



Safety Alert

From the International Association of Drilling Contractors

ALERT 03 – 20

TRAPPED PRESSURE FOLLOWING CASING TEST

WHAT HAPPENED:

13 3/8" casing was run into the hole and cemented in place. The float collar and cement were drilled out with a mud motor and the BOP was closed to test the casing. The pressure was brought up to 1500 psi with the rig pump. Following the test the driller attempted to bleed down the pressure through the standpipe. Pressure would not bleed back through the mud motor, so the HCR was opened to bleed back through the choke manifold. The driller instructed everyone to stand back as he opened the BOP. Pressure blew the inner bushings out of the rotary table. No injuries resulted.

WHAT CAUSED IT:

A pre-job safety meeting was held prior to the pressure test, but did not include how the pressure was to be bled off when the test was complete. This was an essential step in the process that was omitted and serious injuries could have occurred.

The mud motor impeded the bleed back through the standpipe so the Driller elected to go through the HCR and choke manifold. The rig personnel assumed the flow path was lined up, and did not check the flow path to be certain the pressure could be bled off through the choke manifold. Also, no one checked the casing pressure gauge after opening the HCR valve to ensure the pressure had gone to zero.

The driller on-tour was not informed that the mechanic had worked on the Superchoke earlier in the day. Therefore, he was unaware that the Superchoke had not lined the choke manifold up to its standard configuration.

This procedure of bleeding off pressure following casing tests is very common and casing is tested against the BOP's every day in operations. Circumstances alter the way the pressure must be bled off, i.e., having a check valve in the kill line, a float in the drill string, a piece of a rubber drill pipe protector lodged in the mud cross, to name a few. Personnel must be certain that the pressure is completely bled off before opening the BOP to the atmosphere.

CORRECTIVE ACTIONS: To address this incident, this company instructed rig personnel:

- Rig personnel were instructed to develop a JSA, "Bleeding Pressure to Zero Following a Casing Test".
- This same JSA may work for bleeding pressure to zero following a formation integrity test. (A related issue is having the annulus open to the atmosphere below the test plug when testing BOPE, to ensure the test joint doesn't become a missile.)
- The topic of bleeding off pressure should be discussed every time the casing is tested.
- Ask the question, "How can we verify that the pressure is gone before we open the BOPs?"

The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.

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