



From: Webster, Simon
Sent: Mon Jul 05 13:01:22 2010
To: Hill, Trevor; Martin, John JW
Cc: Knox, Tom; Espiner, Richard; Khanna, Samir; Coy, Dan
Subject: Re: Update on possible erosion of the bursting disc holder
Importance: Normal

I agree with trevor this will allow us to move forward quickly

From: Hill, Trevor
To: Martin, John JW
Cc: Webster, Simon; Knox, Tom; Espiner, Richard; Khanna, Samir; Coy, Dan
Sent: Mon Jul 05 13:41:02 2010
Subject: RE: Update on possible erosion of the bursting disc holder

John

Thanks for this. The subject remains of high interest to BP and DoE. We have a review on Thursday or Friday with DoE on the overall well shut-in test, and the prediction/understanding of possible hole size (and therefore flowrate out) has a big bearing on what we expect the well head shut-in pressure to be if the discs failed in the incident. I agree with pursuing all three physical testing possibilities, though the initial timing is short, by Thursday morning CST. We have a few days beyond that before the actual shut-in test happens, so further work may still be beneficial. In terms of disclosing the geometry of the fitting, please don't send out the company's drawing. Let's just use a simplified drawing of the features of interest.

Also I don't think we need to get into discussion with the testing providers about the situation re possibility of rupture discs failed downhole ... the description of the issue should simply be drilling mud flowing through an orifice, related to the MC252 incident... this should be sufficient to introduce the problem without needing confidentiality agreement, but I would appreciate Simon's advice on this.

Happy to talk as required.

Regards

Trevor

From: Martin, John JW
Sent: 05 July 2010 10:35
To: Hill, Trevor; Webster, Simon; Knox, Tom; Espiner, Richard; Khanna, Samir; Coy, Dan
Subject: Update on possible erosion of the bursting disc holder
Importance: High

Folks,

I just wanted to summarise where we are with these studies as there has been a lot of activity over the last few days. For clarity, I have split this into physical testing and CFD modelling since I see these as the two facets of the ongoing studies (given that, to date, trying to find existing pertinent data/corrosion models has been unsuccessful - still looking though):-

1. Physical Testing

We now have three possible initiatives for some physical testing. My suggestion, if others agree, is that we follow up on all three lines of investigation since it will be beneficial to get information from multiple sources if possible, plus in this way we increase our chances of getting fast/successful progress:-

- ECRC, University of Tulsa
- University of Tulsa have been contacted and will be undertaking some initial trials on Tuesday

to see what throughputs they can achieve with an 1/8" diameter orifice in pumping mud with similar properties to that use for the top kill. If these are successful then they will be able to rapidly develop tests on the bursting disc assembly geometry with top kill mud.

- If the initial trials are successful Tulsa will need to be supplied with the drawings of the burst disc assembly plus samples of the top kill mud (are there any restrictions to doing this?).
- Dynaflow
 - It is understood (from Sandia National Labs) that Dynaflow have the capability for undertaking 'nozzle' erosion studies. The next step is to contact Dynaflow to explore this possibility (Action: John Martin).
- Mud Centrifuge Companies
 - It has been suggested (by Dan Coy) that mud clean up centrifuge manufacturers/users may be able to undertake some trials on 'nozzles'. The next step is to identify/contact centrifuge companies to explore this possibility (Action: Dan Coy, assuming he agrees).

The physical testing will give a 'first pass'; idea of how much erosion (hole opening) that may have occurred during the top kill process, as well as help validate any CFD erosion model that is developed (see below).

2. CFD Modelling

Dan/Samir are progressing this aspect. My suggestion is that as they get into the detail of the CFD modelling they look to consult with Brenton McClaury of ECRC, University of Tulsa on the best erosion model to apply (see e-mail from Brenton). The physical testing data would be used to validate any CFD erosion modelling to allow the model to be used for parametric studies and the like.

Trevor/Simon,

Can we have the necessary permission/s to discuss the issues with all the companies/institutes named above? What, if anything, do we need to do in regards of confidentiality agreements with these parties and is there anyone in legal who could expedite this for us?

Please feel free to add anything I may have forgotten.

Best Regards

John Martin

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