



Significant Incident Report No. 225

Subject: Worker seriously injured by moving parts in a modified stemming bucket

Date: 10 August 2015

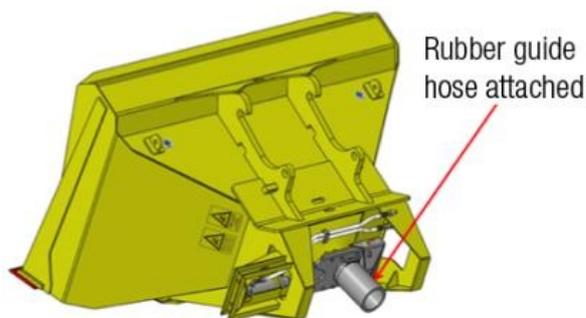
Summary of incident

Note: This report builds on the findings of Significant Incident Report No. 204 "Worker seriously injured by moving parts", released on 30 July 2014.

Drill holes in an open pit were being backfilled using a stemming bucket attached to an integrated tool carrier (IT). During the process, a worker from the drill and blast crew noticed that the backfill material had stopped flowing from the stemming bucket into a drill hole.

After using hand signals to communicate with the IT operator, the worker attempted to dislodge the blockage by placing his hand in the discharge outlet at the base of the stemming bucket. The hydraulically actuated gate valve, which controls the flow of material through the discharge outlet, closed and severed several of his fingers.

A subsequent investigation revealed that the rubber guide hose provided by the original equipment manufacturer (OEM) to fit over the discharge outlet, and guide the flow of material into drill holes had been removed. This allowed the worker to access the discharge outlet.



Direct causes

- The worker's hand was exposed to moving parts.

Contributory causes

- The plant was not isolated while attempting to dislodge the blockage.
- Despite regular blockages, there was:
 - no mechanism to prevent oversize material from blocking the discharge outlet

- no risk assessment for clearing blockages
 - no safe work procedure (SWP) or safe work instruction (SWI) for clearing blockages.
- A rubber guide tube attached to the discharge outlet of the stemming bucket had been removed, modifying the OEM's design. No risk assessment was conducted after the stemming bucket was altered.

Actions required

The following actions are recommended to support safe systems of work for tasks carried out using energised plant such as stemming buckets.

Employers

Implement safe systems of work such that when the design of plant is altered, or plant is modified, a competent person:

- assesses the amended design for potential exposure to hazards
- inspects and tests the modified plant before it is returned to service to verify it has been altered in accordance with the design specifications.

Managers and supervisors

Ensure:

- practicable measures are taken (e.g. guarding) to reduce the exposure of workers to potential pinch points
- SWIs or SWPs are available that:
 - identify the hazards and controls for each job step
 - highlight the potential for hazards to be masked (and therefore not adequately controlled)
- workers are trained to recognise sources of hazardous energy and have access to, and comply with, suitable control measures (e.g. lock out or isolation)
- before a job starts, workers complete a job hazard analysis (JHA) or job safety analysis (JSA) and the supervisor assess its adequacy.

Workers

- Follow the approved safe system of work when performing a task, and do not commence work without understanding the job steps and hazard control measures that apply.
- Report damaged plant (e.g. missing parts) to the supervisor.

Further information

Visit www.dmp.wa.gov.au/ResourcesSafety for information on occupational safety and health in the resources sector.

This Significant Incident Report was approved for release by the State Mining Engineer on 10 August 2015