

Effects of Water Depth on Offshore Equipment and Operations

Topic #4: Pre-Incident Planning, Preparedness, and Response

PURPOSE:

These six white papers will be used as baseline starting points for discussions in each of the six breakout sessions at the Nov 2-3, 2011 BSEE/ANL/Industry workshop on the **Effects of Water Depth on Offshore Equipment and Operations**. They are meant to provide a brief background of the topic and identify current trends and challenges in these areas. Each of these papers is intended to address:

- Current technologies and challenges with implementing those technologies
- Trends and/or notable technologies envisioned for the near and long-term
- Coordination and communication to help align the efforts of industry and regulatory agencies
- Human Factors in safety (e.g. training and procedures)

SCOPE:

The scope is primarily to identify gaps or challenges in Pre-Incident Planning, Preparedness, and Response at different water depths with specific focus on the barriers that exist above the mudline (Wellhead & BOP for subsea operations and Wellhead, Riser and BOPE for Surface BOPE) that separate the hydrocarbons from the environment.

Below are some focus areas:

- *Gaps in regulations, standards, industry practices, collaboration, and technologies*
- *Coordination and communication to help align the efforts of industry and regulatory agencies*
- *Human Factors in safety (e.g. training, procedures)*

This paper discusses Pre-incident Planning, Preparedness, and Response at different water depths to a major well control event (similar to the Macondo Incident). More specifically the scope includes the wellhead down along with barrier(s) between the hydrocarbons and the environment.

- Immediate – The first 48 hours post incident, and mainly rig based or close area to the rigs
- Intermediate Timing – After the first 48 hours post incident, including rig based and beyond. The Intermediate time-frame ends when debris removal begins, the capping stack arrives, or when the flowback system arrives on site.

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INTRODUCTION / FUNCTIONAL BREAKDOWN

Identify the problem (Onsite Assessment): Broach, Hole in Casing, BOP issues, etc.

Start the planned solution listed in the BOEMRE approve well plan.

Assess the effectiveness – Is it working, or Call the Cavalry?

Equipment on the Rig:

- Rig's BOP Systems (Auto Shear, Deadman, Acoustic, Other)
- Storm Plugs on Rig
- Rig's ROV
- Boat based ROV's in field area
- Subsea Accumulator Manifold (SAM)

Equipment in Region:

- MWCC Equipment Setup – Quick Response Equip Only
- Helix Group Equipment Setup – Quick Response Equip Only
- Clean Gulf Setup – Quick Response Equip Only
- USCG Quick Response Assets
- Other Industry Oil Spill Equipment – Quick Response Equip Only
- Oil Spill Dispersants; Subsea and Surface Applications– Quick Response Equip Only

Incident Training: How well trained is the industry, BOEMRE, USCG, and others in a Macondo style incident.

❖ **How can the Industry Train and Drill together to provide the most benefit to a well-coordinated response?**

- Current Training exercises become an INC session; is it possible for a training only session and a 'graded' training exercise with all parties?
- SC Response Training Requirement for DW IMT by their respective response organization.(HWCG or MWCC)

❖ **Industry needs clear demarcation between source control and oil spill cleanup.**

- We already have a Source Control IMT specific to containment.
- We already have a Spill Response IMT specific to Clean Up.
- Regulators should have a clear demarcation between their jurisdiction too to improve and focus oversight during a response.
- Jones Act Issues during an emergency

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Paramount in this discussion of Pre-Incident Planning, Preparedness, and Response is that human life comes first and the environment second.

REFERENCE DOCUMENTATION

Government Regulations and NTLs:

- CFR 250
- Interim Final Rule

Industry Standards:

- API Specifications
- API Bulletin 97 (Draft) – Well Construction Interface Document & Guidelines
- API RP 96 Part I
- API RP 17H (ROV Interface Specifications)
- Helix Well Containment Plan
- MWCC Well Containment Plan

ANALYSIS

Possible directions include thoughts on:

- ❖ **The MWCC and the Helix Group capabilities and weakness's?** (Education: Industry & Regulators must realize that more capabilities are coming online as time passes)
- ❖ **Technical challenges of an oil spill at deep water depths?**
- ❖ **Vertical Access Limitations based upon VOC?**
 - Why is dispersant approval needed for subsea dispersants if already approved by EPA?
 - Approved dispersants and dispersal approval process is lacking (few options)
 - Can the global supply of dispersants be factored in if availability to the US GOM is timely?
 - Effects on capping stack installation.
- ❖ **Technical challenges of a broach at deep water depths?**
 - Does water depth really matter on a broach?
 - Shelf may have worse impact due to proximity to shoreline.
- ❖ **How does one determine competency for well control operations and maintenance of well control equipment?**

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❖ What are the current mechanisms for aligning the Industry and the Regulatory Agencies?

- Jurisdiction?
- Improved decision making process.
- Those who drill together will respond mo-better.

❖ Gaps in regulations, standards, Industry practices, collaboration and technologies?

- Where is the clear demarcation between USCG and BOEMRE? Is BOEMRE to take on source control and USCG to take on the Oil Spill? We don't need two agencies calling the shots.

❖ How should a response to Gas with associated condensate differ from an oil response?

- Liquid hydrocarbon will be significantly less.
- Based upon Liquid HC, the consequence and response may need to be different.
- Worst Case Discharge Volumes are not equal to Cap and Flow Capacity – How to educate all on this point

CONCLUSIONS / FINDINGS

- Note areas that could benefit from discussion at the workshop
- Include any preliminary recommendations to BOEMRE, also for workshop discussion

ATTACHMENTS

