

COMPLIANCE PRIORITIES OUTCOMES

Ground and strata failure

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Issue: A significant number of rib failures in coal underground mines have resulted in injuries to workers. Ground and strata failure is a principal mining hazard under the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 with a significant risk posed to workers from unplanned movement of ground.

What we did

The NSW Resources Regulator published its *Compliance priorities for July-December 2018* which highlighted an inspection campaign would be carried out targeting the management of a change in geological conditions or a change of area being mined as well as the management of work undertaken on the face side of the longwall pan line spill-plates.

Eight sites were selected for an inspection campaign. These mines were informed of the date and scope of the inspection in the week ending 19 October 2018. The inspections were completed on 14 November 2018.

The target outcomes were –

- identification of how the target sites acknowledge and respond to safety bulletins
- assessment of the rigour in designing and maintaining rib support systems

- assessment of systems used for accessing the face side of the spill trays on longwall faces
- assessment of the management of geotechnical change in relation to rib support
- an assessment of the suitability of temporary support, regarding rib hazards, on continuous miners
- field verification of the systems, knowledge and equipment.

What we found

Five of the sites selected had recent rib incidents that were reported to us. All sites had undertaken major reviews of their rib support strategy and all had implemented significant changes to their processes and procedures. This may have resulted in an improved compliance outcome compared to a random selection of mines.

The inspection campaign identified many common elements between the eight sites.

- All sites had a system for dealing with safety bulletins that included review by the site Safety Committee.
- All sites had a geological model that was subject to review based on mapping, monitoring and performance that underpinned the support design process.
- The five longwall sites had systems for accessing the faces. These generally lacked detail around how to select and install temporary supports.
- The mines' systems of mapping, monitoring, inspection and review of strata performance provided a response mechanism to geotechnical changes at the mines. There was evidence that when major unexpected changes occurred there may be a delay in determining the magnitude of the change and a corresponding delay in implementing an appropriate response.
- All bolter miners inspected had rib protection as an integral part of the machine. It was noted that the newer machines had more extensive protection fitted generally in the form of polyurethane shields.
- Field verification demonstrated a high level of understanding of the mines' systems and procedures and compliance with the support plans.

One of the mines had a rib incident the day after the site inspection. The incident involved a piece of rib falling across the rib protection and striking a worker, who was uninjured. The mine

made changes to their systems that included tying the rib mesh into the roof support.

Outcome

The inspection campaign resulted in the following:

- Six improvement notices issued
- Six notices of concern issued

The notices covered areas such as longwall access, damaged rib supports and rectification timeframes for areas identified as requiring remediation.

Next steps

The NSW Resources Regulator will continue to monitor the incident trends in this area to determine whether a broader and deeper assessment of industry practice is required.

Recommendations

All longwall mines should review their procedures for access in front of the spill trays and ensure they have sufficient detail on the selection and installation of temporary supports.

Mines should review their trigger action response plans (TARPs) for mapping, inspection and monitoring results to improve the response time to major changes in the mine environment that affects rib stability.

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