



Everything New Orleans

The Times-Picayune

Investigator says well's cement was faulty

He says Halliburton knew, used it anyway

Friday, October 29, 2010

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National Oil Spill Commission investigators have found that the Halliburton cement used to seal the bottom of BP's Macondo well in April was unstable and was used despite multiple failed tests in the weeks leading up to the massive blowout.

What's more, they found that Halliburton knew about the problems and used the cement mixture anyway.

The finding from investigator Fred Bartlit Jr. and his team is a significant new piece of information as several investigations try to establish clear causes for the disaster, which killed 11 rig workers and fouled the Gulf of Mexico with nearly 5 million barrels of oil.

U.S. Rep. Ed Markey, D-Mass., who has been seeking subpoena power for the Oil Spill Commission, saw it as a watershed in the effort to assign proper blame for the incident.

"This is like building a car when you know the brakes could fail, but you sell the cars anyway," Markey said.

Other factors at work

Still, the cement is just one of several possible failure points that appear to have worked in combination to doom the Deepwater Horizon oil rig.

Other factors cited by investigations into the accident include BP's decisions to use potentially riskier designs for lining the well and to skip important steps and tests before sealing it. Also, documents suggest BP and Transocean workers on the rig misinterpreted a final pressure test that might have warned them of trouble. The Oil Spill Commission may present more conclusions about those issues at a presentation scheduled for Nov. 8 in Washington.

But in a letter to commissioners Thursday, Bartlit focused only on the question of the cement that was supposed to have sealed the well's metal linings to the drilled-out bedrock. Bartlit wrote that the slurry's instability "may have contributed to the blowout."

A commission staffer, who was authorized to speak for the commission in a news briefing but was not permitted to give his name, went a little further.

"Had the cement done its job, the hydrocarbons would have been isolated and there should not have been a blowout," he said.

It is already generally accepted that gas flowed into the well through a weak barrier and then pushed up the miles-long well, blew up through an undersea riser pipe and ignited the rig, which was floating a mile above the sea floor and 50 miles off the Louisiana coast.

Halliburton had a contract with BP to supply the Deepwater Horizon drilling rig with cement,

including a regular type used to plug the bottom of the well and a nitrogen-infused foam type used to seal the sides of the well. Halliburton has stated publicly that it tested the cement for that well before pumping it into the hole and that it was determined to be stable.

But Oil Spill Commission investigators, through a review of previously undisclosed documents and interviews, have determined that the first three tests Halliburton ran on the foam cement were all failures.

Bartlit's letter to commissioners Thursday indicates that Halliburton only provided BP with the data from one of the three tests. The one set of results Halliburton shared with BP was from February, two months before the accident, when the final conditions in the well and even the size of the hole were not known.

The data from that test showed the cement was unstable, but when Halliburton sent the results to BP by e-mail March 8, it only sent the numbers, no analysis, and there was no indication that Halliburton mentioned it was a failed test, Bartlit wrote in his Thursday letter.

Getting the recipe

Halliburton kept testing the cement and changing different conditions. Another test in April, using the exact mixture that eventually went into the well, also failed. Halliburton finally ran a successful test in the final days before the blowout, the commission found, but the mixture was the same as the first April test. Bartlit wrote that Halliburton may not have gotten the final results of that last test before the cement was actually poured into the well April 19 and definitely did not share them with BP until after the blowout.

Also, the Oil Spill Commission performed its own tests on the mixture, all of which failed. Despite not having the subpoena powers used by other investigative bodies, Bartlit managed to persuade Halliburton to turn over the exact recipe for the slurry, something it hadn't been willing to share previously.

Oil Spill Commission co-chairman William Reilly said Bartlit was able to get information without subpoenas by reminding the companies that anything they didn't provide willingly would be flagged for the Justice Department's criminal investigation.

Bartlit had Chevron perform nine independent lab tests on the mixture under various conditions. Donating their services, the Chevron scientists found the slurry was unstable in all nine tests.

Halliburton spokeswoman Cathy Mann said early Thursday afternoon that the company was reviewing Bartlit's letter and Chevron's findings, but didn't have a response ready by the evening. The company's stock plummeted by 10 percent immediately after the 12:30 p.m. release of the commission report, then recovered slightly to finish the day at \$31.68 a share, a drop of nearly 8 percent.

BP has long blamed Halliburton for the blowout. In its Sept. 8 internal investigation report, BP said it was unable to check Halliburton's cement tests because a court order barred anyone from accessing the remaining 1.5 gallons of slurry actually used by the rig crew and Halliburton refused to provide BP with its recipe.

The BP report said the April test results it finally got from Halliburton showed it used a cement with a lower foam level than what was required. And like the Oil Spill Commission did with Chevron, when BP tried to replicate the Halliburton cement mixture under the pressure conditions at the bottom of the well, it found it to be unstable.

The March 8 e-mail from Halliburton to BP was eerily similar to a separate report by the cementing contractor just two days before the accident. That report contained Halliburton models warning of a severe risk of gas flowing into the well if BP didn't use more stabilizing equipment in the well bore. But the warning was placed deep inside the report, and key BP engineers have testified that they never bothered to read the report until it was too late.

There's still a major unresolved question as to whether gas got into the well through the bottom "shoe" or through an open side space. The commission wouldn't take a position on that Thursday.

In arguing that its well-design decisions had little to do with the blowout, BP has taken the position that the bottom plug failed and Halliburton's cement was to blame, although it has no definitive proof and the evidence 18,000 feet underground is now destroyed.

Industry insider Bob Cavnar, a 30-year veteran of oil and gas drilling and CEO of alternative energy firm Luca Technologies, doubts the BP theory and cautioned that either way, cement failure wouldn't be the primary culprit.

"This is definitely bad for Halliburton, but a bad cement job does not equal a blowout," Cavnar said.

Halliburton officials have repeatedly said that they always figured any problem with the cement could be fixed by going back in with more cement. The trouble is the process never got that far, and Cavnar and others believe the main reason for the blowout was BP's well design, with officials choosing to line the well in such a way that left an open space up the side of the hole for gas to travel unabated.

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