



# Well Control Committee Meeting

## 21 May 2014

**Host: IADC**

10370 Richmond Ave., Suite 760, Crown Center 1-2  
Houston, Texas 77042

### MINUTES

<b>8:00 – 8:05</b>	<p><b>Welcome</b> <i>Mike Garvin, Patterson UTI, Committee Chairman</i></p>
<b>8:05 – 8:10</b>	<p><b>Facility Orientation/Safety and IADC Antitrust Guidelines &amp; Policies</b> <i>IADC staff and Mike Garvin</i></p> <p>Mike Garvin explained IADC's Anti-Trust Policy and Mission Statement.</p> <p>The group reviewed the purpose of our meetings and determined that "it's all about safety, being good stewards, and championing sensible regulation."</p>
<b>8:10 – 8:20</b>	<p><b>Attendee Introductions</b> <i>Mike Garvin</i></p> <p>After introductions, Mr. Garvin discussed the fact that many of the meeting attendees are focused on training and explored why training is so important.</p>
<b>8:20 – 8:30</b>	<p><b>Lessons Learned</b></p> <p>One attendee discussed having recently reviewed safety alerts that have been issued through industry websites. He noted that many incidents occur because the personnel missed one step in a process. (Examples of these incidents can be found on the IADC and other websites. OGP is currently creating a database of near-misses.) Attendees concluded that personnel need to be trained to avoid making mistakes that others have made.</p> <p>A lesson learned was presented in regards to training: One company has discovered that a large percentage of students renewing their well control credentials cannot pass the pretest for the course. The employer, therefore, believes that a 2-year renewal cycle alone is inadequate and the training needs to be supplemented with self-study in the intervening time. Attendees agree that if such supplemental efforts are not mandated, they will not happen except in isolated cases. Some companies address this issue by requiring employees (in the intervening years) to prove their competence; if an employee cannot pass a competence assessment in the field, the employee is required to complete additional training. There is a difference, however, in such requirements between onshore and offshore companies.</p> <p>It is agreed that, if we don't improve training retention as an industry (thereby controlling our destiny), then regulations and legislation will mandate that we make improvements. Mark Denkowski mentioned discussions about requiring CBTs in a future phase of the WCI efforts.</p> <p>Brenda Kelly showed attendees how safety alerts are recorded on the IADC website. These alerts can only be effective if companies review them and learn from them. Some companies incorporate these alerts in their safety briefings in the field.</p>

<p><i>Idea for Future Discussion</i></p>	<p>Attendees discussed the usefulness of well control manuals and the need for a standard to follow in developing these manuals. There is an opportunity to improve this process for land operators. The group discussed the value of writing a standard for bridging documents, but there is some concern about setting a standard that says what these documents should look like. The group does agree that it would be valuable to say that each rig should have a bridging document, but not what it looks like.</p>
<p><b>8:30 – 8:45</b></p>	<p><b>Review of Action Items</b> <i>Mike Garvin</i></p> <p>Action items still outstanding include the following:</p> <ul style="list-style-type: none"> <li>• Members need to get more involved in the regulatory work. One attendee suggested that participation in the WCC should be contingent upon participation in regulatory efforts. API requires such participation in order to have voting rights on their committees. Employers need to decide to populate these regulatory groups in order for this to happen. IADC has enough clout to develop positions and present them through representatives. As a whole, WCC members want to get their organizations leadership to contribute resources to these efforts. A focus group could be formed to investigate methods.</li> <li>• Attendees discussed adjusting the WCC mission statement to include well servicing.</li> <li>• Jason Morganelli (ENSCO) has been nominated as vice chair.</li> <li>• Two KSA workgroups (Technical Maintenance and Marine Operations) continue to need more participation.</li> <li>• The Drilling Contractors need to read Standard 53. <b>Action Item:</b> Mrs. Kelly will post the Compliance Checklist for API Standard 53 (provided by Andy Frazelle) to the IADC website (WCC page). There is still time for members to provide feedback on issues identified in Standard 53. The group discussed where the idea for 5-year certification of equipment (e.g., BOPs), which is not required by Standard 53 but has been picked up by regulators because API is recommending a 3 to 5 year inspection of BOPs. “Recertification” is never used in Standard 53, and “certification” is used only three times and all in relation to quality assurance. Anyone can send comments to API about the standards, and the committee responsible for each standard is given all the comments. The committee can create an annex for the standard based on comments.</li> <li>• Members are encouraged to go to the Texas Railroad Commission (TRC) website to sign up for alerts on these issues. Note: Joe Hurt is the IADC liaison for the TRC. Alex Sas-Jaworsky provided the contact information, and it is published in the minutes of the last meeting.</li> </ul>
<p><b>8:45 – 9:45</b></p>	<p><b>Panel: BOP Controls—Question and Answer Session on Reliability of Today’s BOPs and Glimpses into the BOPs of the Future</b> <i>Frank Gallander, Chevron, Moderator</i></p> <ul style="list-style-type: none"> <li>• Mel Whitby, Cameron</li> <li>• Bill Carbaugh, GE</li> <li>• Frank Springett, NOV</li> </ul> <p>The group discussed reliability studies that have been conducted regarding BOPs since Macondo. In addition to reliability studies, there are studies regarding operability and availability. Currently, a BOP joint industry project (JIP), sponsored by API, is developing a charter. A BOP reliability performance study is in the early stages. Another JIP at OGP is looking at sheering performance with respect to maintaining and setting up a database on sheering performance. DNV is also kicking off a study on the performance of condition-based maintenance equipment. The American Bureau of Shipping (ABS) has completed a study, and the report is now available.</p> <p>The group discussed findings of the studies so far and what areas require more focus. The primary focus is around control systems and leaks, especially regarding leaks on subsea stacks (e.g., elastomers and hoses). Today, we are typically looking at two-stack systems.</p> <p>It is important to distinguish between reliability and perfection when talking with the personnel at the rigsite. They are currently expecting perfection, and the equipment is not designed for the level of</p>

scrutiny sometimes applied. Some companies are now ordering multiple stacks because they expect perfection in order to use the existing stack; however, the bigger problem is perhaps the increasing frequency of testing and the quantity, which shortens the overall time span between maintenance and can affect reliability. Designing standards that address this issue is difficult.

Not everyone agrees on the definition of reliability. A standard definition is needed. Adding redundancy may reduce the potential for failure, but only up to a certain point.

How do we demonstrate reliability? When reliability increases (and can be demonstrated), we can reduce the complexity of the issue. We do need to focus on defining our terms. There is a huge effort to obtain more and better statistics so we can make better decisions. Example: If the airline industry were to follow our same reliability definition currently, no plane would take off without an antigravity device. It is true that the airline industry has similar issues with hose leaks, but those hoses are typically inspected every 12 hours whereas our subsea systems do not lend themselves to inspection of leaks.

The group then discussed how to simplify the systems. The more components we can remove from the subsea stacks, the greater reliability will be. We have to work with the systems that are operating now until we have been able to simplify all the systems that are out there in use. Future BOPs need to be simpler—fewer parts, fewer fail points.

On a rig recently, it was discovered that the operating system had no virus protection software, and a virus had gotten into the BOP's operating system. The assumption was that, because it wasn't connected to the rest of the world, they were safe, but when another machine is connected to it, a virus on that machine can infect the other. We may be vulnerable and may become more vulnerable because there is a push for real-time data transmission from these systems. This data (read-only at present) will be protected by the local firewall. We do need to bear in mind that there is a threat and not assume we are safe. Sabotage or terrorism should be a concern with these systems.

There are two forms of reliability data. One type (about cycles at the rigsite) is not available. The other (testing at the manufacturer) is available and could be used if we make a case for it. However, this just shows how many cycles we can run, not the time between cycles. We need to make the case that we can test less frequently now that reliability has improved. Before 2010, the regulators were already considering going to a 21-day testing cycle based on reliability. That effort was postponed because of Macondo.

API has not specifically addressed predicted outcomes (analytics) and how this may improve reliability. The new edition of API 16A is going toward a more performance-based system, a minimum requirement for testing cycles. There are changes being established in the performance criteria. The BOPs have been essentially proven reliable, but the control systems (anchoring) have not been as reliable.

We are seeing more function loggers, more analytics tracked in the systems. We have more precise measurements (e.g., elastomers). Whether or not this is embraced by the industry will depend on our documentation and diagnostics to make it easier to manage alarms and tie them into maintenance systems to improve decision-making processes. The assumption has been that, if you have two systems, they must both always be functional. How we compile and present the data can help us to flag systems for maintenance. We prefer to stay away from reactive maintenance and move toward condition-based maintenance.

The primary causes of reliability failures are control systems and MUX systems. We think we know what the critical information is, but we have not pursued a standard method/format for reporting failures. A standard failure report form is needed. There is an excellent failure-reporting system, but we don't take the data and compare it in all the right ways. We need to be able to compare failures to real-time data about the system's use. All of the limits require data in order to know what the parameters should be. We also need to bring the environments and other use factors into the equation of maintenance schedules.

API Committee 16E is addressing the need for an industry composite of manufacturer's recommendations about maintenance and equipment use. The industry has not seen an effort to standardize vocabulary. This, too, is needed.

**9:45 – 10:00 Break**

<p><b>10:00 – 10:15</b></p>	<p><b>Well Control KPIs</b> <i>Andy Frazelle, BP</i></p> <p>Mr. Frazelle discussed how we measure the effectiveness of our well control efforts when “not all well control incidents are created equal.” If we look just at the numbers, then we are missing the point. We may be creating other issues by avoiding ALL incidents. We need to develop different KPIs with an ability to measure severity. No two companies measure the same things. How can we measure the performance of the new WCI? What is our group doing to make the industry safer? Where is the data to support that we are improving well control? There is no data across the industry. Is WellCAP better than IWCF? Does such data exist? Frazelle wants to put together a group at the beginning of June to investigate these issues in a 2-3 hour brainstorming session. <b>Action Item:</b> A signup sheet was circulated. Mr. Frazelle will develop a distribution list and send out an invitation to this meeting based on participants’ availability. One attendee said his company has developed eight KPIs on this topic.</p>
<p><b>10:15 – 10:30</b></p>	<p><b>WCI Update</b> <i>Cason Swindle</i></p> <p>Cason Swindle presented progress on WCI efforts. The WCI Executive Board (representing the whole industry) met last month. They discussed what problems we are trying to solve and what the scope of our efforts should be. They decided we need a unified industry voice for well control performance improvement for ourselves and for regulators, and we need to ensure that we are all measuring the same things. We need to set metrics for performance improvement. The Board decided the scope should be to improve human performance of well control, but they still had some discussion about what we mean by “human.” They discussed equipment (BOPs) and how that works into our scope.</p> <p>They want to create a Well Control Efforts Map that demonstrates what companies are doing to improve well control performance—to bring all that information together to see where efforts overlap and where there are gaps. There is some great work being done all over the world that we have not even seen yet. Regulators don’t know what the industry is doing regarding well control. They are specifically asking to see what we are doing because the efforts are not all visible or communicated. Mr. Swindle requests that the WCC members tell him what they are doing (that is not proprietary information).</p> <p>The other result of that meeting was that all members of the Board are in favor of the training standard. Malcolm Lodge reviewed the high-level information about the new standard.</p> <p>The new standard, some of the new curriculum, and a set of FAQs were posted and members were emailed a notice and request for comments. To get on the committee’s distribution list, contact Brenda Kelly (brenda.kelly@iadc.org). Comments will be addressed by the Advisory Panel.</p> <p>The first four course levels will be implemented in Phase 1. The Engineering level has not yet been written, and the WCI is looking to the companies who have developed similar internal programs to assist in this effort. This level will be implemented sometime in 2015. We have also focused only on the Drilling Operations training track. Other tracks will be addressed in 2015 and beyond.</p>
<p><b>10:30 – 10:45</b></p>	<p><b>Industry Groups Update</b></p> <p>Two attendees provided brief reports on the status of API specifications, recommended practices, and standards. All of the subcommittees need additional support from IADC members. Note: These are international documents/efforts, not just US. See below the bulleted list for additional comments and questions.</p> <ul style="list-style-type: none"> <li>• <u>API Subcommittee 16</u>—Alex Sas-Jaworsky (SAS Industries) <b>NO REPORT</b> <ul style="list-style-type: none"> <li>○ API Spec 16A Specification on Drill-Through Equipment (TG-3).</li> <li>○ API Spec 16C Specification on Choke and Kill Systems (TG-1)—Draft will be available by June.</li> <li>○ API Spec 16D Specification on Drilling Well Control Systems and Equipment (TG-2)—Work is in progress.</li> <li>○ API Spec 16RCD Specification on Rotating Control Devices (TG-6).</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ API RP 16ST Recommended Practice for Coiled Tubing Well Control Equipment Systems (TG-5).</li> <li>○ API RP 16AR Repair &amp; Remanufacture of Drill-Through Equipment (TG-7).</li> <li>● <u>API RP 59</u> (Well Control Operations): Bill Rau (Chevron) <b>NO REPORT</b></li> <li>● <u>API RP 64</u> (Diverter Systems Equipment &amp; Operations): Alex Sas-Jaworsky (Sas Industries) <b>NO REPORT</b></li> <li>● <u>API RP 75</u> (Offshore Safety and Environmental Management Program): Julia Swindle (IADC) <b>NO REPORT</b></li> <li>● <u>API RP 96</u> (Deepwater Well Design and Construction): Scott Randall (PlusAlpha Risk), Bill Rau (Chevron) <b>NO REPORT</b></li> <li>● <u>API Bulletin 97</u> (Well Construction Interface): Scott Randall (PlusAlpha Risk), Bill Rau (Chevron) <b>NO REPORT</b></li> <li>● <u>BSEE</u>: Julia Swindle (IADC) <b>NO REPORT</b></li> <li>● <u>Center for Offshore Safety</u>: Julia Swindle (IADC) <b>NO REPORT</b></li> <li>● <u>International</u>: TBD <b>NO REPORT</b></li> </ul> <p>There will be a presentation on 16C at the June meeting. The ballot has been completed, and comments are being addressed.</p> <p>Although not everyone has a vote on the API documents, everyone CAN review the documents and submit comments. Each company gets one vote, and the voter must be an active participating member of the subcommittee. Voting options are “yes,” “yes with comments,” “no,” or “abstain.”</p>
<p>10:45 – 11:00</p>	<p><b>Update on WCC Subcommittees &amp; Workgroups</b></p> <ul style="list-style-type: none"> <li>● Curriculum Subcommittee – Gary Nance, Chevron</li> <li>● Simulator Subcommittee – Benny Mason, Rig QA <b>NO REPORT</b></li> <li>● Gas in Riser Workgroup – Paul Sonnemann, SafeKick</li> <li>● Barriers Workgroup – Scott Randall, PlusAlpha Risk <b>NO REPORT</b></li> </ul> <p>Paul Sonnemann reported on the Gas-in-Riser Subcommittee's work to calculate the effects of gas in the riser. He provided a quantitative process to illustrate worst-case effects. He referred to the 1998 IADC Deepwater Well Control Guidelines and its well control procedures for BOP cleanout for trapped gas. He asserts that we should periodically review what we teach to determine if there is a more accurate method (e.g., for calculations). He believes we need to provide a better calculation to our trainees. Trainers should focus on the most accurate way of looking at the problems and on putting the issues into perspective because there are some areas that may need more focus than others. How much time are we spending on sweeping stacks? What could we be doing instead? How do we determine the priorities? We need to have ways of evaluating the extent of the problem more accurately. If you want more information about this, contact Paul Sonnemann.</p> <p>Gary Nance provided a brief report on developing/revising the curricula.</p>
<p>11:00 – 11:15</p>	<p><b>Well Control Expertise Survey Results</b> Patty Tydings, IADC</p> <p>Patty Tydings provided a short report on the results of the survey. A total of 95 respondents were received with about 48 of them substantive. <b>Action Item:</b> Patty Tydings resend the survey link and will ensure that the link is also available on the IADC website.</p>
<p>11:15 – 11:30</p>	<p><b>IADC News</b></p> <ul style="list-style-type: none"> <li>● Nominees for 2014 Vice Chairman (Offshore Drilling Contractor)—Brenda Kelly, IADC</li> <li>● Future meetings and Well Control Conference 2014</li> </ul> <p>A new co-chair has been identified, but was unable to be present at this meeting. See name above.</p> <p>Next meetings are 20 August and November 2014. The Well Control Conference will be 2 – 3 December 2014 in Aberdeen.</p>

<p><b>11:30 – 12:00</b></p>	<p><b>OPEN DISCUSSION</b></p> <p>More international involvement on this committee continues to be desirable.</p> <p>Also the Curriculum Subcommittee needs strong feedback from committee members, particularly about how to transition between course levels.</p> <p><b>Action Item:</b> Add an incident case study to the agenda.</p> <p>BP has launched a “well-monitoring” project to ensure that personnel are aware of what they should be monitoring and how to monitor. Andy Frazelle is willing to report on this effort.</p> <p>The group is interested in bringing some personnel in from the field to discuss their issues and to foster a better connection between this group and the field personnel.</p> <p>Future topics of interest:</p> <ul style="list-style-type: none"> <li>• Industry cases</li> <li>• Well monitoring</li> <li>• The disconnect between field and office personnel</li> <li>• Lessons learned from the field</li> <li>• Trip sheets and mud</li> <li>• Flow checks</li> </ul>
<p><b>12:00</b></p>	<p><b>ADJOURNMENT</b></p>

**Attendance:**

<b>Name</b>		<b>Company Name</b>
Mark	Smith	<b>ABERDEEN DRILLING SCHOOLS</b>
Tim	Mournian	<b>ARCHER</b>
Ron	Crotzer	<b>BLADESTONE</b>
Bernard	Levy	<b>BOOTS &amp; COOTS</b>
Lisa	Maple	<b>BOOTS &amp; COOTS</b>
Andrew	Frazelle	<b>BP AMERICA</b>
Jason	Sasarak	<b>BP AMERICA</b>
Mel	Whitby	<b>CAMERON</b>
Michael	Schulenberg	<b>CHECK-6 TRAINING SYSTEMS</b>
Eric	Wright	<b>CHESAPEAKE OILFIELD SERVICES</b>
Gabriel	Barragan	<b>CHEVRON</b>
Gary	Nance	<b>CHEVRON</b>
William	Rau	<b>CHEVRON</b>
Frank	Gallander	<b>CHEVRON</b>
Richard	Dolan	<b>CHEVRON</b>
William	Schafer	<b>CHEVRON</b>
Tim	Thornhill	<b>CONSOLIDATED PRESSURE CONTROL, LLC</b>

Chuck	Boyd	<b>CS INC</b>
Michael	Stormonth	<b>ENVIRONMENTAL RESOURCES MANAGEMENT</b>
Andy	Erwin	<b>FALCK SAFETY SERVICES</b>
Bill	Carbaugh	<b>GE OIL &amp; GAS</b>
Shane	Mendel	<b>HERCULES OFFSHORE</b>
Bob	Burnett	<b>HERCULES OFFSHORE</b>
Karl	Callegan	<b>HERCULES OFFSHORE</b>
Brenda	Kelly	<b>IADC</b>
Mark	Denkowski	<b>IADC</b>
Brooke	Polk	<b>IADC</b>
Patty	Tydings	<b>IADC</b>
Elfriede	Neidert	<b>IADC</b>
Marlene	Diaz	<b>IADC</b>
Larry	Schmermund	<b>INTERTEK CONSULTING &amp; TRAINING</b>
Kris	Wilson	<b>INTERTEK CONSULTING &amp; TRAINING</b>
Ruchir	Shah	<b>LEARN TO DRILL</b>
Frank	Springett	<b>NATIONAL OILWELL VARCO</b>
Chris	McGehee	<b>NOBLE DRILLING SERVICES</b>
David	Dartford	<b>NOBLE DRILLING SERVICES</b>
John	Bottrell	<b>NOMAC DRILLING CORPORATION</b>
Mike	Garvin	<b>PATTERSON UTI</b>
Raymond	Hortness	<b>PRECISION DRILLING OILFIELD SERVICES CORP</b>
Johnny	Richard	<b>RIG QA INTERNATIONAL INC</b>
Victor	Fleming	<b>ROWAN COMPANIES PLC</b>
Paul	Sonnemann	<b>SAFEKICK</b>
Cheryl	Francis	<b>STATOIL</b>
Earl	Dietrich	<b>WEATHERFORD</b>
Bhavin	Patel	<b>WEATHERFORD</b>
Barry	Cooper	<b>WELL CONTROL SCHOOL</b>
Richard	Leturno	<b>WILD WELL CONTROL INC.</b>
Rich	DeBuys	<b>WILD WELL CONTROL INC.</b>