

SERIOUS ACCIDENT INVOLVING A PUMP



Description

A centrifugal slurry pump had not been operating correctly. The operator realising that there could be pressure in the pump used the relief valve to release the pressure. However, when he went to remove the outlet hose, hot water sprayed out over him. The operator received second degree burns to both thighs and wrist.

Possible Cause

The inlet foot valve was buried in fine material which blocked the inlet. Any blockage to the flow in any impeller pump will cause its contents to heat and could reach very high temperatures. This places the contents in a pump under pressure which must be safely released before commencing any maintenance.

Improvements made in this case

The inlet foot valve was raised out of any fine material. A by pass valve was installed on the outlet of the pump so that personnel can safely relieve pressure away from where they stand if heat build up occurs. A pump flushing line to stir the fines was installed to prevent further blockages.

Other probable causes in similar situations

Probable causes of impellers to spin in a slurry without pumping include:

- blocked foot valve
- blocked outlet
- jammed non return valve
- worn impeller
- air entry to the inlet side
- cavitation

Recommendations (also see similar significant incident reports attached)

- the possibility of blockages in pumps be investigated
- procedures for safe release of pressure in pumps be reviewed

Contact: Mark Stephens, Regional Inspector of Mines, Orange NSW (02 63 608289)

A handwritten signature in black ink, appearing to read "N. Sneddon".

N. SNEDDON
ASSISTANT DIRECTOR SAFETY OPERATIONS