Safety Alert

From the International Association of Drilling Contractors

ALERT 99-32

TOP DRIVE SWIVEL STEM PARTED

WHAT HAPPENED:

The rig experienced a drilling break. While picking up the drill string to check for flow, the connection between the swivel stem and the double-pin sub parted. The string dropped about 20 feet (6 m) to the bottom of the hole with another 30 feet (9 m) of compression. The top drive was connected to the torque tube, which kept it from falling over when it was dropped to near the floor. However, it allowed enough lateral movement to bend the drill pipe. There was no leakage to indicate a cracked swivel stem prior to the time it parted.

WHAT CAUSED IT:

The presence of a high "stress riser" in the seal area of the swivel stem box connection, along with the coupling of the swivel with the top drive, is believed to have focused the stress in the swivel stem box area. Swivels where the top drives are connected with a secondary support system from the blocks are not believed to have developed cracks like those experienced with swivels with the top drive supported solely through the swivel drive system.

CORRECTIVE ACTIONS:

All required inspection procedures, including Magnetic Particle Inspections, should be reviewed with the manufacturer of all load path connections. Procedures should be put in place to ensure that these requirements are met or exceeded.

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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