Investigation
Information release

NSW RESOURCES REGULATOR

CAUSAL INVESTIGATION PRELIMINARY REPORT

Workers trapped in shaft winder

Incident date: 5 September 2018

Event: Two workers trapped in number 3 shaft winder conveyance mid shaft

Location: Tahmoor Colliery, Tahmoor NSW

Overview

On 5 September 2018, the NSW Resources Regulator was notified of the entrapment of two mine workers in a shaft winder cage, suspended about 160 m from the surface at Tahmoor Colliery. The mine and emergency services conducted a successful rescue operation, with both workers removed unharmed from the shaft.

The regulator conducted initial enquiries and has begun a causal investigation in collaboration with the mine operator Tahmoor Coal Pty Ltd - SIMEC Mining and worker representatives.

While the investigation is ongoing, inquiries to date have identified that:

- The No. 3 shaft winder had experienced a significant increase in use in the weeks prior to the incident
- During the daily shaft inspection, a deputy noted that at mid-shaft, where the shaft winder counter weight and man riding conveyance pass, the counterweight appeared misaligned
- While mine maintenance personnel where investigating the reported misalignment, workers continued to use the shaft winder
- Two workers entered the shaft winder conveyance and began to travel to the surface. During the wind to the surface the winder tripped on a seam profile switch. Preceding the winder trip, workers on the surface noticed unusual noises and excessive vibration of the head ropes
- A fixture known as a water ring (guttering on the wall of the shaft used to capture water) has been sheared off the sidewall and is wrapped around the counterweight head ropes and guide ropes. Other shaft services related to the water ring had also been damaged.

This preliminary report is being issued at this early stage of the investigation in accordance with the regulator's causal investigation policy. A full investigation report will be published on the completion of the investigation.

Photograph 1: Tahmoor No.3 shaft winder. Photograph by Resources Regulator

The mine

Tahmoor Colliery is a coking coal operation situated about 75 km south west of Sydney, with a workforce of about 400 people. Annual production is about 2.5 million tonnes ROM per annum, the bulk of which is coking coal primarily used for steelmaking in blast furnaces, both in Australia and internationally. Tahmoor Colliery is a supplier of coking coal to the Whyalla Steelworks, also owned by SIMEC.

The mine has two means of egress, the main worker and materials drift and the No.3 downcast shaft, the latter being the location of the rescue operation. The mine uses a drum winder on the drift and a friction winder on No.3 shaft for egress to and from the mine.

Tahmoor Colliery is operated by Tahmoor Coal Pty Ltd, a subsidiary of SIMEC Mining.

Investigation

A causal investigation team comprising of representatives from the mine operator Tahmoor Coal Pty Ltd - SIMEC Mining, worker representatives and the Resources Regulator was established to investigate and identify the causal factors that led to the failure of the No. 3 shaft winder. Inquiries to date have identified the following:

Events leading to the incident

In the weeks preceding 5 September 2018, Tahmoor Colliery had begun a programmed conveyor belt replacement on its main drift conveyor. The programmed conveyor belt replacement led to restricted access to the drift, resulting in No.3 vertical shaft being the primary means of personnel transportation into the mine. This change resulted in a significant increase in the use of No.3 shaft winder.

Events on 5 September 2018

Mining supervisor travels down shaft and conducts shaft inspection

A shift deputy began his daily shaft inspection at 2.27 pm. The deputy noted that at mid-shaft, where the counter weight and man riding conveyance pass, the counterweight appeared misaligned. While still in

the shaft the deputy contacted the control room operator via the DAC system to advise of the potential issue, then continued with his shaft inspection until he reached pit bottom.

Following the deputy's call to the control room, engineers were informed of the misalignment of the counterweight. A mechanical fitter attended the shaft winder to investigate the deputy's observations.

Mining supervisor and eight-hour crew travel to surface

While the mechanical fitter was investigating the issue on the surface of the shaft, a work crew and the deputy who had recently completed the shaft inspection travelled to the surface using the winder without encountering any problems. Once at the surface, the deputy discussed his observations in relation to the misaligned counterweight with the mechanical fitter.

Two workers use shaft conveyance

At 2.47 pm, two workers who were underground at the bottom of the shaft called the cage down and travelled to the surface without problems. During inquiries following the incident, one of the workers reported that he may have heard a noise as the conveyance travelled to pit bottom.

Afternoon shift crew travel to pit bottom

At 3.20 pm, about 60 afternoon shift workers entered the conveyance at the surface and travelled to the pit bottom. Workers in the conveyance felt vibration and heard noises as they travelled down the shaft. A shift deputy who was in the conveyance during the trip contacted the control room immediately after alighting from the conveyance to report the unusual vibration and noises.

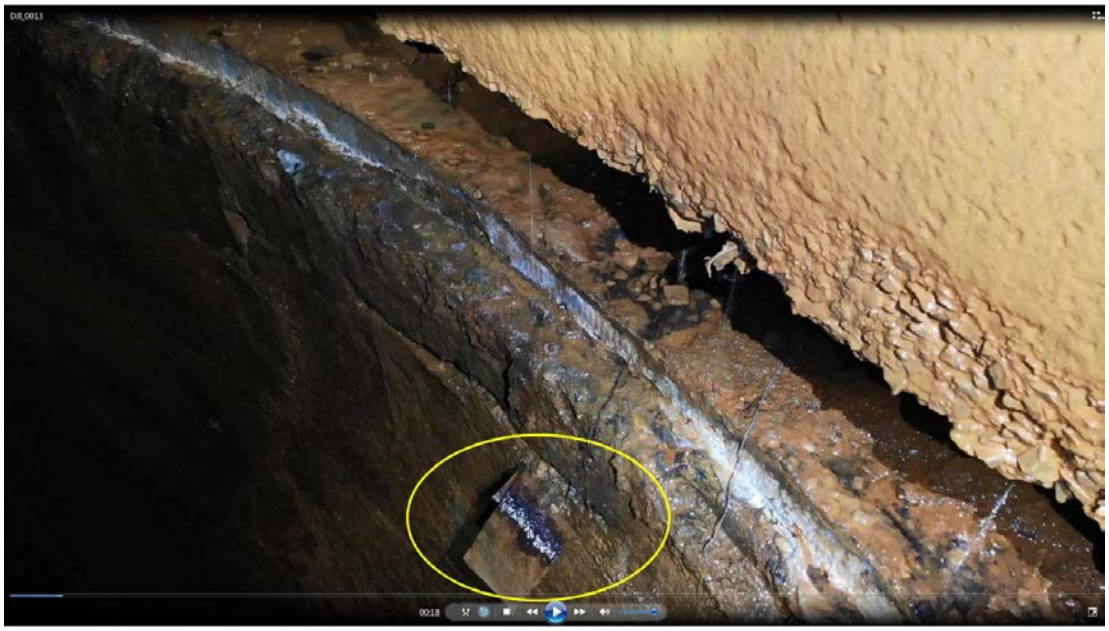
The incident

Two workers enter conveyance at pit bottom and begin to travel to the surface

At 3.26pm, two workers entered the No.3 shaft conveyance and began to travel to the surface. This occurred while the deputy was on the phone to the control room. During the wind to the surface the winder tripped on a seam profile switch. Preceding the winder trip, workers on the surface noticed unusual noises and excessive vibration of the head ropes.

Later analysis of the scene identified significant damage in the shaft. A shaft fixture known as a water ring (guttering on the wall of the shaft used to capture water) was sheared off the sidewall and was wrapped around the counterweight head ropes and guide ropes. Other shaft services related to the water ring were also damaged.

Photograph 2: Water ring bracket damage in shaft. Photograph by Resources Regulator



Photograph 3: Water ring wrapped around guide ropes, head ropes and services in shaft. Photograph by Resources Regulator

The incident response

Following the incident, the mine formed an incident management team and began recovery operations. The mine notified the incident to the Resources Regulator and emergency services. Emergency services and Resource Regulator inspectors were immediately deployed to site.

Following a risk assessment, the rescue began about 10 pm and the two workers were safely recovered uninjured from the shaft by Fire and Rescue NSW using a crane and work box.

All underground operations at the mine have ceased as this winder is non-operational (at the time of writing) and is one of two egresses required by mine safety legislation.

Recommendations

While the analysis of the causal factors involved in this incident are continuing, mine operators should review their safety management systems, particularly focusing on:

- → the implementation of change management processes in relation to significant changes in winder demand, including loading and frequency of operation
- → maintenance of control measures required to maintain the safety of shafts and winding systems
- → the identification of critical controls and verification activities required to maintain the safety of shafts and winding systems
- → the integrity of maintenance and inspection work order systems for shaft and winding systems
- → the triggers for response actions, with respect to observed abnormal conditions for shafts and winding systems
- → existing safety audits for winding systems and ensure the hierarchy of controls have been applied to identified non-conformances to the required standards or guidelines.

Further information

This investigation is ongoing. The regulator will issue a final report once analysis of all available evidence is complete. Further information in relation to safety systems for shaft winding systems can be found on the regulator's website.

About this information release

The Resources Regulator has issued this information to draw attention to the occurrence of a serious incident in the mining industry. Investigations are ongoing and further information may be published as it becomes available.

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 the information upon which they rely is up to date and to check the currency of the information with the appropriate officer of the Department of Planning and Environment or the user's independent adviser. All photographs were taken by the Resources Regulator.

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