



Petroleum Safety Significant Incident Report No. 02/2012

Travelling block on drilling rig falls following failure of repaired turnbuckle

Incident

During a mechanical inspection of the crown block on top of a drilling derrick, one of the turnbuckles on the side brake was found to be fractured. A decision was made to repair weld the turnbuckle as a replacement part was not available at the drilling site. The welder raised concerns that the turnbuckle was made from cast metal and could not be welded without special welding rods. He was advised by the mechanic on duty and the rig manager that, despite this, he should proceed with the repair. The repaired turnbuckle was then put back into service.

The repaired turnbuckle subsequently failed during drilling operations and the console handle for the side brake suddenly became non-responsive, causing the travelling block and drill-string to fall to the floor of the drilling rig. Fortunately, no injuries were sustained.

Contributory factors

- Inspection frequency inadequate for preventative maintenance of critical pieces of equipment.
- Inadequate system for managing supply of spare parts.
- Insufficient knowledge and expertise regarding the risks associated with the non-engineered repair of a critical part.
- Lack of information transmitted to the crew (particularly to replacement crews and new members) regarding the state of equipment.

Comments and preventative actions

This incident illustrates the importance of having robust systems in place to prevent or reduce the effects of poor decision making — in this case, the decision to make ad hoc repairs to the failed turnbuckle.

The incident could have been avoided by:

- having an effective system for maintaining stock and spare parts inventories on the drilling rig;
- ensuring any modification, repair, inspection or testing of equipment is carried out by a competent person; and
- adhering to operating procedures for recording equipment failures and providing relevant information for handovers with new and replacement crews.

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