

SAFETY BULLETIN

Drill rig operator sustains a serious hand injury

BACKGROUND

An operator of a drilling rig sustained a serious injury to his right hand, losing his finger, when 6 rods of a drill string weighing approximately 24 kg's fell from the drill hole in the roof.

INVESTIGATION

The operator was in the process of withdrawing an extended drill string from the hole, this process required the operator to remove sections of drill rod with the aid of the mast mounted gripper jaws.

The operator had successfully removed 2 sections of drill rod from the hole and was attempting to remove a third section when the incident occurred.

It appears the operator placed his right hand over the drill chuck and attempted to activate the water valve located on the control station. The operator inadvertently operated the gripper jaws release control lever which is located directly above the water control valve. This allowed the drill string to fall from the hole severing the operator's finger.

The control handle for both gripper jaws and water flushing are fitted with the same style handle and the movement of the flushing water 'on' control and gripper release control are in the same direction, which can lead to confusion and potential human error.

A functional check of the roof bolter controls confirmed the control station functioned correctly, that is, as per design.

SIMILAR INCIDENTS

A check of the Departments data base has revealed 16 similar incidents where operators or operator assistants have received some type of hand injury when retrieving a drill string from the hole.

The causal factor of this incident was the inadvertent activation of the gripper jaws by the operator. The causal factors around other database injuries vary from inadvertent activation for the gripper jaws by the operator, to failure of the gripper jaws to hold the drill string from falling out of the hole.



Failure of the gripper jaws to support the drill string leads to a serious hand injury



Inadvertent operation of the gripper jaw controls leads to a serious hand injury

RECOMMENDATIONS

- 1) Consideration should be given to complying with the relevant parts of the AS 4024.1-2006 'Safety of machinery' series of standards and MDG 35.1 *Bolting and drilling plant in mines*.

In particular AS 4024.1601-2006 'Design of controls, interlocks and guarding—Two-hand control devices—Functional aspects and design principles' provides specific guidance on the prevention of accidental activation and accidental defeat of controls.

- 2) Design and operational risk assessments should consider human error analysis on the particular plant in an attempt to highlight errors in design which could lead to inadvertent activation of a function that has the potential for an injury or incident.
- 3) Operational risk assessments for strata drilling equipment should be reviewed to ensure they address all the risks associated with your particular drilling process or processes.

Where the review identifies new or additional risks then -

- implement the hierarchy of controls, as required by legislation.
- consult with the relevant original equipment manufactures (OEM) in an attempt to reduce the potential of human errors through the introduction of engineering controls.

NOTE: Please ensure all relevant people in your organisation receive a copy of this Safety Bulletin, and are informed of its content and recommendations. This Safety Bulletin should be processed in a systematic manner through the mine's information and communication process. It should also be placed on the mine's notice board.

Signed



Rob Regan
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MINE SAFETY OPERATIONS BRANCH
INDUSTRY & INVESTMENT NSW

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