

Compliance priority report

Surface coal – windrows and edge protection standards

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Table of Contents

Executive summary	4
Key findings	4
Recommendations	5
Further information	5

Executive summary

A crucial part of the NSW Resources Regulator's *Incident Prevention Strategy* involves compliance priority programs for mines and petroleum sites. This involves proactively assessing a topic that is an emerging risk across the industry, that is driven primarily from incident data as well as evolving industry trends. Although these topics may also be contained within the Resources Regulator planned inspection programs, the aim of compliance priority programs is to gather further information and knowledge about how the industry is managing and controlling a specific issue.

This report summarises the assessment findings from the compliance priority program which targeted windrows and edge protection standards and covered 18 surface coal mines during the period from June 2022 to August 2022. Several key elements were assessed as part of this program and included:

- documented standards for windrows and edge protection
- implementing dump trigger action response plans (TARPs)
- operator understanding of dump TARPs and windrow standards
- how windrow compliance was monitored
- site compliance to own standard within mining areas.

Key findings

This priority project assessment was launched following multiple incidents at NSW coal sites in which hauls trucks ended up over the edge of dumps. Though there were no injuries or equipment damage, on each occasion workers were put at risk from the equipment rollover potential. At the same time, during planned assessments, inspectors were identifying certain sites where edge protection on dumps was not being maintained to standard.

Though windrow construction to standard is a critical control for preventing truck over dump edge incidents, strata failure and corner tipping were the 2 main causes identified in the incident investigations. The strata failure incidents were mostly due to material competency however in some cases wet conditions potentially contributed. In both the corner tipping incidents, the rear wheels were not squared up with the windrow and there was less resistance as the wheels on one side pushed through the windrow. The planned inspections from this priority project were able to confirm that all sites have edge protection standards and the ability to implement them.

The priority project also assessed the specific controls that sites had for non-standard dumps. Examples were when dumps were above the standard tip height, when water was present, when mud was present at the toe, when there was a significant ratio of incompetent material and for dumps where there were already signs of instability.

The assessments found varying processes for administering additional controls where required. Some sites had a requirement for a JHA/JSA, with the triggers listed in the dumping procedure. Other sites had all the triggers and standardised controls listed in a TARP.

Some sites signposted the risk ranking on every dump, while other sites signposted only the medium and higher risk dumps. This assessment aimed to ensure that the controls for non-standard dumps had been triggered where necessary and that workers understood the requirements for additional controls. Investigations into recent incidents have found that the requirements for additional controls were adequately documented but not always implemented.

Common methods for ensuring that dump windrows were to the minimum standard height included:

- Measuring relative to a known marker on a dozer blade (often a made-for-purpose red marker plate welded on to the rear of the blade);
- For the supervisor – measuring relative to a marker tape on the light vehicle flagpole; and

- One site used life size murals at the shift start point to constantly remind workers of how the windrow height should appear.

Recommendations

- Mine sites need to have procedures for additional controls on non-standard dumps that can be understood by the workforce, including roles and responsibilities. In the case of TARPS, the requirements should be adjustable for unique conditions.
- Dump procedures need to consider a requirement for technical review where there has been evidence of instability.
- Geotechnical checklists need to be in place for dumps that are completed by appropriately qualified personnel and with the requirement for re-assessment with a change in parameters, including material composition.
- Geotech hazard awareness training for all pit personnel.
- Lighting plant positioning for maximum visibility and without blinding light. Lighting plant positioning has been a contributing factor in recent truck over dump edge incidents.
- At the corners of an advancing tip head, consideration for loads to be tipped short and pushed off to maintain a square dump, particularly when a dozer is not present to spot the trucks.

Further information

For more information on safety assessment programs, the findings outlined in this report, or other mine safety information, please contact the NSW Resources Regulator:

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