DEEPWATER CONTAINMENT AND RESPONSE

APRIL 18, 2011

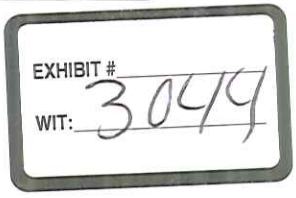
C-SPAN VIDEO

JAMES DUPREE:

All right. Thank you Director Bromwich and Tom for inviting us here to share our lessons learned and how we are advancing the deepwater capabilities in BP and how we want to contribute to that. So what I am going to do the next 20 minutes, I am going to talk about what we have learned, what we are learning and what we have done and what we are going to do to make sure this never happens again.

(Inaudible - different speaker.)

So there were several people mentioned it is about a year ago that the incident took place and nobody could have imagined the scale and the magnitude of the incident that we were going to respond to at the time. And many of the people in the room did respond as responders and also part of the unified command. And I myself, I was one of the many VP executives that responded to lead the source control effort there in Houston. And I saw firsthand the dedication and what everybody



did in order to resolve the issue, and I want to thank everybody for that.

And so as we approach the one year anniversary, another thing we can't forget is that 11 people lost their lives in this incident. And as BP, we deeply regret what happened and the impact on the Gulf Coast and the impact on the economies.

So our commitment -- and we are deeply determined to accelerate and further develop capabilities and practices to enhance safety, not only BP but in the deepwater industry. And we are committing to sharing our lessons learned globally. We were happy to participate in the ministerial form on Thursday last week.

The map at the bottom of this slide illustrates that we've -- right after the incident we put together a group to capture all the lessons and that group has had a high demand on it from around the world. All the little map pictures of the little flags indicate where people from this team and BP's team has gone to either meet with regulators, industry, contractors in order to share the lessons learned there has been a high demand on their time, a very large organization

working that, and in also capturing what their concerns and thoughts are in bringing that back to us.

I want to introduce to the Panel the vice president from BP is Richard Morrison here. He is in charge of this group, and in order to capture all the lessons learned and to work this issue globally. And he is at the disposal of the Committee for further knowledge and what we are learning. So as mentioned, there was some mention this morning there was a internal investigation inside of BP. This is the summary of that investigation.

There were 50 technical experts that were brought together to do this investigation. I didn't participate in that investigation because I wasn't on the response. But the slide summarizes four findings and eight critical factors that at the highest level, the well integrity was not established or failed. Fire departments entered the well, boarded undetected and well control was lost. Hydrocarbons then ignited and the BOP failed to seal the well. So one key point from our investigation is that we do believe it is multiparty and multicausual and it has lead to 26

different recommendations in drilling, some of which we are implementing today and most of which we are implementing today inside of BP and will implement others in the future, and I will share some of those with you later when we talk about the BOPs and cementing.

And so obviously the Committee has already seen some of the investigations ongoing. It was -- there is a tremendous amount learned already through our own investigations. We heard from presidential commission, there are ongoing other investigations and there is a lot learned about the accident itself, the response and how broad the incident was and how it affects the industry. And so we are also working -- our job is to take all these lessons and try to incorporate them, but as you know some of them aren't complete. We want to take this globally and we also want to understand things like the Montara blowout and other issues in the past. So a reminder of the scale of the response brings back a lot of memories from the actual -- the 150 days I spent. There was 140 days. There was about a 10 day gap between the point I had arrived. I was there about an hour after the event happened, but as a

reminder, you know, we were dealing with a well that was in 5,000 feet of water, 50 miles from shore, the pressure at the mudline at the sea floor was 2,240 psi, and it was around 39 degrees Fahrenheit. On the surface we had a large scale response where we had 48,000 responders mostly from the Gulf states that were impacted. It was a five state theater response. We deployed 13.5 million feet of boom. That is 2,500 miles of boom. That is the equivalent of going from New York or San Francisco with boom. That is a massive amount of boom. There was 125 aircraft flights that were going on, and over 6,500 vessels working the area. Probably around 50 vessels within one mile of the actual source. So when we think about it, we almost started a company overnight of 48,000 people to respond, two-thirds the size of BP with massive logistical challenges to overcome. So with all -- with everything that has been said this morning and I think will be said later on this afternoon, BP had to take these ----- and try to categorize them in five key areas. And these are these are the areas that we think where the learnings are but these are also the areas where we think we can advance the

capability. So number one area is in prevention and drilling safety, the ability to keep control of the well from spud to abandonment. The second is containment. It is to stop the flow of oil. If number one doesn't work, it is the ability to stop the flow of oil before it has an environmental impact. The second -- the third is the relief wells. The planning and preparation of the relief wells so that if the killing of the well from the top, we have the option to also stop the flow from the bottom. Authoritative learnings is around spill response and how to manage the vessels, the simultaneous operations around the site, so many airplanes and so much data coming together. And a third is crisis management, which is really about decision-making. You know, how -- what is the best way. What did we learn about the best way to make good decision during the response with so many stake holders involved.

So what I wanted to do is take you through these five areas and briefly touch on them. So the first one is prevention and drilling safety. It is obviously I believe the highest priority in the future, so. And it can be attacked on multiple dimensions. And I am just going to

highlight two. One is enhancing equipment and procedures. It is also in the area of BOP testing, cementing, well integrity testing, rig audits and how we work with contractors.

Now, what BP is doing in this area right now is -- we have changed our equipment with BOPs to issue -- we run two blind shear rams on every deepwater well we drill. We are now requiring third-party testing, lab testing of our cement slurries, independent testing of cement slurries. We have a -- internally now on the BOPs we require verification of any third-party -- a third-party verification when any BOP is pulled out of the water. So it is verification of its testing and it is an achieved testing, verified by a third-party to ensure it can act and operate the way it is intended to operate and also we are looking at competency and studying competency internally.

So focus on safety and risk management, things that have happened inside the company, so we have got a newly formed independent line called safety and operation and risk. It has been discussed a lot by our CEO and Bob Dudley and I am sure you have heard a lot about it. It is a new independent organization that manages the safety

and risk inside of BP, has direct line to the CEO, works in conjunction with the organization for risk management to assure that the risk and mitigation plans are appropriate, conversations that are being had are the correct ones and that the mitigation plans are being acted upon in a prudent way.

At the same time, we took our drilling organization and reorganized the upstream and turned it into a global drilling organization so that we could systematically drive the system's standards throughout the drilling organization, and also it will bring the best of BP to every well we drill and be very consistent on how we do it.

Lastly, we changed our performance management practices to make sure that every -- that every employee is aligned directly to the safety, goals incorporation. And something else that has happened -- we are proud to announce that we had -- retired Admiral Skip Bowman who is from the Nuclear Navy join our Board. We have also had Brenda Nelson who brings deep auditing experience. There is a vice chairman of KPMG and the United Kingdom has also joined our Board. So we have

strengthened out Board with individuals that understand high hazard activity and we have also strengthened our Board with individuals that understand auditing and independent auditing.

A little more on prevention and drilling safety. So three key areas that we are actively working. And one is the procedures and technical practices refreshing all our procedures and technical practices and to emphasize -- with BOP management and an emphasis on third-party audits on the BOPs. And the second one was the BOP management. The third is cementing oversight and as I mentioned there was a key recommendation from investigation to strengthen our oversight by cementing. We are also implementing new standards for cementing and backup lab audits.

So moving onto the second area of the five key areas is containment. And no matter how good you are or how safe you think you are, there is no -- there really is no substitute for a backup plan and preparation for the worst-case scenario here. And we are looking at this in multiple fronts on containment. It is really about the -- implementing -- you have got to have immediate access to capping equipment. This has been a

common theme as we have gone around the world and it has obviously been adopted by the regulatory that we should be able to access rapidly capping equipment in case of an accident. BP was the fifth member to join the MWCC. I am also on the Board of the MWCC with Charlie here. BP has taken equipment from the incident, all the equipment used in the incident and moved it over to the MWCC. There were over 480 different procedures written with that equipment. We have taken down procedures, codified them, put them with the different pieces of equipment and we are now transferring that across to MWCC and training the MWCC team on how to execute the equipment so the lessons learned aren't lost, especially how to deploy the equipment and what worked and what didn't work.

I also said something about readily deployable so that immediate access capping equipment, the MWCC has set up a capping staff. There is other capping staffs being built. BP is the project manager of the capping staff being built in the UK right now. Something we need to look at is the quick -- how can we deploy things quicker? How can we get things to remote -- smaller types of

systems that are similarly in the effect that it will be important in the future.

So that the second item here is the rapidly deployable collection systems. If you remember the Macondo event, you know, the riser had fallen over at the time when we approached the well. You know, we actually had two sources of hydrocarbons fully -- and later on it became three. And we had -- we had hydrocarbons -- the riser -- we had a drill pipe sticking up that had oil come out of it, and then later on we had a kink in the riser. So debris -- there is a lot of debris involved in the area -- we had to clear that debris in order to prepare the well for capping. At that time, deploying collections systems is an option. And obviously, your first line of defense it to cap the well, but you can deploy collection systems to try to mitigate some of the impacts while you are moving the debris or preparing the well site. And as you -- many of you saw we built top hats, rip tools, some of those -- to name some, a top hat, a rip tool, we had a coffidan (phonetic) that we tried to deploy. Some were successful; some were not successful. In this case as well, we built many things in parallel, other things that we did

not deploy that would have not been successful that we have built and we have moved that technology on over to the marine well containment company.

Lastly, containment in simultaneous operations kind of in a 4-D area mainly close to the rig site or the source patrol site. There are as many as 50 vessels at one time working in that area. At one point in time, we had flares going on on the Enterprise and T400 and we were flaring as well 50 vessels in a small area all working on a rig site with ROBs. We had 16 ROBs in the water at one point in time. At the same time we would be littering crude oil sometimes off of these vessels all in one small area. So in order to manage this area, and I am happy that there were no accidents, no incidents during the whole response in this particular chain of operations. And in order to manage that we used a lot computer graphics. We had instant command out there, instant command inside, and a very clear understanding of what was going on 24 hours a day in that immediate area with all the captains working together, a lot learned on simultaneous operations that needs to be shared.

So relief wells, so the typical solution in well control is to intersect the well deep, kill the well, which was the solution in the Montara event. In this case, the Macondo event, we drilled two relief wells. We had the rig on location for seven days. We were very fortunate we had a rig free, a large rig free that we could call upon.

We spudded the well -- we planned and spudded that well in 12 days and was at the verge and eventually killed the well, the annulus or tested the annulus with the well near the end of the event. So the other -- the big technology here that is really important to talk about and that needs to be advanced is this range in technology, the little picture in the bottom right-hand corner, a range in -- as you drill your relief well, as you can imagine this room being dark and you are trying to hit a little eight inch area in the corner, standing in the corner with a pole, you have to imagine doing that from miles away. And so what you need to use -- this relief -- this magnetic technology to be able to locate and sense your distance from the well board, and you have to intersect the well board deep in order to make an

effective kill. And this technology is only really available on wire line. So in order to run it -- in order to figure out where you are at with your bed, how close you are to the well, you have to pull all the systems out which takes a day, run your wire line in takes 12 hours, pull it out and attempt to run everything back in two to three days every time you are wanting to understand where you are positioned to the well board. And during the event, we advanced this technology with contractor where we wanted to use a ranging while drilling type technology where we could actually put the tools on the end of the bit while we were drilling and send mud pulses up to the surface as to interpret exactly where we were all the time to avoid us from having to pull out of the well. We used it near the end of the event. And it wasn't proven at the time, so it was important for us to make sure we hit the well so we took some -- we actually did have to do what we call open hole ranging several times. And in this technique, you are trying to actually circle around the well and know where it is so you can turn in and directly hit it. And so it is a critical piece of technology that needs to be advanced. So we

advanced it a lot during the response and it needs to continue being advanced. It will change the amount of time for a relief well to respond by an order of magnitude once it is near the original well.

So I touched a little bit on a scale of the intensity of the response and the spill response was very public to the -- very visible to the public and we did climb a steep learning curve.

In here, there were three areas of significant advancement that I would like to discuss briefly. One of them is one subsea disbursements. This picture is a very kind of vivid -- it is a picture that many of you have seen before. It is the top of the well head. But in the picture, you will see the little white -- it has got a tube going over it in the well. It goes deep in the well, and that is where it disperses -- the subsea dispersants are being injected into the oil stream before it comes out. You know, a couple two or three feet deep into the oil stream. The primary purpose of the subsea dispersants was to knock down the VOCs, volatile organic compounds that were coming directly to surface where the 50 vessels were and thousands of responders to remove

that risk to those individuals of the compounds. We believe it was very effective in doing that because we could tell the difference when we were injecting the dispersants, and we were injecting dispersants because we were constantly monitoring the air quality above the site.

Now, the science is still out on this. There is a lot to study here, a lot of different types of dispersants. Some -- a dispersant for a subsea injection could probably be a lot more raw dispersant than a dispersant that has to work on a surface, so there is different characteristics. There is a lot of -- there is a lot of science to work on here and how effective it was.

Instance to burns, my colleague has said several times that he could count the number of instance to burns prior to the even on one hand. We did actually 400 of them during the response. Some of them you are seeing here. The advancement in burn boom technology was also critical, because we learned how you could skim and try to keep the burn going. In one case, we skimmed for about 11 hours. So we are skimming and moving and collecting oil and burning it at the same time. A lot can be done here in the advancement of kind of

the burn and boom technology.

And lastly, this burning and skimming. So the largest that at-seen in the mechanical recovery in US history, we deployed about 60 open water skimming systems, developed new skimming techniques, enhanced booming, deployed advance separation technology on skimming vessels and barges. Some of it successful and some of it not successful. So we are working today to boost the response capability of our oil spill response around the world by sharing all these experiences. And I think that one of the most important things we learned here was that, you know, you have a lot of this equipment in the water, but getting the equipment to the oil, the guys on the water can't always see the streamer of oil that is, you know, 500 feet or, you know, a couple thousand feet away. They need good logistical contact in order to get to the oil. So there was a lot about the optimizing placement and the efficiency, the 125 flights we talked about was important in doing that, being able to try to get the skimmers to the oil to be more effective.

Lastly, crisis management, like I said, this about -- for us, it is about making good decisions

with all the stakeholders. There are really four key areas in crisis management that we wanted -- that I wanted to touch on.

So it took us a while to establish a rhythm here in incident coordination and planning. It is giving the breadth of stakeholders across -- you know, we are talking about five states. Source control in Houston, the full instant command in New Orleans. So the -- and the actual response hinged on a unity of effort in bringing it all together. A lot of phone calls, a lot of conversations, a lot of scheduling. And then we learned that eventually we were planning day by day and then we started to plan week by week. The better planning we did the more effective we became and our efficiency kind of grew over time. So there is a lot of learnings here about how to make that efficiency kind of happen on day one in planning of the systems on such a large response. Oops.

So unified command and outreach. The unified command system worked well but, you know, the scale of this tested the limits of a single unified command area. And, you know, to most in the five states, this spill was local. And so we

had to open branch offices and go local. There were 19 branches opened and we sent representatives to each of these branches. So we had branches all the way down from Galveston all the way to Miami, because it is local. People want to speak to somebody that is knowledgeable about what is going on, and they want to talk to them right there in their space. And also, they want to know that their issues are being transmitted back to the your five commands. They are hard to do that from a single area.

Also, we learned that by opening branches we were much more effective in how we deployed and executed on the ground. So if we could push the execution out to the branch, the branch can execute it and come back.

Another big issue that we talked about, and I talked about the 125 aircrafts, the 6,500 vessels, amount of boom being laid, a common operating picture was something that we have struggled to get together early on. But it is something that became very, very valuable later. So as you can imagine, planes are coming in, reports of where stringers of oil are at, amount of boom being deployed or picked up in certain areas coming in

every day. So with over 200 sources of data, how do you get it on one map and have that in the hands of people across the five states in the different branches so they can walk in the office of whomever is interested and show them what boom was deployed and their cost line, what boom is going to be deployed tomorrow, what oil was found. You know, it this kind of tool that we actually perfected and used later in the response, very powerful. How do we get the -- how do we do that much earlier on? And I already mentioned quite a bit about the simultaneous operations being managed through unified command and being used for doing the operations.

And moving forward, we are going to extend the use of our instant command system to further enhance our training and experience, so our responders have the lessons learned for instant command. They will have formalized our strategy for centralization and local atonomy. You know, where would these branches be? Who are the right people to be working with? Have that known up front and work on this common picture, this common operating picture capability which is critical during the response for decision-making and some

of the points that other members have made.

So that is where we are on the five key capabilities. So I hope this gets you a better understanding of where we are at and our commitment going forward is to take the lessons we have forged from the experiences, enhance the technology in these five key areas, work with industries and governments around the world to implement these technologies and to implement the lessons learned and encourage others to do so as well. So thank you very much.