

PLANNED INSPECTION PROGRAM OUTCOMES

Explosion Suppression – Underground Coal Mines

Issue

One of the key critical controls within the underground coal sector for fire or explosion risks, is explosion suppression. The critical nature of this control exists due to the high consequences which can potentially occur if the risk is not managed appropriately. Historically, hundreds of mine workers within Australia have received fatal injuries caused by coal dust explosions.

As a result, the NSW Resources Regulator conducts regular planned inspections to monitor compliance with clause 65 of the WHS (Mines and Petroleum) Regulations 2014.

What we did

A total of 59 assessments were completed across 22 individual mines during the period of January 2021 to June 2021, with most mines receiving multiple assessments. Clause 65 of the WHS (Mines and Petroleum) Regulations 2014 details specific requirements, which are regularly assessed by the Regulator and include:

- stone dust is routinely applied to roadways
- a program of roadway dust sampling confirms the required incombustible dust content is maintained and rectified accordingly
- float dust is managed appropriately
- explosion barriers are constructed and installed to a standard that will effectively suppress a coal dust explosion
- explosion barriers are installed at the correct locations
- explosion barriers are inspected regularly.

What we found

Some of the key findings which resulted from the planned inspection program included:

- 22% of assessments had failed roadway dust samples
- 15% of assessments found installation of explosion barriers was non-compliant
- 11% of assessments identified issues with float dust
- allocation of labour and machinery for planned stone dusting windows was often removed and alternatively used for production or maintenance tasks
- statutory officials did not have a strong understanding or awareness of explosion barrier standards and the legislative requirements.

Outcome

Numerous issues were identified throughout the program and resulted in the following enforcement action:

- 26 section 191 improvement notices were issued
- 21 section 23 notices of concern were issued.

There were no contraventions which posed an immediate risk to the health and safety of personnel that required the issuing of a section 195 prohibition notice. There were numerous inspections which required the mine to rectify an identified issue that was in breach of the legislative requirements for explosion suppression.

Next steps

We will continue to conduct assessments for explosion suppression controls within the underground coal sector, due to the critical nature that this hazard presents.

In addition, we constantly complete monitoring and analysis of assessment and/or incident data. This information is then used to determine industry performance and identify high risk practices that require further assessment or intervention.

Recommendations

The following recommendations are direct responses to issues identified from the inspections conducted:

- Mine operators must ensure sufficient time and resources to stone dusting windows to allow for ongoing compliance through pro-active stone dusting. Mine operators should subsequently conduct a review of their ongoing stone dust compliance requirements. This will assist in determining the correct amount of time and resources needed to maintain ongoing compliance.
- Mine operators should address non-compliance issues with face zone explosion barriers, by conducting continual training.
- Mine operators should look to implement a standard for main trunk conveyors to have additional sampling and data collection, which will assist in monitoring compliance.
- Mine operators should immediately address any issues with trickle dusters operating behind auxiliary fans as this area has a high rate of non-compliance. This results in inadequate stone dust being applied during the production cycle.
- Mine operators should consider having a dedicated worker or resource to adequately monitor and assess all requirements within clause 65 of the WHS (Mines and Petroleum) Regulations 2014.

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