From: Childs, Greg (DWH Proj)
Sent: Thursday, July 15, 2010 7:53 PM
To: Ambrose, Bill (Houston)
Cc: Walsh, Bob (Houston); Farr, Dan (Houston); Florence, Ewen (DWH Proj)
Subject: RE: Sharepoint Investigation ticket 32 on Shearing, revision

Attachments: Cameron EB702 Shear Calculations 6 625 V150 4k.xlsx

Sorry, I failed to include the mud hydrostatic effects in my first calculations for the 6.625 .522 wall V-150 drill pipe. Adding the effects of 14.3 ppg mud in 5047 ft water depth increases the maximum shear pressure from 4837 psi to 5394 psi using the dimensional method from Cameron EB 702.

80% of 5394 is 4315 psi which is above the 4000 psi limit meaning there is a very low chance you could shear the pipe with the SBRs at depth.

Greg

From: Childs, Greg (DWH Proj)
Sent: Thursday, July 15, 2010 12:03 PM
To: Ambrose, Bill (Houston)
Cc: Walsh, Bob (Houston); Farr, Dan (Houston); Watson, Simon (DWH Proj); Florence, Ewen (DWH Proj)
Subject: RE: Sharepoint Investigation ticket 32 on Shearing, revision

See below, I hope this helps.

Greg

From: Ambrose, Bill (Houston)
Sent: Monday, July 12, 2010 10:24 AM
To: Childs, Greg (DWH Proj)
Cc: Walsh, Bob (Houston); Farr, Dan (Houston); Watson, Simon (DWH Proj)
Subject: RE: Sharepoint Investigation ticket 32 on Shearing, revision

Greg,

A couple of questions to close out these calculations and the report:

1) Did you use the actual material certs for the 6-5/8" 32# pipe located in this directory for the calculations? A calculation for the low, high, and average range of material may be required with these certs referenced in the study.

J:\Servers\FileShare\Common\Maintenance\Materials Dept\Tubular reports\Drill Pipe\6.625 drill pipe

The Cameron EB 702 calculation method does not have a provision for the actual material properties to be used. The equations contain constants that were empirically derived to allow for the variables in actual wall thickness, strength and ductility (brittleness). The results should provide the maximum shear pressure for the worst case materials, wall thickness, etc.

2) There was also 6-5/8" V150 0.52" wall pipe in the derrick (certs in the same folder), what if this were in the rams?

I ran the EB 702 calculations again and the dimensional method (uses wall thickness) says it would take 4837 psi maximum to shear which is above the max pressure avaiable.

3) I know the calculations are done with the conservative formulation based on the scatter of real shear test data, can you comment on the probability that the 6-5/8" would shear at the 4000 psi pressure (i.e. 50% chance, 80%, etc).

This is a difficult question. I have seen as much as 2000 psi spread in shear pressures for the same pipe, but do not have the statistical data to verify percentages. My best guess is that about 50% of the time, the shear pressure would be at about 80% of the max. For this pipe, this would equate to a 50% chance of shearing at 3870 psi which is just below the 4000 psi maximum available.

Thanks,

Thanks,

Bill

BILL AMBROSE

TRANSOCEAN | 4 GREENWAY PLAZA, HOUSTON, TX 77046 | OFFICE 713.232.7622 | CELL 713.377.8860 | HYPERLINK "mailto:bill.ambrose@deepwater.com"bill.ambrose@deepwater.com

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From: Childs, Greg (DWH Proj)
Sent: Thursday, July 01, 2010 7:29 AM
To: Ambrose, Bill (Houston); Watson, Simon (DWH Proj)
Cc: Tolleson, Chris (DWH Proj); Walsh, Bob (Houston); Florence, Ewen (DWH Proj)
Subject: Sharepoint Investigation ticket 32 on Shearing, revision

Attached is a revised report on the above subject with additional attachments.

The shear capabilities are based on 4000 psi max. There is back up information on the shear ram bonnets being good for 4000 psi and the high pressure shear control circuit being set at 4000 psi.

Regards,

Greg