NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Now incorporating Department of Mineral Resources
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SAFETY ALERT

LOSS OF EYE FROM INJECTION OF GREASE

INCIDENT

A maintenance technician sustained the loss of his right eye, when he was struck in the eye by a flow of grease ejected under high pressure (potentially 25.6Mpa: 4000psi) while loosening a grease nipple. He was treated on site before being transported to hospital where his eye was removed because of the injection of the grease into the membranes behind the eye.

CIRCUMSTANCES

The maintenance technician had replaced a sheave "bucket dump rope sheave block assembly" on the bucket of a 9020 dragline. When initial greasing was carried out, no visible indication of grease purging was observed to indicate sufficient lubrication in the bearing cavity.
The maintenance technician then started to remove the grease nipple, using a spanner, to see if grease was present.
Upon doing this, the pressure from the stored air and grease caused the sudden ejection of the nipple and grease, striking the technician in the forehead and safety glasses. The impact dislodged the safety glass lens from its frame and allowed the grease to enter the right eye.
The technician had previous experience on the equipment.

INVESTIGATION

The preliminary investigation indicates that.

1. Air and grease could be contained in the 9020 dump block assembly (new) at a pressure of 4000psi.
2. The thread on the nipple and the internal thread on the bush were not matched.
3. Procedures and standards for carrying out the work could have been better established and known for greasing during installation and operation.
4. The safety glasses were not suitable for the job.

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RECOMMENDATIONS

1. Design equipment with safe systems to either (a) allow grease to flow through the system or reside in a pressure system (piston), and (b) allow for controlled pressure release.
2. Assess equipment and identify areas where lubricants or other fluids could be trapped under pressure in systems and implement measures for maintenance personnel to control the activity.
3. Ensure fit for purpose equipment, ie the correct matching thread for a fitting, is used.
4. Review competence of persons engaged in pressure lubrication activities and conduct hazard awareness training with personnel to enable identification of stored energy.
5. Ensure that persons are provided and wear appropriate eye protection for the tasks being performed.

R Regan
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Find Safety Alerts at: http://www.minerals.nsw.gov.au/safety/safalert.htm