



Mines Safety Bulletin No. 107

Subject: Unwanted interactions between loading and clean-up equipment

Date: 11 October 2013

Summary of hazard

Over the past 36 months at South West mining operations, at least four incidents have been reported for rubber-tyred dozers performing clean-up tasks. They were working inside the swing radius of loading equipment when the counterweight or bucket of the loading unit has struck the dozer, usually the cabin, causing significant damage and equipment downtime. Fortunately, any injuries have been minor but there is the potential for more serious outcomes.

Contributory factors

- Contrary to site procedures, and possibly demonstrating poor judgement of separation distances, dozer operators have been working inside the swing radius of loading equipment.
- Inadequate communication between operators has resulted in incorrect assumptions being made about another operator's actions.
- Inadequate supervision has meant that issues relating to violations of site procedures and poor communication practices have not been identified and addressed.

Recommendations

The potential for equipment conflict can be reduced by implementing a safe system of work for pit floor clean-up.

- A critical practice to be considered in any procedure is a prohibition on any worker or equipment, other than a haul truck being loaded, being inside the swing radius of any excavator or face shovel until the bucket is grounded and the swing brake (where fitted) is applied. If the excavator or hydraulic shovel has a cut-off switch that is activated when the operator stands, another layer of protection can be provided by requiring the excavator or shovel operator to stand during clean-up operations to prevent accidental activation of slew functions.
- Anti-collision technologies such as personal locator badges or radius sensitive alarm systems may be a useful aid for avoiding equipment conflicts.
- Verbal responses through radio communications should include a formal hand-over of a loading unit's work area to the operator responsible for clean-up activities. Upon completion of the clean-up, there should be a formal hand-back of the work area to the operator of the loading unit.
- Errors of judgement relating to the swing arcs of loading equipment can be minimised by identifying and demarcating the extent of the hazardous area surrounding loading operations, including the turning radius of dump trucks. This creates an exclusion zone for all mobile equipment, other than haul trucks, until authorised to enter.

- Inexperienced operators or those new to a site should work under the close personal supervision of a competent person until they are assessed as competent in the work being carried out.
- Where operators have been trained and assessed as competent, they may carry out the work without close personal supervision. However, the supervisor should oversee compliance with the procedure through task observation or other regular contact throughout the shift as required.

A handwritten signature in black ink, appearing to read 'S. Ridge'.

Simon Ridge

STATE MINING ENGINEER