



WCI Board of Directors Meeting
18:00-20:00 CEST, Tuesday, 18 June 2019
NH Milano Hotel, Milan, Italy

Participants:

Antony Quinn, IIWCF
Kim McHugh, Chevron
Jason McFarland, IADC
Lee Womble for Jean-Francois Poupeau, Schlumberger
Leesa Teel, IADC
Leif Nelson, Seadrill
Lyndol Dew, WCI Chairman
Mark Denkowski, IADC
Mike Holcomb, Patterson-UTI
Mike Nuss, Ensign Energy Services
Joe Rovig, NOV
Olav Skar for Cindy Taff, Shell
Pierre Kriessels, Shell
Roddie Mackenzie, Transocean
Simon Drew, KCA Deutag
Steve Brady for Carey Lowe, Ensco Rowan plc
Steve Kropla, IADC
Xavier Rouzeaud for Eric Daflon, Total

1. Introductions & Antitrust Statement

Mr. Dew delivered welcoming remarks and noted the meeting fell under the IADC Anti-Trust Policy & Guidelines. Mr. Dew conducted roll call and a quorum was confirmed. He thanked the Board for their participation.

2. Presentation – CBM Programs & Continuous Certification of Well Control Equipment

Mr. Rovig delivered an overview of Condition-Based Maintenance (CBM) programs and continuous certification. CBM is an approach that uses design data, facts about equipment, in house knowledge, inspections and analysis to establish equipment health benchmarks and requirements for equipment maintenance. Data may be sensory or collected by inspection, analyzed by AI and or a human with equipment expertise.

CBM may be defined as a transition period from Preventive (Calendar Based Maintenance) to autonomous maintenance, by using different “smart” / modern technologies. These technologies can be condition monitoring systems, Mathematical modelling, machine learning, AI, risk based inspections etc. The major CBM deliverable is annual CoSC (Certificate of service continuous).

CoSC is supplied based on established certification process founded on BPM model and follows OEM Quality plan. Equipment criticality analysis done by the engineering team is one of the main inputs to the process. RCM analysis defines and describes critical equipment areas, mechanisms of failures, monitoring methods and maintenance.

CoSC will renew annually as part of the program. Intrusive inspections (CAT IV) are triggered on condition or on utilization. Less intrusive inspections are triggered on condition or by time schedule (CATIII) and executed accordingly.

CBM utilizes human or machine based analysis to transform data to information. This information is used to establish most appropriate maintenance requirements for the equipment, based on its observed health.

3. Report – Human Performance in Well Control Workshop & Path Forward

Mr. Kriessels presented an overview of the workshop held on 4th March in The Hague and activities since that time. Works is now underway to develop a website titled “Wells in Mind” as repository for human factors resources. A steering group that organized the workshop is now working to develop this website. IADC is involved in the steering group. The website will be patterned after the successful DROPS website, and tentative plans are to unveil the website in a meeting to follow the next DROPS meeting in Aberdeen on 17th September. Mr. Skar asked how other can get involved. Mr. Kropla will take names of those that wish to participate. Following the DROPS model, local and regional work groups are planned in addition to the standing steering committee.

4. Discussion – Chemical Safety Board Report Oklahoma Incident

Mr. Dew led a discussion of the recently published report. Mr. Holcomb provided some background and detailed some of the internal projects and changes implemented since the incident. He noted while the executive summary was very well written, he disagreed with some of the findings. He expressed willingness to update the Board from time to time on further progress. He noted collaboration with API moving forward. Mr. Dew appreciated Mr. Holcomb’s willingness to share information with the Board and noted this topic would become a standing agenda item for future meetings. The Board agreed more work could be done in this regard and will apply resources as needed. The Board discussed convening a sub-committee to study the report further and make recommendations. Ms. McHugh volunteered Marcel Robichaux to participate. Mr. Drew,

Mr. Nuss and Mr. Brady pledged assistance as well from their companies. Mr. Holcomb agreed to spearhead the sub-committee. Mr. Holcomb stressed the importance of collaborating with API and with the IADC Well Control Committee. The Board discussed crew competencies and challenges for drilling contractors as they work for a variety of customers. The Board also discussed Underbalanced Operations training programs and the curriculum being developed in conjunction with WellSharp. Mr. Dew noted once the Board members had had an opportunity to review the report a role for WCI could be determined.

5. Summary – 2018 RAPID-S53 Annual Report

Mr. Kropla gave an overview of the RAPID-S53 database and referenced the pre-read materials. The Annual Report is still being compiled. Initially access will be given to members only and later access will be available on the web to outside parties. Mr. Kropla reported that no JIP members experienced a loss of well bore integrity in 2018. He noted the first report was published in 2017. The reports will now be compared year

over year. Component data results are sent directly to system integrators now, but a pilot test is underway to send to specific sub-component manufacturers.

6. Follow-up – WCI Whitepaper/Competency & Training Activities

a. WEC CTSC Review of IOGP 476 – Olav Skar, Shell

Mr. Skar presented an overview of the 476 review. He noted many companies have struggled to implement 476. The review provided an opportunity to revise some challenging aspects and aid implementation. Periodic reviews will take place moving forward. Mr. Skar noted several changes including changes made to the glossary, Level 5 renaming, more detail provided to Levels 3 and 4, and enhanced wording on continuous learning to name a few. Mr. Nelson noted contractors were not represented on the review work group. He asked for more buy-in from the contractors.

b. IWCF Follow-up & Developments – Antony Quinn, IWCF

Mr. Quinn reported on progress made with IWCF and compliance with 476. He noted all recommendations within 476 have been delivered. He noted 476 is viewed as a minimum standard and all 5 levels have been implemented. He reported on a recent e-assessment award where IWCF was acknowledged for their integration of technology. He noted the importance of collaboration and looks ahead to new challenges and overcoming obstacles.

c. WellSharp Follow-up & Developments – Mark Denkowski, IADC

Mr. Denkowski reported on IADC's response to the white paper. He noted IADC has adhered to 476 as closely as possible with the assistance of a variety of input from industry advisory panels. He noted the addition of a well servicing suite in April 2018. He noted the development of KREW, a program to address continuous learning. He reported on progress made to ensure personnel were attending the appropriate level of training for their respective positions. He reported on the addition of a CRM Facilitator course to WellSharp Plus. Mr. Denkowski reported on plans for the MPD/UBO course, which will be a 4-hour bolt-on. A workgroup has been formed to complete the course. Additionally, Mr. Denkowski presented an overview of the Subsea Technician Competency Assurance program, which was successfully brought in-house at IADC. A test database will be developed for the program, with support from BP, Chevron, and Shell. The program launch is expected at year end. Mr. Denkowski also noted the importance of collaboration and pledged to set future meetings with IWCF.

7. Discussion – Future Activities

Mr. Dew led a discussion of future activities for the Board. The CSB report will be added to the agenda. This report will certainly raise new initiatives. Mr. Skar suggested a presentation around where industry might be in 5 years' time with respect to well control. Mr. Dew noted the National Academy of Science & Engineering and access to grants for assistance with future projects. Mr. Rouzeaud noted Total may have a digital well control incident he might share. The Board also discussed an Equinor incident in the North Sea that might be shared.

8. Date & Venue of Next BOD Meeting

- 09:00 CST, Tuesday, 5 November, Hyatt Regency Hotel, Austin, Texas

9. Any Other Business/Adjournment

With no other business before the Board, the meeting was adjourned by Mr. Dew. Mr. Dew thanked the Board for their participation.