



IADC Well Control Committee
Meeting Minutes
21st September 2016
IADC Crown Center
Houston, TX USA

Contractor roundtable

An informal discussion of drilling contractors was held prior to the Well Control Committee meeting. Key topics discussed included the following:

- Response from TRRC to questions raised by IADC
- Rig Utilization
- Fleet modernization in the downturn
- Lessons learned in and air and water kick during Haynesville redevelopment
- The importance of ensuring igniter in flare boom is off if it is not being used
- Offshore blowout discussion in API DPOS
- Ensuring SPCC plans are properly stamped as federally required
- Types of well control equipment requested by operators
- Operators requiring complete compliance with API S53
- BLM requirements for connections & fittings
- API standards referenced in IADC Drilling Manual

The following were suggested as possible topics for future meetings:

- State references to API S53
- Usability of API 53
- Involvement with API standards development at an early stage
- Upturn in accidents due to inexperienced personnel
- Concerns over labor availability if an upturn occurs
- Process control software to avoid well control incidents
- Effective introduction of automation
- Long-term rig stacking strategies (3 years vs. 1 year)
- Riser failure incidents in recent past

Well Control Committee meeting

Welcome & Introductions

Chairman Aaron Mueller of Independence Contract Drilling opened the meeting and welcomed the attendees. Steve Kropla of IADC provided a building safety briefing and reminded everyone the meeting was subject to the [IADC Antitrust Policy and Guidelines](#). Mr. Mueller asked those present to introduce themselves and their companies.

Mud and Gas Handling Techniques in Deepwater Drilling

David Saul and Charlie Holt of BP gave a presentation titled “Mud and Gas Handling – Conceptual Design.” They stated the purpose was to provide recommendations concerning process safety and risk management procedures for deepwater drilling in the Gulf of Mexico. They noted that many recommendations pertain to the management of free gas events on rigs.

They stressed that a primary issue is free gas, which presents a major hazard when gas is not controlled within primary containment. Current systems are not designed to keep gas within primary containment and away from personnel. In addition, “engineering creep” may have led to unintended hazards. BP has experienced such scenarios, which indicate that all hazards may not be fully understood and addressed.

Reviewing BP’s findings on gas events, while gas in the shaker room at elevated levels is abnormal and potentially hazardous, shaker room exhaust ventilation could also impact other areas on the rig.

Among the gaps identified in contractor procedures for dealing with gas, scenarios were sometimes combined and not specific for the operation, e.g., flowing or non-flowing riser. In some cases, procedures were not reviewed or drilled with crews. Procedures were often not easy to find, even if they were good. Crews were often unaware of the procedures, and some procedures didn’t include integrated activities or operating limits. Often roles and accountabilities were not identified.

BP noted that drilling contractors have been responding well to correct the deficiencies that were noted.

From a process safety viewpoint, free gas hazards have not been addressed from a ‘systems’ design approach in that:

- Gas and mud handling systems are not designed to keep gas contained in primary containment
- Surface equipment may be under-designed for abnormal events
- Limited instrumentation on surface mud and gas handling equipment
- Safe vent capability for all parts of the mud system is not part of the design
- Area classifications are not based on gas dispersion modelling
- Critical equipment, devices and structures are typically not designed to survive explosions.

There is an opportunity to apply inherently safer design (ISD) principles to design out the risk of a loss of containment on the rig by controlling gas within primary containment. ISD is an iterative process, applied to the design and operation life cycle that considers options to permanently eliminate or reduce hazards to avoid or reduce consequences of incidents.

BP will be asking industry to consider this opportunity and provide feedback at a workshop in January or February 2017 to gauge interest in participating in a collaborative industry effort. This would be focused on mud gas handling system design downstream of the BOP for future generation deepwater rigs. Such an effort could result in a study within an industry group or sub-group, research involving industry and academia, or a joint industry project.

WellSharp Update

Brooke Polk of IADC presented a WellSharp update. She reviewed trainee performance figures, noting that course activity was still heavy at the supervisory level rather than the driller level. With almost 32,000 tests taken thus far, the average pass rate for all courses is 93.4%, with an average score for of 84% (the average pass rate includes reassessments.) There are currently 168 accredited providers, and 669 active instructors.

WellSharp instructors now need to pass a knowledge exam. It is similar to the WellSharp student exam, however at a much higher learning level. About 50 instructors have taken the exam, with an overall passing rate of 93.6% and average score of 93. No reassessment is available for the instructor exam.

Ms. Polk stated a test of the WellSharp Portuguese exam had been launched successfully. Translations are currently under way for Spanish, Arabic, and Mandarin exams, with an anticipated launch of January 2017.

It was noted that some providers are having issues printing WellSharp wallet cards with QR codes. Some questioned the necessity of QR codes – it was explained these can be helpful for contractors to verify certificates since they offer a direct link to the IADC WellSharp database. QR codes will also be included on instructor certificates.

Previewing future developments, Ms. Polk stated development is currently planned or underway for WellSharp curricula for an Engineering level course, workover and Completion, coiled tubing, snubbing and wireline operations.

Also under development is an Enhanced Driller level course with a focus on Human Factors. This course will be very similar to WellCAP plus, extending over 4 ½ days. As in WellCAP Plus, the Students must first take and pass a Driller level knowledge assessment. They then go through a series of well control situations as a team. The difference in the enhanced course is that Human Factor (HF) professionals participate on the instructional team. Following every simulation, each team is debriefed on their performance from an HF perspective.

Shear Ram Test Protocol

Ricky Cummings of Chevron gave a presentation on the Shear Ram Test Protocol and Database, a project he currently chairs along with the API Standard 53 work group. He explained that the objective was to develop a standard shear ram test protocol as interpreted from existing industry standards which are universally applied across industry.

He noted that the project came about since no industry shear data available had been available prior to Macondo, which showed an industry need for a shear test database. IOGP, through its Wells Experts Committee BOP Task Force, funded original protocol development.

The purpose was to collect high quality shear ram performance test data from tests using the standard test protocol on BOPs in order to:

- Demonstrate proven results for test protocol(s) for promotion to industry standards
- Create a centralized record of historical shear ram performance data

- Support the ability to quantify hydraulic pressure requirements to shear tubulars and seal for specific well and BOP design.
- Provide greatly increased statistical confidence in the ability of the BOP to shear pipe and seal the well and hence provide input to BOP performance assessments

Subsequently, there was a desire to transfer this protocol to API as 16TR2, a process which is still underway. The work group that had developed the protocol sent it out for committee comment, resulting in over 300 comments from OEMs and Operators on the 12-page document.

Mr. Cummings said many of the comments will also be used to make improvements in API 16A 4th Edition Shearing Protocol. API 16TR2 will also be reworked to be a Technical Data Sheet to mandate data requirements resulting from tests. Other topics to be discussed include 16A Test Equipment, test sample requirements; details not included in the qualification shear tests of 16A; off-center shearing; and compression and tension testing.

Key steps remaining for the near future are to complete the legal review underway by five operators involved in the project. The API 16TR2 Data Sheet is expected to be finalized and sent to API by early 4Q16. The comment and ballot process will then begin for API 16TR2.

An Offshore Field Development Study

Andrew Trosclair, Jared Matis, Matthew Fontenot and William David of the University of Louisiana – Lafayette gave a presentation titled “An Offshore Field Development Study.” The study was an exercise as part of their petroleum engineering studies at the university.

The project used information on geology and well logs and samples from existing producing wells. Based on the well schematics and other data available, they examined the economics of drilling under various scenarios, including the cost of oil.

Running three scenarios with a 30-year economic limit, the first scenario resulted in a 1.1 year payback with an oil price of \$68.80/bbl. The second scenario assumed an oil price of \$47/bbl, and yielded a payback in 1.7 years. The final scenario assumed an oil price of \$40/bbl, and achieved payback in 2.1 years. The group concluded that ideally it would be best to temporarily abandon the well now and wait for the market to pick up. Nevertheless, the analysis showed that despite low prices, the current environment still provides the potential for a profitable project.

Update on WCC Subcommittees & Workgroups

Gas in Riser Workgroup – Paul Sonnemann, Safekick. Mr. Sonnemann explained that this group under the IADC Well Control Committee has essentially been disbanded, with future work to be done by the IADC Underbalanced Operations and Managed Pressure Committee. Mr. Sonnemann said he and Robert Ziegler of Weatherford will follow up with the UBO/Committee to include riser gas management for MPD and non-MPD operations. This could include best practices for riser gas handlers for conventional

operations. Anyone who is interested is welcome to participate in that group. The MPD/UBO Committee meetings generally take place over a 2-1/2 day period to work on Committee projects.

Simulator Subcommittee – Michael Arnold, Intertek. No report

Barriers Subcommittee -- Scott Randall, PlusAlpha Risk Management. Mr. Randall said the main thing is focusing on its coordination with other industry groups, including the Center for Offshore Safety (working with bow ties), the IADC ORM work group, and the IADC HSE committee. It was noted there were two presentations on barrier management in IADC HSET Europe conference. He stated he would like to emphasize the importance of the Human factors element in barriers management. The subcommittee plans to look at what others are doing to consider Human Factors in conjunction with barriers management.

General Discussion

The next meeting was scheduled for 7th December.

Much of the general discussion centered on the group's desire to review existing well control practices to ensure they are still fit for purposes, given changes in technology and other factors.

The discussion culminated in a proposal to consider establishing a Well Control Practices Subcommittee under the well Control Committee. Concrete action to establish such a subcommittee – need to define scope of well control practices subcommittee separate from training. Next meeting agenda will include a working meeting following regular meeting.

It was agreed that IADC would send out a request to the entire Well Control Committee to solicit ideas to define the scope and purpose of the Subcommittee and to obtain suggestions for specific well control practices and procedures to be reviewed. The suggestions received will be reviewed at the December Committee meeting. Presuming the Committee agrees to establish the Subcommittee, time will be scheduled following the December for an initial formative meeting. POSTSCRIPT: IADC sent the request on 13th October and asked for input by 18th November.

Mr. Mueller noted that Ian Barker had stepped down as Committee Vice-Chairman. He asked for volunteers to take his place, preferably someone with an offshore drilling contractor to maintain the onshore/offshore balance within the Committee leadership.

The meeting was adjourned.

Attendance:

Name		Company Name
Peter	Armitage	ARMITAGE & ASSOCIATES
Peter	Gromley	ARMITAGE & ASSOCIATES
Brendyn	Emerson	BLOWOUT ENGINEERS
Dan	Eby	BLOWOUT ENGINEERS/ SIERRA HAMILTON
John	Broussard	BP
Charlie	Holt	BP
Margaret	Laney	BP
Ricky	Cummings	CHEVRON
Jeff	Breidenthal	CONSULTANT
Chuck	Boyd	CS INC
Jim	Krupa	DRILLING SYSTEMS
Scott	Dotson	EXXONMOBIL
Johnny	Richard	FALK SAFETY SERVICES
Chance	Jackson	GSM OILFIELD SERVICES
Phillip	Harris	HTK INTERNATIONAL
Steve	Kropla	IADC
Marlene	Diaz	IADC
Brooke	Polk	IADC
Gerardo	Barrera	IADC
Mark	Denkowski	IADC
Julio	Ochoa	INTERNATIONAL TRAINING SERVICES
Yoosef	Nasab	INTERTEK
Joyclyn	Walker	INTERTEK
Rose	Rosenkampff	INTERTEK
Fenil	Shah	LEARN TO DRILL
Pat	Lyons	LYONS PETROLEUM SERVICES
Bernard	Lucas	LYONS PETROLEUM SERVICES
Eric	Brown	MHWIRTH
John	Bottrell	NOMAC DRILLING CORPORATION
Rogelio	Verdugo	NORTHWEST TECHNICAL SOLUTIONS
Karl	Hilthon	PARAGON OFFSHORE
Mitch	Eichler	PARKER HANNIFIN

Scott	Randall	PLUS ALPHA RISK MANAGEMENT SOLUTIONS
Robert	Urbanowski	PRECISION DRILLING COMPANY
Stan	Christman	RETIRED
Benny	Mason	RIG QA INTERNATIONAL INC
Roger	Sanchez	RIG QA INTERNATIONAL INC
Eliot	Doyle	ROWAN COMPANIES
Paul	Sonnemann	SAFEKICK
Zhaoguang	Yuan	SCHLUMBERGER
Chad	Lyons	SEVENTY SEVEN ENERGY
Roger	Stave	SJO DRILLING AS
Andreas	Stave	SJO DRILLING AS
Larry	Schmermund	SMITH MASON & COMPANY, LLC
Cheryl	Francis	STATOIL
Joshua	Robnett	SUBSEA SOLUTIONS
Victor	West	TECHNIQUES TRAINING INTERNATIONAL
Trey	Holland	TECHNIQUES TRAINING INTERNATIONAL
Barry	Braniff	TRANSOCEAN
Robert	Ziegler	WEATHERFORD
Barry	Cooper	WELL CONTROL SCHOOL
Steve	Richert	WILD WELL CONTROL INC.
Kevin	Braggs	XCEL SAFETY TRAINING SOLUTIONS