Investigation information release

Date: June 2023

Frictional ignition of methane in underground coal mine

Incident date: 27 May 2023

Event: Frictional ignition in underground coal mine

Location: Russell Vale Colliery

Overview

Three workers were exposed to a large flame in a heading in an underground coal mine. It is believed that methane was released from a borehole in the rib that was exposed and then ignited during the coal cutting process.

The mine

Russell Vale Colliery is an underground coal mine in the Illawarra Escarpment, about 9 kilometres north of Wollongong. The mine is operated by Wollongong Resources Pty Ltd. The mine operator uses a place change mining method to extract coal.

The incident

About 3.20am during a weekend nightshift on 27 May 2023, a crew of mine workers were working in an underground roadway at the mine identified as D Heading PC29, which was about 52 metres inbye of the nearest intersection (E Heading PC28). During the shift, an operator was using a Joy 12CM12 dual pass continuous miner to cut coal from the left side of D Heading with a shuttle car positioned behind the continuous miner and its operator and a cable hand also located in the heading. The continuous miner operator was aware that there may have been boreholes in the vicinity of the area where he was working but did not know their precise location.

During the cutting process, the continuous miner exposed a borehole in the mid-section of the left rib adjacent to the face. Methane was released from the borehole and ignited. It was believed that the ignition source was rocky material coming into contact with the picks on the continuous miner's cutting drum. A large flame spread from the left side across the width of the heading, over the continuous miner and towards the workers. The cable hand and continuous miner operator immediately moved to the ground. The shuttle car operator moved the shuttle car outbye and both he and the cable hand left the heading.

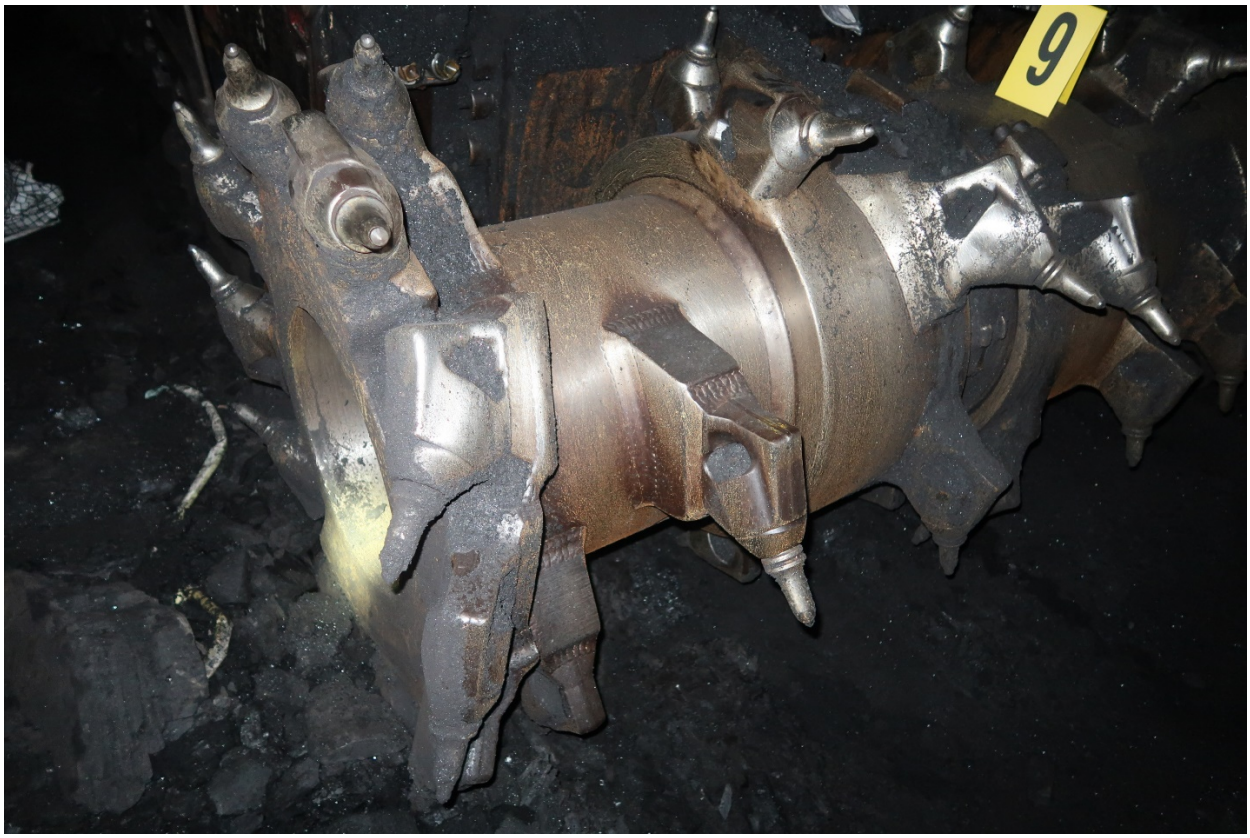
After the initial burst of flame, a fire along the roof continued to burn. The continuous miner operator cut power to the continuous miner. He released the continuous miner's water supply hose and applied water from it onto the flame. The flame was extinguished after about 30 seconds. The continuous miner was moved outbye of the face and workers observed water and material being released from the borehole.

The workers were not physically injured in the incident.

A report will be published when the investigation is complete.

Figure 1 - Location of incident and borehole

Figure 2 - Picks on the cutting drum of continuous miner, which are believed to have contacted a rock or similar material in the heading to provide an ignition source



The Investigation

The NSW Resources Regulator has commenced an investigation to determine the cause and circumstances of the incident, which will explore, among other things, the:

- action taken by the mine operator following 2 other recent friction ignition incidents that occurred at the mine
- information and instruction provided to workers about the location and management of boreholes at the mine
- adequacy of risk assessments, work instructions and procedures used at the mine to identify and control the risks to health and safety associated with frictional ignitions
- management of ventilation and gas in the panel where the incident occurred.

Safety observations

Mine operators and contractors are reminded of their duty to identify hazards and manage risks to health and safety in accordance with the provisions of the *Work Health and Safety Act 2011* and *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Regulations.

In particular, operators of underground mines must:

- develop and implement a principal hazard management plan for fire and explosion that appropriately identifies and considers frictional ignition risks (including those associated with the presence of incendive rock and methane gas), with effective control measures implemented
- ensure mining practices permit sufficient air quality, quantity and velocity to remove accumulations or sudden releases of methane gas within underground roadways
- ensure that workers are provided with clear and precise information about the locations of boreholes in areas where mining activity is occurring
- ensure that workers are provided with adequate instructions and training about how to control the risks to health and safety associated with frictional ignition when intersecting boreholes.

Further information

Please refer to the following guidance materials:

- PUB18/199 - Investigation information release - Ignition of methane at continuous miner working face
- PUB18/143 - Workers withdrawn after methane frictional ignition
- ACARP/Simtars - Commissioned Study on Frictional Ignition.

About this information release

The Regulator has issued this information to draw attention to the occurrence of a serious incident in the mining industry. Further information may be published as it becomes available.

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- view our publications on other causal investigation.

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