

# BP'S WELL FAILURE DUE TO EFFORT TO SAVE \$10 MILLION?

Henry Waxman just put up a letter and a whole bunch of backup documents in preparation for a hearing with Tony Hayward Thursday. In it, he lists 5 shortcuts BP used in the days before the well explosion, all of them with real risks. But BP chose them to save money and time.

Well Design. On April 19, one day before the blowout, BP installed the final section of steel tubing in the well. BP had a choice of two primary options: it could lower a full string of "casing" from the top of the wellhead to the bottom of the well, or it could hang a "liner" from the lower end of the casing already in the well and install a "tieback" on top of the liner. The liner-tieback option would have taken extra time and was more expensive, but it would have been safer because it provided more barriers to the flow of gas up the annular space surrounding these steel tubes. A BP plan review prepared in mid-April recommended against the full string of casing because it would create "an open annulus to the wellhead" and make the seal assembly at the wellhead the "only barrier" to gas flow if the cement job failed. Despite this and other warnings, BP chose the more risky casing option, apparently because the liner option would have cost \$7 to \$10 million more and taken longer.

Centralizers. When the final string of casing was installed, one key challenge was making sure the casing ran down the center of the well bore. As the American Petroleum Institute's recommended practices explain, if the casing is not

centered, "it is difficult, if not impossible, to displace mud effectively from the narrow side of the annulus," resulting in a failed cement job. **Halliburton, the contractor hired by BP to cement the well, warned BP that the well could have a "SEVERE gas flow problem" if BP lowered the final string of casing with only six centralizers instead of the 21 recommended by Halliburton.** BP rejected Halliburton's advice to use additional centralizers. In an e-mail on April 16, a BP official involved in the decision explained: "it will take 10 hours to install them . . . . I do not like this." Later that day, another official recognized the risks of proceeding with insufficient centralizers but commented: "**who cares, it's done, end of story, will probably be fine.**"

Cement Bond Log. BP's mid-April plan review predicted cement failure, stating "**Cement simulations indicate it is unlikely to be a successful cement job due to formation breakdown.**" Despite this warning and Halliburton's prediction of severe gas flow problems, BP did not run a 9- to 12-hour procedure called a cement bond log to assess the integrity of the cement seal. BP had a crew from Schlumberger on the rig on the morning of April 20 for the purpose of running a cement bond log, but they departed after BP told them their services were not needed. **An independent expert consulted by the Committee called this decision "horribly negligent."**

Mud Circulation. In exploratory operations like the Macondo well, wells are generally filled with weighted mud during the drilling process. The American Petroleum Institute (API) recommends that oil companies fully circulate the drilling mud in the well

from the bottom to the top before commencing the cementing process. Circulating the mud in the Macondo well could have taken as long as 12 hours, but it would have allowed workers on the rig to test the mud for gas influxes, to safely remove any pockets of gas, and to eliminate debris and condition the mud so as to prevent contamination of the cement. BP decided to forego this safety step and conduct only a partial circulation of the drilling mud before the cement job.

Lockdown Sleeve. Because BP elected to use just a single string of casing, the Macondo well had just two barriers to gas flow up the annular space around the final string of casing: the cement at the bottom of the well and the seal at the wellhead on the sea floor. **The decision to use insufficient centralizers created a significant risk that the cement job would channel and fail, while the decision not to run a cement bond log denied BP the opportunity to assess the status of the cement job.** These decisions would appear to make it crucial to ensure the integrity of the seal assembly that was the remaining barrier against an influx of hydrocarbons. Yet, BP did not deploy the casing hanger lockdown sleeve that would have prevented the seal from being blown out from below.

BP willfully ignored numerous warnings in an attempt to save \$10 million here and there, and several days of time. And as a result, precisely what they were warned against happened, causing tens of billions of monetary damage and permanent environmental damage to the Gulf.