federal Register by U.S. governmental agencies, which may affect operations in the oil and gas industries.

(Note: Both reports are available at: http://www.iadc.org/advocacy/#reports)

A list of most of the highlighted areas that were covered at this meeting is included at the end of the minutes. (Note: This list includes a couple additional items added by API after the meeting).
Class Society Issues

*Leg to Spud Can Inspection on Self-Elevating Units* was given by John Preston (ABS). His presentation covered the following points:

- Can We Reduce the Extent and Frequency of NDT without Increasing Risk
- ABS Expertise with Jack-up Units
- Possible causes of leg and spud can fractures
- When can damage be expected
- Engineering input
- Reducing Examination without increasing risk
- Extent of Intermediate UWILD for Low Risk Units

Please contact John Preston (ABS) [jpreston@eagle.org] if you have any questions regarding his presentation or wish to obtain a copy of it from him.

[Meeting was closed to drilling contractors only at this point]

Caterpillar

Robert Froebel (CAT) provided an update for all the issues that CAT is working on for our industry.

Please contact the CAT representative via email address if you want a copy of his presentation, have any questions or want to get clarification on any issues regarding your CAT equipment. [Froebel_Robert@cat.com]

National Oilwell Varco

Ian McWilliam provided an update for all the issues that NOV is working on for our industry. He discussed the following topics:

- Optimizing Customer Interface
- FMECA (Failure Mode Effects and Criticality Analysis)

Please contact the NOV representative via email address if you want a copy of his presentation, have any questions or want to get clarification on any issues regarding your equipment. [Ian.McWilliam@nov.com]

**ACTION ITEM:** Provide more information regarding continuous recertification for top-drives

Lunch

**AFTERNOON SESSION**

Maintenance Committee plans for 2017 by the Committee Chairman

- More contractor participation
- Selection of additional OEMs for partnership alliance
- Improvement to our information sharing
- Addressing regulatory issues
- More interaction by the committee with Operators and other IADC committees
- More contractor participations
- Submittal of more abstracts
- More presenters at conferences
- How do we improve our current partnerships?
- Sharing of learning and improvements to a broader audience
- Plan for a meeting to involve foreign office-level technology and possibly alternate times for their participation

**ACTION ITEM**: ADD IN TO NEXT MEETING NOTICE - Each contractor bring in a lesson’s learned or a best practice or area of concern

One member recommended that we send out specific survey questionnaire about the meeting, i.e. what did you think about this topic. What was good or bad about it. What do we want to discuss at next meeting? What topics would be of common interest to the committee members? (failure analysis, failure reporting, to OEMS - how do you capture failures from the drilling contractors? Report failures of common interest)

**FOCUS FOR 2017** - The Chairman stated that the committee’s focus for this year should be:

- Reliability and failure reporting
- Functional taxonomy

The Chairman related a 2016 situation on board one of his rigs. (miscommunication issue - same error was repeated within 24hrs)

**Open Forum**:

Various members of the group raised the following points of interest regarding their particular issues:

- Fingerboard related issue- have already dropped two strings. Fingerboards issue- put new washers in and we found pipes dropping out of rack (The washer requirement was per an NOV bulletin).

- Failures of O-ring plugs

- Sheave Bearing (Chinese OEM) failures

- Stress cracks on knuckle boom crane slew bearings

- Bulletin dealing with fiber optic switch failure

**Adjourned**: 1410hrs

**ACTION ITEMS**:

**ITEM #1**: NOV to provide more information regarding continuous recertification for top-drives

**ITEM #2**: IADC to add in to next meeting notice that - “Each contractor should bring in a lesson’s learned or a best practice or area of concern to be discussed at that meeting.”

**Lunch sponsors for 2017 committee meetings held at IADC will be**:

<table>
<thead>
<tr>
<th>Date</th>
<th>Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 January</td>
<td>NOV</td>
</tr>
<tr>
<td>12 April</td>
<td>CAT (suggested)</td>
</tr>
</tbody>
</table>
API ACTIVITIES

API S53 Blowout Prevention Equipment Systems for Drilling Wells
The addendum to the 4th edition was published on July 8, 2016. The last meeting has held November 17, 2016.

The task group is now: reviewing all design requirements in API 53 for retention or move into relevant API Specification Documents; completing Section 6 & 7 comparison for consistency; reviewing all informative statements throughout the document for retention; and beginning revision work for 5th Edition including revising proposed Assessment Tool. The next meeting will be January 16, 2017 at the API Winter E&P Standards Conference. Ricky Cummings, Chevron is the chair RCummings@chevron.com

API RP 4G Operation, Inspection, Maintenance, and Repair of Drilling and Well Servicing Structures
There is an active task group within API that is working on modifications to API RP 4G, “Operation, Inspection, Maintenance, and Repair of Drilling and Well Servicing Structures”. This group is working on changes mainly to Level III and IV inspections. Plans are for Level IV inspections to be added for all offshore drilling structures. The task group is looking for more offshore contractors to participate in their meetings, the chair is Anthony Mannering, TM Engineering, PLLC, please contact Anthony if you are interested in participating anthony.mannering@tmengineeringpllc.com or (713) 202-3288. The next meeting is expected mid-March 2017.

API RP 75 Recommended Practice for Development of a Safety and Environmental Management Program for Offshore Operations and Facilities
Sandi Fury, Chevron, SFury@chevron.com and Charlie Duhon, Arena CDuhon@arenaoffshore.com are the co-chairs of the RP 75 revision workgroup. The next meeting is tentatively scheduled for February 14, 2017.

API Specification 16AR Drill Through Equipment Repair and Remanufacturing
A task group has been formed to create a new document on the repair and remanufacture of BOPs, similar to Annex B of 16A. Annex B is being removed from 16A. (Contact Jan van Wijk jan.vanwijk@shell.com or Chris Johnson chris.johnson@nov.com) The 1st edition is expected to publish 1Q 2017.

APIQR has 84 active, certified facilities for API Spec Q2 in 20 different countries (29 out of the 84 certificates have been issued to E&P service companies in the US). We have 42 current applications in 15 different countries
APIQR is working with API SC18, TG5 (the SC18 quality committee’s task group on API Spec Q2) members and drilling contractors to plan and execute beta testing of the API Spec Q2 requirements and audit process with drilling contractors. The beta testing involves a mock audit process to the API Spec Q2 requirements with drilling contractors and it is hoped that this can be accomplished by Summer 2017. The SC18, TG5 work groups continue to work revisions to API Spec Q2; a 2-year extension has been granted to allow the revision process to be completed. The API Spec Q2 user’s guide draft on the intent and use of API Spec Q2 has been developed by the SC18 work group and is currently being balloted.
New API document on Life Cycle Management
A task group has been formed to create a life-cycle management system document for use in conjunction with products and/or standards used in the oil and gas industry. The document should provide the means of identifying the continued compliance of a product to its original and/or current manufacturing and design requirements and the ability to demonstrate product compliance to original and/or current product standards and industry/product-specific technical and regulatory requirements throughout the product lifecycle. The document is currently under review and should be published in Q1 2017. (Contact Mike Briggs, Cameron Michael.Briggs@c-a-m.com)

USCG ACTIVITIES

- USCG Industry Day
On November 1, 2016, the USCG hosted an industry day at USCG Sector Houston to coincide with the NOSAC meeting. The next Industry Day will likely be held in New Orleans in the spring, also to coincide with the NOSAC meeting.

- Well Intervention (WI) Vessel Policy
BSEE and USCG have engaged industry through OOC to gain a better understanding of Well intervention operations. OOC has been working to develop a common understanding and ultimately an industry best practice framework. The NOSAC Subcommittee also issued their final report at the November 2 NOSAC Meeting. Subsequently, the USCG issued Marine Safety Information Bulletin 15-16 to owners and operators of vessels engaged in OCS activities in order to detail the NOSAC report with recommendations to the Coast Guard for addressing risks associated with Well Intervention activities conducted on the OCS.

- National Offshore Safety Advisory Committee meeting (NOSAC)
The last meeting was held November 2, 2016 in Houston. The WI Vessel Policy Subcommittee presented their final report and OOC presented on the same topic. Work will continue on this and SMS. The next meeting will be May 17, 2017 in New Orleans.

- USCG Risk-based Inspection Resource Allocation Methodology
On August 5, 2016, the USCG published a FRN announcing the availability of the interim risk based resource allocation methodology for inspections of certain OCS units in the Eighth Coast Guard District (D8) area of responsibility (AOR). According to the notice, the interim methodology will be implemented for a five-month trial period beginning August 1, 2016. After the trial period, the methodology will be finalized within D8 and submitted to Coast Guard Headquarters (CG–CVC) for consideration at the national level. IADC and OOC submitted comments to the USCG.

- Lifesaving Inspection and Emergency Evacuation Drills on Manned Facilities (including MODUs) on the OCS
The USCG issued a policy letter on October 31, 2016. The policy letter provides guidance to Eighth District inspectors for verifying compliance with reference (a) regarding lifesaving equipment and emergency evacuation drills on manned facilities on the OCS. The term manned facility includes MODUs attached to the OCS.

- USCG Pending Rules
Interim Final Rule Revision to TWIC Requirements for Mariners (03/17)
BSEE ACTIVITIES

-BSEE Offshore Well Control Rule
The final rule was announced on April 14 and published on April 29, 2016. Most of the rule became effective on July 28, 2016. API, IADC, OOC, NOIA, IPAA, PESA and USOGA sent BSEE a letter on May 27, 2016 asking for clarification and/or interpretation from BSEE. BSEE has been providing that information on their website at: https://www.bsee.gov/site-page/well-control-rule-by-date The joint-industry trades continue to work to resolve issues associated with the rule and its implementation, including developing information for the Trump Administration.

-BSEE Bolt Report, Safety Alert & API Response

August 11, 2014 BSEE released a technical Review of Connector and Bolt Failures following the failure of connectors and bolts used in critical equipment. The technical review, entitled Evaluation of Connector and Bolt Failures, was completed by the bureau's Quality Control-Failure Incident Team (QC-FIT) and submitted to BSEE Director Brian Salerno. API held a Technical Session during the API Exploration and Production Winter Standards Meeting in New Orleans on January 27, 2015. After the Technical Session, a multi-segment task group was formed to review the detailed recommendations in the report and determine next steps. The final report was shared with BSEE and is now being implemented.

-BSEE held a public forum on offshore connector equipment failures, including connector bolt failures that have occurred on the OCS on August 29, 2016, in Washington, DC. API presented at the Forum.

In addition to the work of the multi-segment task group, API met with BSEE on March 31, June 22, September 20, and October 7, 2016, to discuss the Safety Alert. And provided BSEE the 1st quarterly update to track the voluntary industry actions we have committed to to improve subsea BOP bolting. Work continues with BSEE on subsea BOP bolting.

BSEE Pending Rulemaking
Final Incorporation of Updates of Crane Standards (12/16)
Final Rule Pipeline Decommissioning Cost Reporting (12/16)
• Proposed Rule Aviation Regulations (03/17)
• Proposed Rule Oil-Spill Response Requirements (07/17)
• Proposed Rule Pipelines and Pipeline Right-of-Way Safety (09/17)

OTHER ACTIVITIES

OESI
• OESI to host BSEE Technology Assessment Program (TAP) Forum, February 17, 2017, at the Doubletree at IAH, 15747 John F Kennedy Blvd, Houston, TX 77032. OESI will support the BSEE, as they conduct their 2017 public review of representative TAP projects. Register at http://bit.ly/2hnycsB Agenda can be found here

Attendance:

<table>
<thead>
<tr>
<th>Name</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>PRESTON</td>
</tr>
<tr>
<td>Robert</td>
<td>Froebel</td>
</tr>
<tr>
<td>Frank</td>
<td>Breeland</td>
</tr>
<tr>
<td></td>
<td>ABS</td>
</tr>
<tr>
<td></td>
<td>CATERPILLAR OIL &amp; GAS</td>
</tr>
<tr>
<td></td>
<td>DIAMOND OFFSHORE</td>
</tr>
<tr>
<td>Name</td>
<td>Last Name</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Ryan</td>
<td>Berger</td>
</tr>
<tr>
<td>Douglas</td>
<td>Cooper</td>
</tr>
<tr>
<td>Charles</td>
<td>Nielsen</td>
</tr>
<tr>
<td>John</td>
<td>Pertgen</td>
</tr>
<tr>
<td>Charkapani</td>
<td>Mandava</td>
</tr>
<tr>
<td>Ian</td>
<td>McWilliam</td>
</tr>
<tr>
<td>Denis</td>
<td>Adams</td>
</tr>
<tr>
<td>Josh</td>
<td>Westling</td>
</tr>
<tr>
<td>Richard</td>
<td>Sporn</td>
</tr>
<tr>
<td>Mike</td>
<td>Anatra</td>
</tr>
<tr>
<td>JR</td>
<td>Chen</td>
</tr>
<tr>
<td>Robert</td>
<td>Urbanowski</td>
</tr>
<tr>
<td>Jamie</td>
<td>Vargas</td>
</tr>
<tr>
<td>Kevin</td>
<td>Warren</td>
</tr>
<tr>
<td>Bobby</td>
<td>Warren</td>
</tr>
<tr>
<td>Jeff</td>
<td>Marshall</td>
</tr>
<tr>
<td>Marc</td>
<td>Morin</td>
</tr>
</tbody>
</table>