



# Safety Alert

From the International Association of Drilling Contractors

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ALERT 13 – 21

## IRON ROUGHNECK “STRUCK BY” INCIDENT RESULTS IN FATALITY

### WHAT HAPPENED:

While the rig crew was tripping drill pipe out of the well, a floorhand was struck by an iron roughneck and suffered fatal injuries. At the time of the incident the floorhand was fitting a collar clamp around a drill collar. Witnesses state that a remotely operated iron roughneck was engaged to extend while the worker was in its path. Attempts to warn the person and stop the iron roughneck failed. Even though this incident is subject to an ongoing investigation, this alert provides guidance for the industry on the risk factors and hazards identified during the preliminary investigation.



Photo of an Iron Roughneck

### WHAT CAUSED IT:

Key issues:

- Initial design HAZOP (Hazardous Operation) may be inadequate and must be reviewed.
- Ensure safety controls exist that enable workers and drillers to confirm that the path of the iron roughneck is clear of personnel.
- The sound of equipment moving such as an iron roughneck may be muffled by other noises on the equipment or the work site.
- Layout or design of the drill rig and doghouse may impede a clear visual line of sight of workers in the danger zones.
- Emergency stop controls must be nearby, identifiable, and readily accessible.
- Safety controls on remotely operated devices must be reviewed regularly to ensure that they are adequate in controlling any risk of injury or harm.

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

Recommendations:

- Rig Managers are to assess all operational risks relating to the use and maintenance of iron roughnecks.
- Supervisors are to take all necessary and reasonable actions to ensure that no person or property is exposed to more than an acceptable level of risk relating to the use and maintenance of iron roughnecks.

**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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Issued September 2013



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- Engineering personnel should re-examine iron roughneck design and interaction with control systems to eliminate risk or implement controls to ensure any risk associated with the use and maintenance of iron roughnecks is within acceptable safety limits, having regard to each relevant safety requirement, and is as low as reasonably practicable.
- Engineering controls should consider mechanical barriers, audio-visual warnings and rig platform authorization controls that ensures people are in a safe area before iron roughnecks can be operated.
- Engineering personnel should ensure that engineering inspections have validated that the safety critical elements of iron roughneck operation, including all safety-related software and hardware functions to verify the suitability of the safety measures, are implemented.
- Maintenance and engineering personnel are to ensure test reports detailing all validations are recorded and managed as part of the SMP (Safety Management Plan) and can be presented for inspection if requested.
- Ensure that the provisions of Section 696 and Section 697 of the Petroleum and Gas (Production and Safety) Act 2004 are met.

Credit to: State of Queensland, Department of Natural Resources and Mines, 2013  
Petroleum and Gas Safety Alert 58

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