



Significant Incident Report No. 209

Subject: Potential signal tube detonator explosion ("snap, slap and shoot") during charge-up

Date: 20 November 2014

Summary of incident

A mobile processing unit (MPU) and spotter had finished loading explosives into the last blast hole of a row of drill holes. When the MPU started to drive off the shot, the spotter moved to the next row of drill holes to prepare for loading them. As the MPU moved forward, the downline lead of the signal tube detonator for the hole that had just been loaded became entangled with the MPU's rear protection bar. The lead had been looped around a stake, as is normal practice.

The downline lead stretched until it snapped, raising the potential for an initiation due to the "snap, slap and shoot" phenomenon. Fortunately, the detonator did not initiate.

Note: "Snap, slap and shoot" is possible when signal tube detonator plastic tubing is stretched to snapping point. When the plastic tubing recoils after snapping, percussive slapping can initiate the thin layer of high explosives contained within the plastic tube and cause the detonator to fire (or shoot).



Photograph showing proximity of downline lead and stake to MPU's rear protection bar during loading

Direct causes

- The spooled downline lead was looped around a stake at the same height as the rear protection bar, allowing the lead to become tangled as the MPU moved forward.
- The design of the MPU's rear protection bar allowed the downline lead to become entangled.

Contributory causes

- The spotter was not observing the movement of the MPU as he had already moved to the next row of drill holes.

Actions required

Mine operators are reminded of the importance of maintaining safe work practices for all charging tasks. They should ensure that:

- equipment is designed or modified to eliminate the risk of entanglement
- where a task requires a spotter, this person is positioned where they can observe the safe and unhindered movement of equipment.

Further information

- www.dmp.wa.gov.au/6651.aspx#17164

Australian Explosives Industry Safety Group (AEISG), 2011, *Code of good practice – mobile processing units*. (see section 5.2.10 on rear impact protection for MPUs)

This Significant Incident Report was approved for release by the State Mining Engineer on 20 November 2014