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Safe systems of work for mobile plant

This safety bulletin provides safety advice for the NSW mining industry.

Figure 1: The water truck that rolled over.



Figure 2: The access ladder where the worker fell.



On 2 April 2018, a Volvo A40E water truck was travelling down a ramp and making a right-hand turn when the operator lost control. The truck rolled over causing substantial damage to the operator's cabin. This resulted in a significant back injury to the operator.

In February 2016, a worker fell 2.7 m from the platform of an articulated dump truck (ADT) and suffered serious head injuries, which resulted in permanent incapacitation. The dump truck was on a low loader road transport truck and was being prepared to be reversed off the low loader.

Since July 2017, there have been 16 reported incidents where ADTs have rolled over and excavator roll overs have also been regularly reported in NSW mines during the past two years.

These incidents have generated significant concern regarding the implementation and use of safe systems of work associated with accessing, operating and maintaining mobile plant operating across the NSW mining industry.

On 9 January 2017, the Resources Regulator published safety bulletin *SB17-01 Industry reports more truck rollover incidents*. Recommendations to mine operators included identifying all work activities on the mine site where trucks were used and reviewing control measures for truck rollovers.

In November 2017, the Resources Regulator published an investigation report into the serious injury of a mine worker at a sand plant. Recommendations to the mining industry were published in the investigation information release *IIR16-03 Worker seriously injured in fall from articulated dump truck*. Mine operators were advised to develop and implement control measures to reduce the risk of falls from trucks.

Circumstances

As a result of these incidents and subsequent inspections routinely conducted by Resources Regulator inspectors, it has been identified that appropriate safe systems of work have not been developed, implemented or maintained for the activities associated with the operation of mobile plant at some mines. In particular, the regulator has identified concerns about the management of the risks associated with:

- falls from height
- rollover of mobile plant
- introduction of mobile plant to site
- quality of maintenance on safety critical systems.

Recommendations

As identified in clause 179(e) of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014, the unintended overturning of any vehicle or plant weighing more than 1000 kg is a dangerous incident for the purposes of section 14(c) of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013*. As such there is no scope to report a vehicle rollover as a high potential incident under clause 128 of the regulation.

Mine operators should:

- review systems of work for the operation of mobile plant, specifically addressing the training, assessment and ongoing maintenance of competency of plant operators
- review systems of work for the maintenance and inspection of mobile plant, specifically addressing the provision of safe access systems, including guard rails for platforms and walkways, and the ability to maintain three points of contact when accessing and egressing from mobile plant
- specify that suitably rated rollover protection and falling object protection structures are fitted to mobile plant
- review the system for introduction of mobile plant to site, with reference to rollover protective devices, access systems and maintenance of safety critical systems
- review the mechanical engineering control plan to ensure all risks associated with activities that are to be conducted in and around mobile plant have been identified and assessed, and that the identified controls for these risks are appropriately implemented, and maintained
- arising from any incident involving plant, and in accordance with clause 10 of the Regulation, must review and revise the control measures, where it has been identified that control measures were inadequate, deficient or ineffective. The review of controls should address whether the controls:
 - are implemented
 - deliver the expected outcome

- are supported by systems to ensure they remain effective, such as worker training.

Mine operators should refer to the following provisions of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014:

- Clause 26 (4) Mechanical Engineering Control Plan
- Clause 28 Movement of mobile plant WHS (M&P) Regulations 2014
- Clause 103 Duty to inform workers about safety management system
- Clause 104 Duty to provide information, training and instruction
- Schedule 2 (2) Mechanical Engineering Control Plan

Mine operators should refer to the following provisions of the Work Health and Safety Regulation 2017:

- Clause 214 Powered mobile plant - general control of risk
- Clause 215 Powered mobile plant - specific control measures.

Mine operators should also refer to the following guidance:

- [IIR18-02 Investigation Information Release – Serious injury at Werris Creek mine](#)
- [NSW Code of practice: Mechanical engineering control plan](#)
- [MDG 15 – Mining Design Guidelines – Mobile and transportable plant for use at mines \(other than underground coal mines\)](#)
- [SB17-01 Industry reports more truck rollover incidents](#)
- [SB16-06 Injuries incurred from falling plant](#)
- AS 3868 Earth-moving machinery—Design guide for access systems,
- AS 1657 Fixed platforms, walkways, stairways and ladders - Design, construction and installation
- AS 1636 Rollover protective structures
- AS 2294-1990 Earth-moving machinery - protective structures
- ISO3471 Earth-moving machinery - rollover protective structures - laboratory tests and performance requirements,
- SAE J1040 Performance criteria for rollover protective structures for construction, earthmoving, forestry, and mining machines.

NOTE: Please ensure all relevant people in your organisation receive a copy of this safety bulletin, and are informed of its content and recommendations. This safety bulletin should be processed in a systematic manner through the mine's information and communication process. It should also be placed on the mine's notice board.

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Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information on which they rely is up to date and to check the currency of the information with the appropriate officer of NSW Department of Planning and Environment or the user's independent advisor.

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