International Association of Drilling Contractors

Jack-up Committee
Subcommittee on Gulf of Mexico Annex/ TRS Areas
February 26, 2015
IADC Offices
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Minutes

I. IADC Instructions:

Alan Spackman welcomed everyone on behalf of the tardy committee chairman and reminded all in attendance of the IADC Antitrust Policy and Guidelines. Copies of this policy are available for anyone upon request.

II. Introductions and Meeting Objectives:

The meeting opened at approximately 0915 with introductions all around.

The original committee purpose was to create a set of manned conditions for assessing jack-ups first to SNAME Bulletin 5-5A and then to the ISO 19905-1 standard. A consideration in the development was to create an assessment process that would allow the jack-up fleet that traditionally operated in the GoM to continue to do so while ensuring that safety of life and protection of the environment must be addressed. The approach is based on watch circles which define environmental criteria which can approach the jack-up within a specific time frame. If this criteria is expected to be exceeded, then the rigs must be evacuated.

A consensus of those in attendance was reached that the committee should continue to address issues relating to the GoM Annex. A new mission statement will need to be submitted to the IADC Jack-up Committee chairman. The purpose was to discuss issues that have arisen since the committee published the GoM Annex, work needing to be addressed, and identify a way forward.

III. Metocean Criteria

1. API RP-2MET: API has introduced new metocean criteria for the Gulf of Mexico which represents increased conditions and requirements from the previous work. The majority of the work applies to the full population hurricanes. Two changes from previous work deals with airgap and demanned rigs.

   The new 2Met sudden hurricane criteria retained the single value for the Gulf of Mexico. There had been some question if the methodology used to develop our metocean curves in the GoM Annex and the possibility these would need to be revisited. John Stiff has discussed this with API and at this time they do not have concerns with the methodology used.

2. Demanned Rigs: API has changed the returned period for demanned/unmanned platforms from 10-year full population hurricane (fph) to 25-year FPH. This change may affect the warranty surveyor's approval who have used the 10-year return in their review process. The committee

was advised that Jack-ups do not need to be treated like fixed platforms but clear, concise justification is needed where the jack-up assessment deviates from API.

3. Airgap: API is requiring airgaps to be based on the 1000-year event. The justification for this change is to address the platform damage during hurricanes and is based on the Forrestal papers. This will increase the current airgap in the center region by 2 m to 21 m. The east and west regions could remain at 17 m. A consideration for the GoM to have two recommended airgaps in the absence of site specific date was proposed as one solution.

   It was noted that Forrestal did not intend his work would be used as justification to increase airgap but rather to develop an approach to designing components on the decks of platforms to prevent local damage from incidental wave effects. Jack-ups will be unmanned and are not permanent and this requirement should not apply to them. Past experience has shown jack-ups to survive with nominal hull damage that could have been caused by the Forrestal effect.

   It was noted that in many cases the jack-up is operating next to a platform that was designed to previous AIP RP-2A and that the environmental capability of this platform is less than the jack-up.

   Operators are considering an increased airgap to provide an additional margin to prevent rigs from falling or floating into their platforms. The committee should look at the overall risk to infrastructure to avoid compounding safety factors resulting in too conservative an approach.

   The airgap in API 95J did not include a risk evaluation for increased airgap recommended in this practice. The committee was advised that increasing the airgap is not always the least risk option. Increased airgap will result in an increased dynamic response of the jack-up and wind loads will be applied at a greater elevation. The committee should remember that jack-ups are manned-evacuated and this should be considered when evaluating airgap requirements. The current wording in 95J needs to be revisited (as this is the same wording in GoM Annex revision to the text should be part of an updated document) as it can lead to interpretation and legal difficulties in application.

4. Wind Velocity Check for Evacuation: A concern of API is that GoM does not provide a check for the maximum wind speed for evacuation based on helicopter limits. As a historical note, the evacuation was discussed during the development of the GoM Annex. The contractors participating in the document's development at the time noted that an evacuation plan for each location was required for a license to drill. The consensus was that the GoM Annex was not the place to start making recommendations on evaluation. A note to the effect was therefore included in the GoM to advise the document was only valid with an effective evacuation plan.

   In the North Sea for helicopter evacuations the regional requirement is a 60 knot condition. A similar limit in the GoM was not known but the consensus was the wind speed would be lower.

   A recommendation was made for the drilling contractors to consider the Operator's evaluation plan and if necessary prepare a bridging document to address API's concerns. The committee noted that the manned and un-manned procedure must be valid. This should be verified by the

drilling contractors to ensure the plan will work. There was a question whether if the current wording was adequate to address the concern. A question was also raised concerning stacked rigs which would be the responsibility of the drilling contractor.

Malcolm Sharples agreed to contact Bill Chiles to get his input on GoM evacuation. The drilling contractors were asked to consult with those responsible for the evacuation plan when operating in the GoM.

IV. Survival Criteria:

The chairman gave a very brief opening to the discussion of the current text in the annex noting that it was limited to general guidance. The GoM Annex was generally complete before Hurricane's Katrina, Rita, and Ivan when several jack-ups were lost. Experience has shown rigs (see attached figures) have survived severe storm events that exceeded the approved Marine Operations Manual's benchmark storm.

Survival criteria is an unmanned condition. Stakeholders that are affected by a "survival criteria" are:

1. Operators: License holder. Responsible for safety of life and protection of the environment. Risk to infrastructure.
2. Marine Warranty Surveyors: Represent underwriters. Some will have their own requirements as what would be acceptable for an unmanned unit.
3. Drilling Contractors: Economic risk due to loss of asset and possibly infrastructure. They also are concerned with pollution risk.
4. Class Societies: The MOM contains class approved benchmark storms which define the ABS environmental limits. A survival criteria that exceeds these limits would need to be acceptable to ABS.

In considering risk the location of the jack-up should be included in the survival criteria. Jack-ups located next to platforms should have a different risk assessment than open-water locations. The risk assessment also needs to consider infrastructure such as pipelines and platforms that could be damaged should a rig collapse. In this infrastructure risk assessment there should be consideration BSEE defined "critical infrastructure".

A recommendation was made to sponsor a project to determine if the rigs in the GoM would survive the 100-year event based on limiting load or resistance factors to 1.0. This study should use the latest metocean conditions from API RP-2Met and consideration could be given to using assessment criteria for existing platforms as permitted by API. Wave spreading and directionality would also be included. The study would show which rigs satisfied these condition and those that were unsatisfactory. The study could identifying progressive component failures.

As part of the discussion of this proposal, it was noted that a NDA paper evaluated all the rigs locations using the GoM Annex Assessment and Contingency curves. This study demonstrated that had the GoM Annex been used a majority of the rigs that were lost would not have been approved for the site. In rebuttal, it was noted that the objective of the proposed study was to evaluate survival criteria. Two questions need to be addressed before defining a survival criteria;

1. What is the objective for a survivability analysis?
2. What is the failure return period the rig can survival?

The chair noted that any studies approved would be under the direction of the jack-up committee and require new funds be found to support the studies. This includes any work related to the metocean data should this need to be updated. The committee is encouraged to discuss this proposal and others that will help define the survival criteria and an approach to determine this criteria.

V. EXPAND TO OTHER TRS AREAS:

The approach used in the Gulf of Mexico, where watch circles define the metocean limits, which define the point when the rigs have been demanned and the rigs is prepared to wait on weather could be applied to other TRS area. The committee has been requested to use the GoM model and expand to other TRS areas.

The Gulf of Mexico has demonstrated that the predictions of sudden hurricanes is feasible because of the metocean data available and historical observations. The metocean data in other areas will not be as good or even exists. Helicopter evaluation is also a critical condition for application of the GoM annex. If this latter condition does not have a high level of confidence that it can be safely applied, then

The locations where a TRS approach could be considered are:

Trinadad
GoM – Offshore Mexico
Bay of Bengal (India)
Gulf of China
Vietnam
Australia
Nicaragua
Gulf of Thailand

In most cases the above regions the metocean condition are such that demanning would not be considered as part of the site assessment plan and a standard ISO 19905 assessment would be performed. There are only a limited number of drilling contractors operating in India.

The committee recommended that the chairman contact Shelf Drilling to determine if they felt an annex for India would be beneficial. There was discussion that a possible application in Trinadad would be beneficial. For this reason, the representatives from the drilling contractors should discuss with the operations group at each drilling contractor to see if annexes for TRS areas, other than the Gulf of Mexico, would be beneficial operating their rigs.

VI. OTHER ISSUES

1. API 95J: The committee felt this standard should be included in the work scope of the committee. The original work was under the direction of Sandy Fury from Chevron. The chairman should follow-up on the standard. A question was raised concerning if this was still an “interim” standard. The committee felt 95J should continue with the “minimal approach” but

with more explanation. This document should provide guidance and avoid prescriptive requirements. The airgap was noted as causing problems due to the implied prescriptive limit.

2. BSEE Checklist: The operator is responsible for satisfying BSEE and they would be required to complete the checklist. Some drilling contractors complete their part of the checklist while other contractors do not complete the checklist but provide the information on their rigs to the operator.
3. IJUC GoM Annex Chairman; The current chairman has been acting in an interim capacity. This committee has traditionally been chaired by a drilling contractor and this would be the preferred option.
4. Future meetings should be aligned with the IADC Jack-up Committee meeting.

Meeting close with re-iteration of items needed for review and comment and appreciation for participation of both drilling contractors and operators. Request that we need to acquire more Drilling Contractor investment for the Jack-up Committee to go forward.

VII. REFERENCES

1. Gulf of Mexico Jackup Operations for Hurricane Season – Interim Recommendations, API RP-95J, 1st Ed, June 2006
2. Recommended Practice for Site Specific Assessment of Mobile Jack-up Units, Gulf of Mexico Annex, Rev 0, Sept 2007
3. ISO 19905 Annex H – Selected Pages
4. Chairman's Slide Presentation