

From: Mix, Kurt
Sent: Tue May 18 00:13:53 2010
To: Sprague, Jonathan D
Cc: MC252_Email_Retention
Subject: FW: CFD Results - Case 11 - 70000 bpd impacting baseplate of DEN BOP
Importance: Normal

this actually a very interesting idea - momentum - know velocity ...

From: Colin Leach [mailto:cleach@argonenergy.com]
Sent: Friday, May 14, 2010 3:31 PM
To: Colin Leach; Mix, Kurt
Subject: RE: CFD Results - Case 11 - 70000 bpd impacting baseplate of DEN BOP

I see the discussion about the oil flow rate.

Perhaps BP does indeed know the rate?

If not, the results from Stress allow a rate to be measured. Putting a plate into the flow will generate a force that can be measured...suspect an ROV is equipped for that.....back calculation can then give rate.

Combination of rate plus pressures in BOP give potential reasoning for Top Job or not...that is a critical decision

Regards

Colin Leach

The "last 2 hours" before the incident geograph was interesting

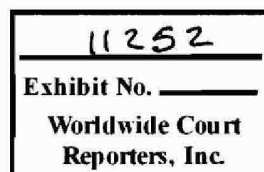
From: Colin Leach
Sent: Tue 5/11/2010 6:02 AM
To: Mix, Kurt
Subject: RE: CFD Results - Case 11 - 70000 bpd impacting baseplate of DEN BOP

The results look very plausible and consistent.

Even if you double the flow rate out (138 BOPD & 140 mmscf/d), the force should be a maximum (at 5 ft offset) of $\sim 4 \times 1345 \text{ lbf} = 5380 \text{ lbf}$

Regards

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BP-HZN-2179MDL04936992

BPD344-137424

TREX 011252.0001

Colin Leach

I note (Chronicle) that BP is considering a "junk shot" to shut in the well. Please look at any difference in a sharp shut-in versus a very slow soft shut-in to confirm that a sharp shut-in will not result in a significantly higher annular pressure due to free gas.

From: Mix, Kurt [mailto:Kurt.Mix@bp.com]
Sent: Mon 5/10/2010 8:09 AM
To: Colin Leach
Cc: MC252_Email_Retention@bp.com
Subject: FW: CFD Results - Case 11 - 70000 bpd impacting baseplate of DEN BOP

have a once over ... it looks consistent to me.

From: Wellings, James S
Sent: Monday, May 10, 2010 7:32 AM
To: Mix, Kurt
Subject: FW: CFD Results - Case 11 - 70000 bpd impacting baseplate of DEN BOP

Kurt, when you get a chance could you QC this work? Thanks.

From: Chris Matice [mailto:Chris.Matice@stress.com]
Sent: Friday, May 07, 2010 6:24 PM
To: Simpson, Richard
Cc: Wellings, James S; Fleece, Trent J; Stoltz, Dan; Autio, Brian D; Harbinder Pordal; Paul, Anup K (Stress Engineering Services Inc)
Subject: CFD Results - Case 11 - 70000 bpd impacting baseplate of DEN BOP

Richard:

Attached are the results of our plume thrust calculations on the DEN BOP. We have checked the force values generated by FLUENT in some detail and am confident these are realistic values.

Please contact me if you have any questions.

Regards,
Chris

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BP-HZN-2179MDL04936993
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TREX 011252.0002

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