



Safety Alert

From the International Association of Drilling Contractors

ALERT 06 – 01

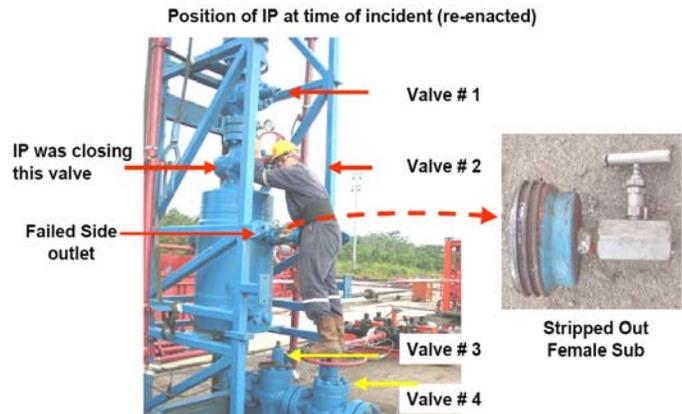
MISMATCHED HAMMER UNION RESULTS IN A FATALITY

WHAT HAPPENED:

A worker while operating a sand filter valve in a temporary well test setup, sustained severe multiple injuries caused by the impact from a female hammer union, inadvertently dislodged from a side outlet, as well testing was in progress. He was thrown 19 ft from the sand filter equipment. He was evacuated to a regional clinic where he underwent emergency surgery. He later died in the clinic.



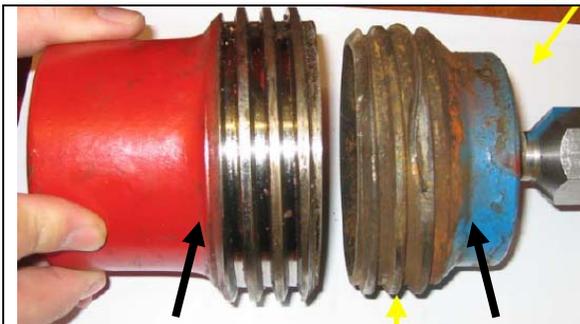
He had obtained signed PTW, held toolbox talk and held safety meeting with Rig Team and Gas plant Operations team leader. He then went to open up well to well test surface facilities. In order to obtain a sand sample while producing the well and while, testing in progress, the IP climbed the sand filter equipment, stood on the wheel of the discharged valve to operate the middle valves. His lower abdomen faced the side outlet (see the photo). The female hammer union dislodged from the side outlet and hit him in the lower abdomen.



WHAT CAUSED IT:

Connection was a mismatch between the male and female hammer Union (602 female to 1502 male). See Photo:

Failed union end



Note: FIG 1502

FIG 602



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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1. Configuration of equipment at well was not according to manufacturer's design layout. However, Well Test contractor stated that the configuration at the two previous tests were the same as this well.
2. Manufacturer's configuration included a permanent access ladder and a working platform for operating the middle valves and different orientation of the valves.
3. The configuration and operating manual were not available to Well Test contractor at the time they took over the equipment.
4. Original design had a flanged outlet and not a hammer union.
5. There was a change of valve orientation. Valve orientation may have been changed for convenience of access to the valves during servicing the equipment in the yard.
6. HAZOP did not identify the hazard with valve orientation and configuration.
7. IP stood on discharge valve wheel, about 3ft above the ground to operate the middle valve (8.6 ft high) isolating the lower chamber. He did not use the temporary access (ladder) provided and in any case it was not fit for operating the valve.

CORRECTIVE ACTIONS: To address this incident, this company did the following:

Initial Main recommendations, are awaiting final conclusions and reports.

1. The operator and contractor companies to stop work.
2. Check all temporary piping and remove non standard subs from site.
3. Visit ongoing well test sites and audit the set-up and piping.
4. Remove and replace sand filter.
5. Send out industry alert on dangers of hammer lug unions.
6. Operator/Contractors jointly develop a seminar on safety of pressure vessels.
7. Extend same to other well intervention facilities and rig up.
8. When handing over equipment to other parties, ensure the history, certification and operating sequence are included.
9. Print a laminated alert, hang on connections and rigged-up facilities and issue to all personnel to increase awareness
10. HAZOP reporting format should clearly state hazard and recommendation to enable linking of close-out action.
11. Develop an "Operations Guide for the use of Temporary Pipe work Systems".

IADC Note: Refer to IADC Safety Alerts 98-01, 99-33, 00-15, 03-16

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