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Mines and preparing for fires

This safety bulletin provides safety advice for the NSW mining industry.

Key information

1. Mine and petroleum site operators must ensure that their safety management system and their emergency plan can be used to respond to foreseeable emergency situations caused by fire events.
2. There are duties to prevent and mitigate bush fires, including notifying emergency services within the *Rural Fires Act 1997* and Rural Fires Regulation 2013 that are in addition to the requirements of the work health and safety laws.
3. Coal mines and most underground mines must consult with emergency services in the development of their emergency plan, which should include the type of incidents required to be notified to the emergency services and the arrangements for responding to fires at or near the mine. Other types of mines and petroleum sites should also consult with relevant fire service where there is a risk of fire.
4. All underground mines should have a documented underground fire risk assessment that is current and specific to its operations, with appropriate controls in place to manage the risks.

Background

Fire events, within the vicinity of mines and petroleum sites may present risks to health and safety.

In the past few months, the Resources Regulator has noted there has been an increase in the reporting of fires on mobile and fixed plant on mine sites that had the potential to cause major damage, destroy machinery or harm a person. Fire and explosion events may disrupt mining operations.

Mine operators must also be aware of other regulatory reporting requirements that may be required arising from a fire or explosion event.

Figure 1: Fire and explosions may disrupt mining operations. Photo credit Steve Brown, Resources Regulator.



Legislation

Work health and safety legislation relevant to fires and explosions in mines and petroleum sites include:

- [Work Health and Safety Act 2011](#), which contains provisions relating to safe systems of work and ensuring the health and safety of workers and others who may be affected by a work activity, and provisions for the management of risks
- [Work Health and Safety Regulation 2017](#), which includes provisions for specific control of fires and explosions, fire protection and firefighting equipment and provisions on PPE and emergency plans
- [Work Health and Safety \(Mines and Petroleum Sites\) Regulation 2014](#), which includes provisions specific to principal hazard management and control measures for fires or explosions, and provisions on emergency response

Further legislation

- [Coroners Act 2009](#), which empowers coroners to investigate fires and explosions that destroy or damage property or those where people have been injured within the state. This allows coroners to determine the causes and origins of—and in some cases, the general circumstances concerning—these fires and explosions.
- [Fire Brigades Act 1989](#) and [Rural Fires Act 1997](#) outline the powers of fire authorities to access property to suppress fires and conduct investigations, along with specific requirements about the notification of fires during bush fire danger periods.

Discussion

Fire events may cause damage and operational losses, as well as threaten the health and safety of people at mines and petroleum sites. The safety of the public may also be at risk from mine site fires or explosions. The fire may spread beyond the mine boundaries with bushfire and harmful smoke threatening offsite people and property.

Coal mines and mobile equipment account for most fire incidents reported to the regulator. Bushfires nearby or on mining operations may threaten surface infrastructure such as mine ventilation fans, office buildings and worker facilities, power supply lines and structures, handling and processing plants, rail and other ancillary supply infrastructure.

Bushfires may also impact mine access and exit for workers and emergency services personnel, mobile plant, stored flammable and combustible products such as coal stockpiles, chemicals and explosives, and even coal seams in pit and where they outcrop on the surface.

Coal seam fires have serious health and safety impacts. They are often started by lightning or bushfires, and are particularly dangerous because they continue to smoulder underground after surface fires have been extinguished, sometimes for many years, before flaring up and restarting bushfires nearby.

Smoke and hot embers from surface fires may inundate underground mine workings resulting in, among other hazards, poor visibility, reduction in the quality of air and other breathing difficulties for workers underground, and the evacuation of the mine.

Hot summer weather may result in total fire bans and may have implications for mining and petroleum operations within the fire ban regions. See the Rural Fire Service website for details:
<https://www.rfs.nsw.gov.au/fire-information/fdr-and-tobans/total-fire-ban-rules>

Mobile and fixed plant fires may result in major damage to the equipment or even total loss with the plant burnt beyond repair. People operating the equipment, located nearby or fighting the fire may suffer burns, if not serious or even fatal injuries.

When there is a significant fire or explosion event on a mine or petroleum site, external emergency services such as the NSW Rural Fire Service, Fire & Rescue NSW and NSW Police may also respond, in addition to activating the emergency response arrangements at the mine or petroleum site, and may conduct investigations in relation to the incident.

The Coroner is required to be notified of fire and explosion events that have destroyed property or caused damage of a value greater than \$500,000. As well as notifying the regulator, you should contact NSW Police when such a fire or explosive event occurs.

Recommendations

The work health and safety legislation of NSW requires mine and petroleum site operators, contractors and other persons conducting a business or undertaking at mine and petroleum workplaces to conduct a risk assessment to identify potential risks and emergency situations caused by fires and explosions.

Mine and petroleum site operators must ensure that their safety management system and emergency plan can be used to respond to foreseeable emergency situations caused by fire events.

Mine and petroleum site operators should, and in some cases must, in so far as reasonably practicable, consult with Fire & Rescue NSW, or the NSW Rural Fire Service if within a rural fire district, when preparing and reviewing their principal hazard management and emergency plans.

Underground mines

The prevention of fires is a priority for underground mines as they can prevent people from leaving the underground workings of mine sites and can lead to smoke inhalation, serious or fatal burns, asphyxiation and other serious consequences such as explosions.

Further Information

NSW Resources Regulator

Safety alerts and bulletins:

- [SA00-21 Major excavator fire at open cut coal mine](#)
- [SA01-02 Update on fire suppression systems](#)
- [SA04-02 Fire traps truck driver](#)
- [SA08-03 Lightning strikes stationary truck](#)
- [SB08-07 Failure of fire suppression system on rear dump truck](#)
- [SA10-06 Contractor suffers serious burns](#)
- [SA11-12 Ignition of gas leads to underground fire](#)
- [SA12-01 Inappropriate maintenance practices and fire protection lead to major plant fire](#)
- [SB13-05 Too many underground fires](#)

- [SA13-07 Fire in 33kV XLPE cable splice](#)
- [SA15-01 Fire ignites after worker drills into a sealed void](#)
- [SB15-03 Fires ignite while refuelling mobile plant with quick-fill fuel systems](#)
- [SA15-05 Fire destroys water truck](#)

Codes of practice:

- [Emergency planning for mines](#)

Mining design guidelines:

- [MDG1032 Prevention of coal mine fires](#)

Ancillary reports:

- [Ancillary information: fire related to mobile plant](#)

Investigation reports:

- [Fire and explosion on Longwall - Blakefield South Mine](#)

QLD Department of Natural Resources and Mines

Mines safety bulletins:

- [Fixed plant and mobile equipment fires on surface coal mines](#)

WA Department of Mines and Petroleum

Guidelines:

- [Prevention of fires in underground mines](#)

NSW Rural Fire Service

To locate fires near you and for major fire information, publications and resources:

- <http://www.rfs.nsw.gov.au/>

NOTE: Please ensure all relevant people in your organisation receive a copy of this Safety Bulletin, and are informed of its content and recommendations. This Safety Bulletin should be processed in a systematic manner through the mine's information and communication process. It should also be placed on the mine's noticeboard.

Issued by

Garvin Burns

Chief Inspector of Mines

Appointed pursuant to Work Health and Safety (Mines and Petroleum Sites) Act 2013

View more safety alerts and search our safety database at

<http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/safety-and-health/incidents/safety-alerts>.

If you would like to receive safety alerts by email, enter your contact details on the [Mine Safety website](#).

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (January 2018). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the NSW Department of Planning and Environment or the user's independent advisor.

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