

Subsea Application of Dispersant in Deep Oil Spills: Lessons Learned from the 2010 Deepwater Horizon Blowout

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3:00-3:30 pm Coffee Hour

3:30-4:30 pm Seminar

Abstract

On 20 April 2010, an explosion occurred on the Deepwater Horizon (DWH) drilling rig in the Gulf of Mexico killing eleven workers. The blowout preventer failed due to buckling of the drill pipe, resulting in the release of massive quantities of crude oil and natural gas at a depth of about 1500 m. The spill persisted for 87 days until it finally was contained by pumping cement through two relief wells. The DWH spill was the largest oil spill on water and the third largest in history. An estimated 760 million liters of crude oil and 4.5×10^8 kg (~600 million scm) of natural gas were released into the deep ocean. During the subsequent containment and clean-up operations, about 6.8 million liters total of COREXIT 9500 and 9527 dispersants was applied to the spill. For the first time, however, dispersants were employed sub-surface; approximately 3 million liters were injected from a wand mounted on an ROV at the broken wellhead. This profoundly affected the properties of the spill plume and the near- and far-field dispersion of the released oil contaminant. This seminar presentation will discuss the implications of subsurface application of dispersant in deep oil spills and the results of related laboratory experiments being conducted at the Hawaii Natural Energy Institute

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