Subsea Containment Summit remarks by Andy Inglis, BP CEO exploration and production

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Good Afternoon,

Thank you for the opportunity to join this discussion panel today. There is much to learn from the response to the Deepwater Horizon Incident – for bp, the industry and government. Today I want to talk specifically about bp's learnings on Subsea Containment and offer a few thoughts on how industry and government can move forward together. There are equivalent learnings for the surface response, and we have committed to work with the BOEM to build these lessons into future spill response plans.

I would like to begin by saying how much everyone at bp has been saddened by this terrible accident which so tragically cost the lives of 11 people and injured many others. I deeply regret what happened and its effect on the families of those involved, as well as its impact on the communities and the environment of the Gulf Coast states.

Containing the Macondo blowout presented a huge challenge. BP and our industry colleagues had Spill Response Plans in place that conformed to regulatory requirements. However, no one anticipated an event where this particular series of mechanical and human failures would occur.

The Macondo well is at a water depth of 5,067 ft. This is by no means the deepest water depth that has been drilled in the Gulf of Mexico, but it did pose a unique set of logistical and operational challenges - temperatures are less than 40 degrees Fahrenheit, and seafloor pressures greater than 2200 psi. At these pressures and temperatures, methane gas flowing from the well was transformed into ice-like crystals known as hydrates which complicated containment efforts.

In addition, the state of the well and riser on the seabed following the incident made access to the well very difficult. The 5000 foot riser connecting the well to the Deepwater Horizon fell to the sea bed and was bent and breached in several locations. The first challenge in the early days of the response was to survey the status of this equipment and locate the source of the oil and gas flowing into the sea.

Given the inability to successfully close the Blow out Preventer and stop flow from the well, the challenge was to fully and safely contain the flow and minimize any leakage into the Gulf of Mexico while relief wells were being drilled to permanently kill the well.

As I reflect on the response over the past five months, I believe three factors were critical to the conclusion of this incredibly challenging endeavor. These are:

- Innovation,
- Know-how; and
- Expertise

Let me give you some examples.

First on Innovation. From the beginning, the relief wells were envisaged to be the final step in permanently killing the well. It was critical that these wells were drilled safely and efficiently to intercept the Macondo well. To put this in perspective, this requires hitting a 7" target at a distance of 3-1/2 miles. Using existing technology (openhole magnetic ranging), 17 ranging runs were performed to accurately position the relief well, and I am pleased to say we hit the target the first time. Each ranging run required the magnetic tool to be deployed on wireline from the surface, a process that took approximately 36 hours. In total, the ranging runs added over 3 weeks to the time it took to successfully intercept the well. Whilst the relief well was being drilled, we developed a tool that allows ranging while drilling, eliminating the need for time consuming tool deployment from surface. This technology was proven in the final intersect of the well. This is just one example. The challenge going forward is to ensure this type of technology development for subsea containment continues beyond the immediacy of incident response.

Second – know-how. I'm sure many people here today will remember the unsuccessful deployment of the containment dome early in the response effort. This dome was around 20 ft square and three stories tall and designed to contain the flow from the well. Why was this unsuccessful? The operational procedures, while detailed, did not fully contemplate the impact of hydrates inside the dome during installation in these conditions. We took this learning into account for the installation of the sealing cap. Ahead of its deployment we ran over a hundred trials onshore to test the installation procedures for any scenario we could envisage. This time and attention led to the successful installation of this cap and the sealing of the well on July 15th. The challenge going forward is to make sure the know-how embodied in these and other detailed procedures developed during the response is not lost.

And third - expertise. In the early days following the incident, it became apparent that it would have been extremely difficult for any one company to address the challenge. Therefore, we welcomed the offers of expertise from other deep water operators and service companies world-wide. Under the direction of the National Incident Commander, the U. S. Coast Guard, BOEM and the government science team, played a particular role in reviewing each step of the subsea containment effort and I would like to acknowledge the contribution they made in response to this incident. The challenge going forward is to maintain this collaboration between industry and government. It is our hope that the subsea expertise developed in the National Laboratories during this response will be expanded and available if needed in the future.

So, given all we have learned, what exists today for subsea containment includes key elements that weren't in place on April 20th. We now have:

- An inventory of immediately deployable open and closed containment systems proven at depth with associated operating procedures.
- Proven systems for processing and transporting contained oil including FPSOs, free standing risers, and flexible subsea flowlines. This includes equipment to reduce downtime in the event of hurricanes.
- Demonstrated methods to mitigate hydrate formation.
- Techniques for system diagnostics and advanced surveillance (for instance, digital radiography at depth).
- Plans and organizational models for immediate stand-up of dedicated source containment.
- Enhanced technologies and procedures to drill relief wells in deep water.
- And above all else, an enormous amount of experience in using all of the above.

So what are the next steps? The nature of the incident, including the scope, scale and complexity has clearly driven significant advances in response capability for the industry as a whole. These advances were made possible by utilizing the talent of the very best people, be they from bp, industry, or government. From the onset we committed that we would make public our lessons learned in subsea containment and surface response. We are also determined to preserve for the industry the capability we have developed. To this end, we have signed an agreement with the founding members of

MWCC, the Marine Well Containment Company, with the intention of bringing our equipment, know-how and expertise to this venture.

We believe MWCC will be the foundation for the industry to build upon the learnings I have identified today. First, in the area of innovation it is critical that MWCC has a robust R&D program that ensures its equipment and capability are cutting edge. Conducting this research with the National Laboratories, with the secondment of staff between industry and the Labs would also help build expertise. Second, in the area of know-how, we must maintain robust operating procedures and trained personnel through real world drills of subsea containment. Finally in the area of expertise, MWCC must hold a core capability and be able to draw upon an established list of the best minds in industry and government when need.

Thank you for your time today, and I will now hand over to Rex Tillerson for his remarks.