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QUESTIONS ON API S53 SUBMITTED BY IADC WEBCAST REGISTRANTS

Thank you for attending this webcast. Frank and Mel have answered a number of questions posed by webcast registrants. We recommend viewing the webcast before reading the Q&As. We appreciate the questions!

Q. The need for equipment to operate in higher-pressure environments, as well as the increased safety factors following the Deepwater Horizon incident has been reflected in many customer specifications. Will there be a move away from steel castings being used for doors, BOP bodies and other components and more forgings being required instead?

A. This should be addressed in API Spec 16A for well control equipment, which is now being revised.

Q. What kind of inspections must to be done to the BOP equipment every 5 years?

A. Inspections should be conducted in accordance with OEM recommnedations and the equipment owner's preventive-maintenance program. S53 recognizes both condition based and time or schedule based maintenance.

Q. Will this also pertain to well servicing, including workover and production/well maintenance operations?

A. S53 does not address workover, well servicing or interventions

Q. Section 7.2.3.2.3 regarding one additional kill line shall be located ABOVE the lowest well control ram BOP. Section 7.2.3.2.10 Location of choke and kill line openings on the BOP stack depend on the particular configuration of the preventers and the operator's preferred flexibility for well control operations. The Figure 11 illustration shows the kill line installed BELOW the lowest well control ram BOP. If a rig has the same stack up like illustration 11 is it in compliance with API S53 or will it still require the additional kill line ABOVE the lowest well control ram BOP also?

A. The illustrations are representations. They are not "recommendations."

Q. A comment regarding the content list of the new API S53: I believe the Contents list is not properly updated, e.g. see chapter 7.3 and 7.4.

A. This should be brought to API's attention. If an error exists, an errata sheet will be issued.

Q. Could I have please documentation concerning difference between API STD 53 AND API RP53?

A. This comparison will be presented at the BSEE Standards Workshop in 5-6 November in New Orleans. This will be in the public domain shortly thereafter. Go to the BSEE website for details.

Q. Do BOPs have to recertified by the OEM or can they be sent to any API 16A Remanufacturing facility?

A. Neither certification nor recertification is required by S53. OEMs or OEM licensed facilities have the ability to repair or remanufacture the equipment. S53 recognizes that any third party for remanufacturing becomes the OEM and requires them to be in compliance with API specifications.

QUESTIONS ON API S53 SUBMITTED BY IADC WEBCAST REGISTRANTS (CONTINUED)

Q. Is anyone working on an annular preventer (designed to close on open hole) that can be pressure tested in open hole? This would be adding two sets of blind rams to your stack.

A. Some annulars are already designed to close an open hole, but they have limitations. Refer to OEM for guidance.

Q. Do you see this ruling impacting drilling in Texas? It my understanding that STD 53 requires two hydraulic drilling chokes and manifolds to API-16C. Do we have the rig ready to meet the requirements? Will the Texas Railroad commission wave the requirement or grant a grace period?

A. The Texas RRC and other states are adopting S53 in its entirety. This is beyond the scope of this discussion. API writes standards and specifications, not regulation or legislation.

Q. 1. Does the manufacturer or API provide schedule and minimum requirements to be fulfilled for inspection, testing & maintenance of the well control system (i.e BOP, Kill & Choke lines, Choke & Kill valves, Choke & kill line manifold, BOP control system including driller panel, main control & remote panel?

2. Does the API or manufacturer provide the minimum distance of the main BOP control system & the remote system from well center in case of land & offshore rigs?

A. As for Question 1, S53 provides the minimum criteria. Specifics are addrssed by the OEM and the equipment owner.

Question 2 was a major point of discussion in developing S53, which is why API 500 and 505 were so highly referenced in S53.

Q. What are the criteria for BOP control systems as per API 53?

A. Question is too broad to answer here. You can check with API for details.

Q. What is new or additional wrt contingency planning.

A. This is beyond the scope of S53.

Q. When do you anticipate that API STD 53 will be law in US? Internationally?

A. This is beyond the scope of S53.

Q. In today's digital world API Standard 53 is being disseminated far more than API Standards and Recommended Procedures were circulated 10 years ago. Regulators and lawyers are referring directly to the API Standards in writing the laws (Colorado COGCC and in the proposed Texas Railroad Commission regulations) and in arguing "good industry standards" in courtrooms. Currently in API S53 and most other API documents we still use the word "should". This has led to multiple major drilling contractors to design rigs with complete disregard to the "should". Because of the word "should" many new rigs are placing the accumulators inside substructures (as are trip tanks, shakers, gas busters, etc.) some within 15 feet of the wellbore and with no easy escape if the well goes out of control. The word "should" is being used by the rig builder's attorneys not to design rigs that are "fit for purpose" where the "fit for purpose" is for effective and safe well control operations, but rather for the contractor's "fit for purpose" of moving the rig quicker and cheaper. I don't think API has the luxury of assuming these Standards are not being used directly as methods to avoid their responsibilities towards "life" and "environment". It seems any "should" in these Standards "shall" be eliminated as they are being completely disregarded and by putting the "should" in the text allows the attorneys to emphasize that the phrase must mean that the "recommendation" must not be that important since it is not a "shall".

A. S53 is not a design standard.

Q. Can the January 1, 2014 date be flexible? What is exactly expected of on shore drilling contractors come that date?

A. API does not write regulation or legislation.

Q. What is the status of the conformance tool? As of 5 September, API was going to request comments/ potential changes to 53. Did this happen or is this happening?

A. The draft conformance tool is available. However, the discussion on the final tool is ongoing. We are unaware of any effort to request changes.

Q. The new standard indicates that a connector gasket can be used more than once. Please clarify the circumstances under which this is so.

A. S53 is clear on this topic. Gaskets may be reused if so designed.

Q. With regard to well control equipment and processes, what current offshore applications will more than likely be implemented onshore in the near future?

A. This is a regulatory question. API does not write legislation or regulation.

Q. From within API RP 53 the recommended minimum level of spares to be held was noted; there is no mention of this within API S53.

A. That is intentional. It is an "all depends" answer. Circumstances and minimum requirements are variables and should be addressed contractually.

Q. BOP pressure testing: has the low pressure test changed from between 200 and 500, to 300 and 500??

A. It is actually 250 to 350 psi on the low pressure side. This makes sense because the old requirement required a specific gauge. Now you can use a single gauge for testing.

Q. Is there any fundamental aspect that lecturer and student (undergraduate and post graduate) should know about well control system?

A. At the end of sections 6 and 7, there are subsections that address considerations for shearing. That is a well control operation and a well control system aspect of S53. A major challenge in developing S53 was to ensure it did not demand a "one size fits all" approach.

Q. Why is a diverter considered as well control equipment when it not a system that can contain and control pressure and when used it generally is during a situation where the well is not under control?

A. Well control is defined as maintaining constant bottomhole pressure. A diverter is not a piece of well control equipment and is not designed to shut in a well. Having said that, diverters are integral to the well control process, i.e., subsea drilling. But they are not well control equipment.

Q. Where can one obtain the new API Standard 53 in Spanish?

A. Check with API.

Q. Who pays for the rig time required to meet the new standard if the BOPE fails to meet the criteria, thus causing downtime?

A. This is a contractual issue and outside the scope of S53.

Q. How can we provide reports of condition based maintenance and satisfy client expectations when a 5 yearly OEM class 1 refurbishment is what they currently require? Will there be a set of approved and recommended practices that will be universally recognized? Equipment vendors as a rule do not offer services in lieu of five yearly refurbishment.

A. A recommended practice is no longer seen as beneficial for these types of requirements.

Q. No questions at this time other than does it seem that our industry is sticking their heads in the sand on compliance to standard 53 as it is written?

A. No answers at this time, other than the industry is making every effort to meet S53.

Q. What is API S53 impact on maintenance intervals for riser joints.

A. This out of scope for S53, but is addressed in other API documents, such as 16 Q and R.

Q. Should we check & confirm shearing capacity of a BOP at a particular interval ? If so, when? After every refurbishment job? After every how many years ? Also it is suggested to include BOP shearing capacity data of different size & pressure rating BOPs of reputable BOP manufacturers in API RP 53.

A. We have dedicated specific portions of sections 6 and 7 to address this. There are too many variables to consider to answer this question in general.

Q. Why did you include a test to full working pressure after connection to the wellhead for subsea BOPs instead of a test to maximum anticipated wellbore pressure? For instance, in the case of our wells this is pretty much a doubling of the test pressure with all related risks of damaging equipment. Not all subsea wells are HP subsalt.

A. This is a matter of interpretation. Check with API. However, if the question were "How did the task group determine the test criteria?", the answer would be that we had to consider the maximum pressure for the environmental conditions of the well at that time. Subsequent tests will be at lower pressures, so the connectors will only see those lower pressures when testing casing(s).

Q. What is API's assessment for regulators to begin referencing the new standard? What are the most significant differences between API RP 53 and Standard 53? How does API handle the variances between OEM Operations & Maintenance Manual on BOP systems and a contractor's PM Schedule based upon operating experience? What can industry expect in terms of future revisions to API Standard 53? What can industry expect in terms of future regulatory changes in the US GoM and are any changes contrary to the API Standard? Will API develop a framework for wet verification of SS BOPE to allow stack hopping between wells without having to pull, inspect, test and rerun?

A. The significant differences will be adresed during the BSEE Standards Workshop referred to previously. The remaining questions should be referred to API for interpretation.

Q. How effective is the industry in following API standards particularly when they are not built into CFR?

A. One of the major changes in S53 is the communication between OEM and equipment owner on failure reporting. We've seen significant increase in alerts and bulletins coming from the manufacturers.

Q. Cameron lists 4 different Remanufacture levels. Need clarification to distinguish differences, such as a working class or combo class. does each qualify as the 5 year as per the new Standard 53?

A. This was addressed during Mel's presentation.

Q. How should be calculated the accumulator sizing when using shear rams under the API STD 53 recommendations?

A. This is addressed in Annex C and within the body of S53.

Q. How can safety engineers know the key points to be taken in account in BOP operations?

A. Use the draft assessment tool, as discussed. This is a good resource to assist in developing BOP operations. The best way to gain insights is to join the process.