

## **Remembering the Deepwater Horizon Oil Spill**

Audience Q&A with Panelists

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**Questions 1:** Vice Admiral Salerno pointed out the critical role of safety culture in improving the safety of offshore operations and preventing accidents. What is the opinion of the respected panelists as well as Admiral Allen on how industry and regulatory bodies can join forces to assess and improve safety culture in the industry?

**ANSWER:** Admiral Thad W. Allen:

What is needed is a hybrid framework with three components:

1. Include Safety Case elements in the regulatory approach, especially in circumstances involving new or emerging technology.
2. Change requirements to mitigate risk where needed by regulation.
3. For high risk or critical systems: independent third-party inspections informed by regulation/ industry standards.

More specifically, the Safety Case approach generally involves a negotiated agreement between Industry, Government, and Labor on the standards that will be applied during a drilling/production project. It is the regulatory method used in a number of countries and is certainly different from the U.S. system. That said, there is room for Safety Case elements to be included in the U.S. construct, especially in situations where new or emerging technology is being contemplated and for which there are not yet regulations or even industry standards to rely upon. This requires a detailed engineering analysis and opens the door for the safety case type of dialog.

**Question 2:** Why is FEMA not represented? Isn't it the Fed Agency that coordinates all response and recovery efforts? Do you think you only need two FEMS representatives? One to sign check during the daytime and the other at night? Did FEMA coordinate the immediate response and the eventual short

and long term recovery efforts via the Response & Recovery Plans via the subject matter expert agencies and departments?

**ANSWER:** Admiral Thad W. Allen:

FEMA's mission is to provide support under the Stafford Act to state and local governments and individuals impacted by disasters pursuant to a Presidential Declaration. Resources are then provided to the local government from the Disaster Relief Fund (DRF). On occasions, that response may overlap with federal jurisdiction over oil and hazardous material discharges. The funding for those responses is provided from the Oil Spill Liability Trust Fund (OSLTF). Under OPA 90 the Responsible Party is obligated to reimburse the OSLTF for expenses incurred by the federal government in the response. When that occurs, the Coast Guard coordinates with FEMA on the source of funding and when needed the response is managed under National Response Framework (FEMA) through Emergency Support Function (ESF) #10: Oil and Hazardous Materials Response. In the case of DWH, the spill occurred beyond state jurisdiction and was a federal response. There was no authority to access the DRF. During the current COVID-19 pandemic, both FEMA DRF funding and HHS emergency funding are being accessed in a manner similar to what would happen with an oil spill during a natural disaster.

**Question 3:** Recognizing the paramount importance of collaboration between high-level leadership and scientific experts (e.g., Dr. Lubchenco and Admiral Allen), to avoid scientists shouting into the void, we need leaders that are willing to listen and partner with us. To understand the limits of mitigation and restoration, scientists need information from leaders in response, industry, and legislators/policy. Can we promote such communication/partnership on a systematic basis for catastrophic event responses? Or, are we reliant on building these partnerships on a case-by-case basis?

**ANSWER:** Admiral Thad W. Allen:

The basic elements exist to create this framework with NOAA, EPA, and others. What might help would be to insert a required science problem/demand/dilemma into the SONS exercises and publish the results. We should also institutionalize a process similar to that used in DWH where the CG R&D Center became the node to process and screen ad hoc proposals during

the operations. Make “best available science” a doctrinal part of the NCP.

**ANSWER:** Dr. Jane Lubchenco:

Good point! This is exactly why it is important for agencies to have both a high-level science advisor and an external science advisory board. Similarly, the expectation that scientific information would be available to help inform an oil spill response is built into the naming of NOAA as the science advisor to the USCG for spills. But of course, none of those mechanisms will work or work well unless the high-level leader chooses to listen to and use the science, or worse, to suppress it. This is where Scientific Integrity policies can help (though not prevent) ignoring or cherry-picking scientific information. In the end, I believe that three things are needed (1) a mechanism for a leader/organization to routinely obtain the best available scientific information and advice, (2) a competent scientist or SAB who understands how to communicate science in plain language and in ways that are relevant to decision-making, and (3) leaders who respect and use scientific information and evidence-based approaches to decision-making.

**Question 4:** With the oil industry challenge and Arctic plans on the back burner, what is the next spill challenge?

**ANSWER:** Admiral Thad W. Allen:

1. A catastrophic event (seismic related?) that creates an uncontrolled subsea discharge from the seafloor through rock formation. Without control, the discharge would continue until the water pressure was equal to the pressure from the discharge. We lack undersea technology to effectively control or recover oil in deep water.
2. A deepwater pipeline break.
3. A combined or hybrid disaster involving a SONS. How would we prosecute DWH today during a pandemic?
4. There is always the possibility of a multinational SONS (Cuba, Bahamas, Mexico, Canada, or Russia).

**ANSWER:** Dr. Marcia McNutt:

In my view, the next spill challenge is to prepare for the unexpected – to be ready to confront the next oil spill disaster rather than putting effort into

becoming ever more prepared to deal with the last one. The Exxon-Valdez oil spill in Prince William Sound was an environmental nightmare. Oil spill responders spent the next decade preparing to address another tanker spill: where the release is a fixed volume of crude oil discharged at shallow depth. Everyone was unprepared to confront Deepwater Horizon because it was a deep release – 1 mile below the ocean surface – with an unknown flux, and no accepted or calibrated methods to measure the rate of release from the damaged well head. Surely there will be future oil spills, but likely they will have unexpected features that complicate the response. The National Academies' Gulf Research Program has developed the Offshore Situation Room, a gaming-type environment that allows industry professionals, scientists, government policymakers and managers, and local leaders to confront various scenarios of what could happen, rather than what already has happened. Many advantages accrue from engaging in these scenarios, including building cross-sector team mentality and learning ahead of time what mitigation measures can be taken now to prevent the worst consequences of possible future spill challenges.

**Question 5:** Regarding the enforcement tools that BSEE can use to ensure that oil and gas companies comply with safety regulations (e.g. fines and suspension of operations): can BSEE exercise those enforcement tools against non-lease holders, for example, companies that provide services to the operators, drilling services, cementing services?

**ANSWER:** Vice Admiral Brian M. Salerno:

The leaseholder is the party primarily responsible for all activities that occur on-site. Part of the philosophy behind Safety and Environmental Management Systems (SEMS) is that contractors will align with the SEMS plans put in place by the leaseholder. With the majority of activities typically conducted by contractors, this is an important aspect of SEMS. BSEE has taken action against contractors in the past for particularly egregious violations, but always in conjunction with action against the leaseholder. There were legal challenges to this approach, so it may no longer be an active enforcement tool.

**Question 6:** Can someone cite an example of weakened regulations? Are the changes more towards clarification and utility versus weakening?

**ANSWER:** Vice Admiral Brian M. Salerno:

Most of the provisions of the 2016 Well Control Rule remained intact in the 2019 revisions. While there were many clarifications in the revisions, such as a process for obtaining approvals to depart from the default drilling margin in the regulations, other new provisions were designed to extend additional flexibility to the industry. One example of the latter was the removal of the requirement for BSEE Approved Verification Organizations or BAVOs. BAVOs were part of the original rule as a way to ensure qualified 3rd party oversight of tests on drilling systems, including BOPs. In the revised rule, 3rd party oversight is retained, but they are no longer required to be BSEE approved.

**Question 7:** Is there a reasonable estimate of the additional costs (per barrel?) of the improved and increased regulations and safety measures/procedures? I ask this from the perspective that these costs are actually part of the total cost of sea-floor extraction and should be sustained in the future.

**ANSWER:** Vice Admiral Brian M. Salerno:

I am not aware of a per barrel estimate of the costs, and if one were to be developed, I believe it would fluctuate over time as production levels change. However, the rule-making (on 2016 Well Control Rule) did include an economic cost/benefit analysis that looked at the cost of the rule versus the societal benefits over a 10-year period. The benefits of the rule included the avoidance of fatalities and oil spills. The conclusion from this analysis was that societal benefits far outweighed the costs of implementing the rule.

**Question 8:** Please address issues and unique sets of problems associated with offshore rig sites at the North Slope of Alaska.

**ANSWER:** Vice Admiral Brian M. Salerno:

Many drilling/production sites in the Beaufort Sea are on artificial islands, which allow far more protection from moving ice than would be possible from a Mobile Offshore Drilling Unit or traditional offshore production platform. These operations tend to occur in relatively shallow water, and the wells are normal pressure, unlike many of the high temperature/high pressure wells that are now common in Gulf of Mexico deepwater operations. Naturally, any spill response

off the North Slope would be complicated by temperature extremes and would require methodologies to remove large accumulations of oil from ice surfaces. Offshore drilling in the Arctic was the subject of a separate rule-making (the "Arctic Rule"). This rule took into account the unique circumstances in the Beaufort and Chukchi Seas, such as extreme weather, short seasonal operating window, absence of logistical support capability (e.g., deepwater harbors; emergency response resources) and essentially required operating companies to build compensating capabilities into their operating plans.

**Question 9:** Was the USGS self-deployed or were they Missioned Assigned by FEMA?

**ANSWER:** Dr. Marcia McNutt:

USGS deployed the staff on its own accord, in the very early days following the explosion on the Deepwater Horizon platform, not through FEMA. At that point, the spill had not yet been declared a SONS (Spill of National Significance), no oil had yet come ashore, and FEMA had not yet entered into the picture. The purpose was to document the condition of the ecosystem before any impacts from the Deepwater Horizon oil so that it would be possible to assess whatever damages might be done on account of the spill.

**Question 10:** "Criminal" aspects? Can you explain?

**ANSWER:** Dr. Marcia McNutt:

BP paid a settlement under the Clean Water Act based on the number of barrels of oil released by the well minus the number of barrels of oil recovered or collected at the surface as a result of BP's mitigation efforts. The payments under the Clean Water Act were substantial and have funded a number of restoration projects and scientific research analyses in the Gulf region.