

Deepwater Horizon Blowout

April 20th, 2010 was a day that had changed the oil industry and safety standards for years to come. It has been 11 years since the Deepwater Horizon oil spill had become the largest marine oil spill in history. The oil rig was leased by BP and owned and operated by an offshore company called Transocean. The drilling reached a depth of nearly 1 mile, at 5,000 ft deep. The Deepwater Horizon drilling rig was 9 years old and was located 41 miles off the shore of Louisiana. There had been 11 workers that were never found after a 3-day search and believed to have died in the explosion. 94 were rescued by lifeboats or helicopter, with only 17 who were treated for injuries. Nearly 5 million barrels of oil were discharged from the rig and that began a very long cleanup and investigation process.

At 7:45pm on April 20th, the high-pressure methane gas started expanding upward into the marine riser and rose into the drilling rig. That pressure then ignited at the top and exploded, creating smoke and fire that could be seen up to 40 miles away. BP attempted to activate the Blowout Preventer (BOP) that was designed to close the drill pipe that oil was drawn from, but they had no idea that it failed. Since the preventers failed the last resort is a pair of blind sheer rams, that can be activated manually or by automated emergency systems. The situation that put this rig into major danger is that since the BOP's failed, the oil and gas from the ocean floor went into the riser chamber undetected and bypassed all of the emergency stop barriers. Once it started blowing drilling mud out onto the rig, that is when the workers started to close those BOP barriers. The upper annular preventer was closed by the workers, but it didn't seal the well as intended. Then they closed the blind sheer ram, which shortly after they found out it would only be a temporary fix. Since the pressure in the drill pipe climbed, the pipe then buckled causing the blind sheer ram to leak oil and gas. The devices couldn't shut out the oil because they had malfunctioned. Once it reached the top of the rig, the hydrocarbons in the oil and gas found an ignition source and created an explosion.

After the blowout happened there were recommendations that the government programs inside of the Department of the Interior Minerals Management Services should be reformed to separate out the Safety Bureau. They wanted the Safety Bureau to not be responsible for the leasing and development of the oil and gas tracks in the Gulf of Mexico. The next step was that the National Commission on the BP Deepwater Oil Spill and Offshore Drilling challenged the industry to find a way to stop and detect a blowout faster than what occurred at Deepwater Horizon. They also recommended that there should be a more systemic way to assess the overall safety risk, not just individual processes, but in a collective way. The Commission had also pushed congress to create a law and increase the liability limits of \$75 million, to a much larger amount for an offshore blowout from an offshore facility.

There is a very important step of maintaining the proper safety margin of pressure inside of the drill pipe. Since the BOP in the Deepwater horizon hadn't been inspected nor had it been working right, the Oil Spill Commission rolled back the requirements that there be a third-party independent inspection of BOP's. There also became a requirement to have continuous 24/7

onshore monitoring by technical teams who are watching what is happening at the well and communicating with those who are out on the rig. OSHA had made a statement about their responsibilities based on their regulations, that they are not responsible for regulatory or enforcement over the oil drilling rigs and production platforms that are located on the Outer Continental Shelf. According to OSHA 29 CFR 1975.1, this prevents OSHA from regulating a working condition if it is regulated by another agency of the federal government. However, they are there to ensure that workers are protected from hazards that are associated with the cleanup of the spill. Oil spill workers face hazards from heat, falls, drowning, fatigue, loud noises, sharp objects and exposure to crude oil and chemical byproducts. It is their top priority to ensure that the cleanup operations are done safely and as effective as possible.

The Environmental Protection Agency (EPA) has a priority of preventing, preparing and responding to oil spills inland and around the water of the United States. They are the lead federal response agency for spills that happen. The oil spill gave way for many lawsuits against Transocean Ocean Holdings LLC, totaling up to \$4 billion in civil and criminal fines and penalties. Of that amount, \$300 million are in criminal fines and to continue the on-going operation in the governments criminal action. Then, \$2.54 billion went to resolving the National Fish and Wildlife Foundation, with the remaining \$500 million to create the Gulf Research Program. The EPA came out shortly after the lawsuit ended and stated, "EPA will continue to work with Department of Justice and its federal parties to vigorously pursue the governments claims against all responsible parties and ensure that we are taking every possible step to restore and protect the Gulf Coast ecosystem". Safety had changed that year for the better protection of the workers on the rig, those who were on the clean-up efforts and for our environment. There are still a lot of things that we can learn from, but each step is making our world safer and healthier.

Resources

- <https://www.britannica.com/event/Deepwater-Horizon-oil-spill>
- <https://www.nationalgeographic.com/animals/article/how-is-wildlife-doing-now--ten-years-after-the-deepwater-horizon>
- <https://phys.org/news/2019-04-impacts-deepwater-horizon-oil.html>
- <https://www.osha.gov/news/testimonies/06232010>
- <https://www.osha.gov/laws-regs/regulations/standardnumber/1975/1975.1>
- <https://www.justice.gov/opa/pr/transocean-agrees-plead-guilty-environmental-crime-and-enter-civil-settlement-resolve-us>
- <https://www.noaa.gov/explainers/deepwater-horizon-oil-spill-settlements-where-money-went>

Video

- <https://www.youtube.com/watch?v=FCVCOWejlag>
- <https://www.youtube.com/watch?v=esliY9Miej0>



9 mo post spill

24 mo post spill



