NSW DEPARTMENT OF
PRIMARY INDUSTRIES

SAFETY ALERT

Hydraulic injection near miss

INCIDENT

An incident occurred while setting up the hydraulic supply lines to install roof support shields on a longwall face during a longwall relocation. A near miss eventuated when a fitter removed a staple from a manifold which was still pressurised. The plug (held in place with a staple) was ejected from the fitting and fluid escaped from the hose under pressure in close proximity to employees.

CIRCUMSTANCES

To facilitate commissioning of the crusher on the beam stage loader, the longwall hydraulic supply lines isolation was moved from one isolation point to a second isolation point inbye utilising a 350 Bar working pressure ball valve.

The fitter tested the circuit on the downstream side for 'no' pressure after closing the isolation valve (test that depressurisation was successful). There was a time delay after the isolation was performed and before the fitter started to do his job. Pressure had built up in the circuit by a leak through the ball valve.

INVESTIGATION

The investigation found that the second isolation valve ball valve seat had failed and had allowed the pressure to build up in the circuit.

It was found that:

1. The wear on the valve seal was probably caused by the slow activation of the ball valve when restoring pressure, thus eroding the seal on the ball valve.

and / or

2. The isolation ball valve was left in a partially open / closed state, thus eroding the seat away during normal longwall operation.

RECOMMENDATIONS

Refer to *MDG 40 Guideline for Hazardous Energy Control (Isolation or Treatment)*. Furthermore:

1. Investigate alternative isolation and restoration of pressure to save wear and tear on ball valves and seals.
2. Review isolation procedures and training to ensure there is no stored pressure in hydraulic circuits before commencing work.

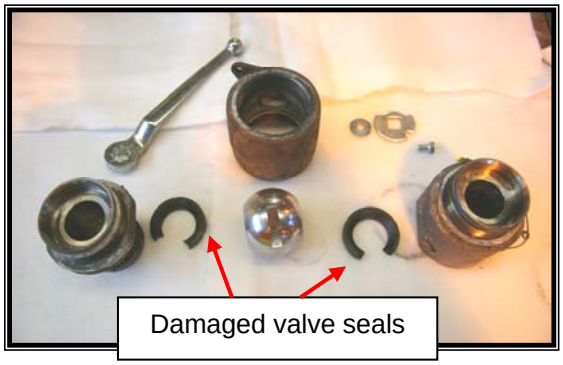
ABN 51 734 124 190
www.dpi.nsw.gov.au

Mine Safety Report No: SA09-04
File No:07/2889
Comet ID:317560178001
Prepared by: P Drain
Phone: 02 4931 6652
Date Created: 23 March 2009

3. Review the installation of pressure gauges at isolation points to ensure all the pressure is dissipated.
4. Investigate an alternative method of slow filling hydraulic circuits to prevent shock loading.
5. Review the mine's maintenance schedule to check, inspect and test the isolation valves at periodic intervals.
6. Consider a double block and bleed[1] arrangement for the main hydraulic isolation points in the hydraulic system supplied on longwalls.

[1] *Double block and bleed means the closure of a line, duct or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.*

Stripped isolation valve



Eroded valve seal in situ

NOTE: Please ensure all relevant people in your organisation receive a copy of this Safety Alert, and are informed of its content and recommendations. The Safety Alert should be posted on the mine's noticeboard.

Signed

Rob Regan
DIRECTOR
MINE SAFETY OPERATIONS BRANCH
NSW DEPARTMENT OF PRIMARY INDUSTRIES
View more safety alerts at www.dpi.nsw.gov.au/minerals/safety/safety-alerts.