



Safety Alert

From the International Association of Drilling Contractors

ALERT 02 – 05

DEEP WELL PUMP REPAIR RESULTS IN A FATALITY

WHAT HAPPENED:

One of the Deep Well Pumps became inoperative and an Unplanned Maintenance Report was raised to replace it. The task is considered routine and a standard Job Safety Analysis (JSA) describing the procedure to be followed was on file. Prior to commencing the task a pre-job meeting including review of the JSA was held. The procedure laid out in the JSA, was to use a crane to pull the PVC pipe from the well disconnecting one section at a time. The last joint, with the pump/motor still attached was to be removed together and placed on the deck. Once on the deck the pump/motor was to be detached from the PVC pipe. Due to the rig working in about twenty-five feet of water, the top of the Deep Well Pump Tower was approximately forty-two feet above the main deck.

The Electrician locked out the pump motor's electric controls and disconnected the pump/motor power cables from the junction box on the Deep Well Pump Tower. To access the PVC piping as it was hoisted the Electrician and Motorman were positioned on top of the Deep Well Pump Tower (see photo). The power cord attached to the pump/motor was pulled along with the pipe and as it was retrieved from the well the men fed it over the handrail, letting it fall to the deck. As the last section was hoisted out of the well, it was observed that the pump had partially separated from the motor. At this time the Electrician elected to deviate from the documented JSA and disconnect the last section of PVC pipe from the pump/motor and lay them down separately. A clamp was installed on the crossover below the PVC coupling, yet above the separation in the pump/motor. To disconnect the PCV pipe, the pump/motor was lowered into the well and disconnecting the last section of PVC proved difficult to the point that a 12-pound sledgehammer was used to help tap the pipe free. When the connection came free, the lower portion of the pump/motor assembly with the power cord still attached, separated and fell through the well. As the power cord was being pulled down the well, it was whipping over the handrail (see photo #1) and as the end of the power cord came over the top of the handrail, it struck the Electrician causing fatal injuries.

WHAT CAUSED IT:

There was deviation from the documented Job Safety Analysis and upon the deviation of JSA, there was a failure to stop the job and assess any new hazards introduced to the job. This resulted in a failure to recognize hazards existing in the operation. Additionally, there was mechanical failure of the pump/motor assembly.

1 Deep Well Tower Crows Nest



#2 Crane Operator's view of Deep Well Tower



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

- Communicated this incident to all Rigs within the fleet, stressing the importance of following documented JSAs and procedures.
- Had supervisors instruct all personnel that if deviation from a JSA is required, personnel should stop work immediately, assess all hazards, then seek approval from their immediate supervisor.
- Conducted additional JSA and Hazard Analysis Training with all crews.
- Assigned Engineering and Operations personnel to investigate ways to improve the process of pulling Deep Well Pumps.
- In order to highlight other potential risks involved in pulling Deep Well Pumps, Engineering and Operations personnel were assigned to work with Deep Well Pump manufacturers to develop a better understanding of different types of failures.

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.

This material is presented for information purposes only. Managers & Supervisors should evaluate this information to determine if it can be applied to their own situations and practices.
Copyright © 2002 International Association of Drilling Contractors. All Rights Reserved

Issued February 2002