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REFERENCE: COMMISSION OF INQUIRY: MONTARA WELL HEAD PLATFORM UNCONTROLLED HYDROCARBON RELEASE

Added Information to **SUBM.1810.0001.0001**

1. Investigate and identify the circumstances and likely cause(s) of the Uncontrolled Release.

The following is a quote from an SPE (society of petroleum engineers) technical discussion in a blogging site (<http://communities.spe.org/> TIGS/ Offshore Operations Discussion Forum/ BP Oil Spillage Technical Discussion Email specommunities@spe.org)

The purpose of presenting the comments here are to illustrate how the sharing of an incident through haphazard reports don't achieve the learnings required to achieve reliability on offshore oil and gas drilling and completion operations.

I make this proposal after reading the following discussion. A recommendation in my published comments at the bottom are that two inquiries be handled simultaneously through the SPE organization. The goal is again is to achieve reliability on offshore drilling and completion operations by making all hazards in the oil and gas industry transparent across disciplines, corporations and community. The way this might be achieved is in the discussion below.

BP Oil Spillage Technical Discussion

The tragedy involving the Deepwater Horizon rig and the subsequent oil spill in the US Gulf is an event that we as professionals of Oil and Gas Industry, should understand, discuss and learn lessons in order to avoid such accidents.

I am greatly interested in such topic for two reasons: I work as driller supervisor in one of those Semi-Submersible rigs in Brazil for Petrobras and well control is one of my specialties. I am reading the news every day, but naturally it lacks technical comprehension of what happened.

Therefore, I created this topic to share knowledge and raise the technical understanding of:

1. What was the ongoing operation before the blowout?
2. Why the BOP equipment failed or nobody took action closing the BOP?
3. Who are the responsible for the accident? BP or Transocean?
4. What can be done to mitigate the environmental impact?

I attached a document that is the best reference that I have.

Moreover, I am posting articles and information sources to keep up to date.

Sources:

Upstream Journal - <http://www.upstreamonline.com>

Oil and Gas Journal - www.ogj.com

World Oil - <http://www.worldoil.com/wire.aspx>

Financial Times - <http://www.ft.com/indepth/bp-oil-spill>

And some articles involving different aspects regarding the accident:

Deepwater Horizon Technical Description -

[http://www.deepwater.com/fw/main/Deepwater-Horizon-56C15.html?](http://www.deepwater.com/fw/main/Deepwater-Horizon-56C15.html?LayoutID=17)

LayoutID=17 Fighting the Blowout;

Relief Well - [http://www.ogj.com/index/article-isplay/8475724583/articles/oil-gas-journal/general-interest-2/hse/2010/05/bp-](http://www.ogj.com/index/article-isplay/8475724583/articles/oil-gas-journal/general-interest-2/hse/2010/05/bp-drilling_relief/QP129867/cmpid=EnlDailyMay42010.html)

[drilling_relief/QP129867/cmpid=EnlDailyMay42010.html](http://www.ogj.com/index/article-isplay/8475724583/articles/oil-gas-journal/general-interest-2/hse/2010/05/bp-drilling_relief/QP129867/cmpid=EnlDailyMay42010.html)

⌘ Cleanup Operation -

<http://online.wsj.com/article/SB10001424052748704866204575224713758424350.html?mod=djempersonal>

Political and Financial Impact - <http://www.ft.com/cms/s/0/776c0f46-57a7-11df-855b-00144feab49a.html> or

http://www.worldoil.com/US_govt_BP_continue_investigation_on_Deepwater_Horizon_disaster.html

Thanks,

Leonardo

The operational aspects before blowout

Approver Comments

I think it is relevant and important to discuss this topic here. However, I must caution everyone who comments on this issue of the litigation possibilities that exist. So if you have information to share please share it and state where you got it. As for comments I recommend no flat "right or wrong" statements. For some of my international friends this may seem trivial but here in the United "we sue" States of America it is a real threat.

In a statement today, Halliburton said its crew cemented the Macondo exploration well but never set a cement plug to cap the bore as operations had not yet reached a stage where a final plug was needed.

Halliburton had completed the cementing of the final production casing string in accordance with the well design approximately 20 hours prior to the incident," [1]

The Halliburton statement let us infer important points:

1. BP drilled the production zone (caliper? vertical/horizontal section?) Without problems. To drill the production section the mud system should mitigate formation damage and lost circulation. It is achieved by using compatible fluid (like OBM), bridge agents that plug the formation pores (like carbonate), and overbalance as low as possible. OBM has a critical disadvantage when concern is well control, since hydrocarbon gas dissolves down hole into the mud and become unnoticed until migrate next to the surface. It gives short reaction time to close the BOP.

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2. The next operation was run and cement the production zone. The list below is a short summary of the operation steps:

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Trip into hole (RIH)

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Condition mud

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Release slips and slack off the liner weight onto the hanger.

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Pump cement

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Drop Pump Down Plug (PDP) from manifold

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Displace cement to cover the production zone

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Bump LWP to Landing Collar

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Pressure casing string to test collar

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Energize packer element as a second isolation from the production zone.

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Circulate out excess cement

၂၇၂၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ ၂ Pull out of hole (POOH) with setting tool

According to Halliburton, the accident happened 20 hours after the cementing operation has been done and tested. The next step is POOH the DP, and it requires the full crew to execute.

At this point, some speculation begins. Even though, the crew at Deepwater Horizon was prepared to detect and quickly take action against kicks. In my view, they couldn't imagine the failure of the packer element or the float valves or the cement job and perhaps weren't monitoring the systems that detect an influx.

A mixture of gas and water was coming up the drill string and riser to the surface and the deck of the Deepwater Horizon. The volatile mixture of high-pressure hydrocarbons likely ignited quickly and unexpectedly, killing the 11 individuals who were on the drilling floor itself. Normally, one of these drillers would have hit the panic button that closed the blowout preventers (BOP) on the seabed, but likely didn't have the time to do it.

The toolpusher a bit farther away also has access to a panic button, but himself may have been incapacitated in the explosion or, if the electrical switches to the BOP were cut when the riser exploded, may have been unsuccessful in his attempt. [2]

[1] -

http://www.upstreamonline.com/live/article213912.ece?WT.mc_id=rechargene_ws_rssth

[2] - <http://blog.iongeo.com/?p=1961>

Subject BP Oil Spillage Technical Discussion

Approver Comments Wayne, I edited out some of the more dramatic portions and some of the names of the service companies. If you can find any links to the incident you refer to in Australia then by all means please include it here.

This is a most excellent start towards your goal and possible one that the SPE TIG can take forward as a learning process for its members. I quote: "The tragedy involving the Deepwater Horizon rig and the subsequent oil spill in the US Gulf is an event that we as professionals of Oil and Gas Industry, should understand, discuss and learn lessons in order to avoid such accidents."

I have made submission to www.montarainquiry.gov.au investigating a recent uncontrolled flow after cementing casing and suspending a well in Western Australia. A similar incident (it was a jackup operation so wellhead was at the surface but partially tied back to a mudline suspension system where casing was landed).

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Possibly the approver of this space could provide a contact / collaboration process where the Inquiry for the BP loss control and the Commissioner of the Inquiry for the Montara loss

control can instruct the operators BP & PTTEP to provide the time and depth based mud log ASCII data while drilling the open hole section prior to running the casing, and during the running and cementing of the casing

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The other data required is the drilling contractor's time log which is used to make payment to the drilling contractor by the operator.

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A review of this data, with presentations that give both depth and time based plots, one can then demonstrate exactly what occurred and why. Additionally it may be valuable to assess why certain procedures and consumable equipment were chosen. This would include the drilling fluid system, wellhead and casing systems and the establishing of the procedures for running same.

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Re the non functioning of the BOP, imagine the forces to the equipment where a gas bubble compressed to the equivalent of a 16 ppg EMW (equivalent mud weight) and then suddenly seeing an 8.6 ppg EMW above it, and then atmospheric pressure.

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What equipment and people are designed to with stand that let alone respond.

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The key is where did the gas come from. There is a reason which can be shown from the ASCII mud logging data evaluation. This has equal importance to both events mentioned above and it must be exposed before there are more of these events.

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Personally I think offshore operations offshore GOM USA, West Australia and West Africa where a certain character of reservoir is known to exist, should be suspended until there is an understanding as to how the gas bubble got into play.

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Also, I suggest that the governments of Australia and the USA cover all the costs of these incidents and have a no blame attitude so there can be real learning across all disciplines and even to laymen in the community. That way it will avoid months of delaying while companies and people deal with litigation that only leads the legal industry profiting. There will be a lot less controversy and greater production to repay the government and indeed justifies the taxes being paid from petroleum operations.

Approval Status Approved

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SPE Posted By Mr Wayne A Needoba