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2.1.1  The Operation is to complete a documented risk
2.1 General
Mandatory Requirements
unplanned or uncontrolled fire or explosion.

The intent of this Protocol is to eliminate
and incidents arising from risks related to
or minimise potential fatalities, injuries
assessment to identify the hazards associated
assessing the risks and implementing controls.
where an area is deemed hazardous (within 15 metres
evaluation of fire or an explosion risk
such as elevated gas levels.

Where hot work is to be completed outside
a designated hot work area, a hot work
permit is not required, except where an
area is deemed hazardous (within 15 metres
of flammable liquid, vapours, gases, combustible
liquids, dusts or fibres, or other flammable or explosive substances are
present including equipment with fuel in
the tank or exposed hydraulic areas).

Where hot work is completed in a hazardous
area, it is mandatory that a fire watcher be
stationed in the area of the hot work to
continuously monitor the job during the
hot work, and for a minimum of two hours (and
up to four hours, dependent upon the risk)
after task completion. The role of the fire
watcher is to continuously monitor for
fire outbreak and this person is not to be given
other duties or leave the location unless
replaced. The fire watching time may be
reduced to 30 minutes if a thermographic
camera is used to detect presence of heat
reduction to 30 minutes if a thermographic

Where an explosion risk is present, standards
for the purchase, installation, commissioning,
use and maintenance of equipment are to
be developed, implemented and maintained.

Where there is a risk of spontaneous
combustion, frictional ignition or high levels
of flammable gas being present, issue-
specific processes are to be developed,
implemented and maintained for each of
the hazards.

2.1.8 Prior to the use of polymeric chemicals, risks
associated with storage, handling and use
are to be assessed. Consideration is to be
given to limitation of application volumes,
placement method and interaction with the
chemicals.

2.2 Training and Competency
2.2.1 Identification and maintenance of training
needs and competency requirements of
relevant employees and contractors in
relation to fire and explosion, inclusive of
relevant procedures and permits.

2.2.2 Specific competency is to be assessed before
working on explosion-protected equipment.

2.3 Underground
2.3.1 Where the risk of ignition of gases and coal
dust exists in an underground coal mine,
the Operation is to complete a documented
technical assessment. Sources may include
initiation by electrical arcing, lightning,
frictional ignition, spontaneous combustion
or fire. The assessment is to include sampling
and laboratory testing and is to be completed
for the seam gas content, frictional ignition
potential and spontaneous combustion
potential.

2.3.2 Where a flammable gas risk exists, the
controls are to include:

a) A real time system that monitors
concentrations of gases in return airways
and ventilation splits
b) A tube-bundle system for monitoring gas
concentrations in sealed or abandoned
areas of the mine
c) Setting of threshold levels for the
monitoring of gases
d) Appointment of competent persons to
monitor and take action when an alarm is
triggered

e) Maintaining a record of alarm events
f) A regime for monitoring gas levels in
intake and return airways, sealed areas
and work areas
g) Installation of flammable gas monitors
on coal cutting machinery and either
installed or carried on diesel vehicles
operating in hazardous zones

Intent
The intent of this Protocol is to eliminate
or minimise potential fatalities, injuries
and incidents arising from risks related to
planned or uncontrolled fire or explosion.

Mandatory Requirements
2.1 General

2.1.1 The Operation is to complete a documented risk
assessment to identify the hazards associated with
fires and explosions. This includes assessing the risks and implementing controls. As
a minimum, the risk assessment is to give consideration to:

a) Sources of ignition
b) The presence of combustible material
c) The presence of explosive gases
and atmospheres
d) The storage of incompatible substances.

2.1.2 The Operation is to develop, implement and
maintain a management plan for fire and
explosions, based on the risk assessment. As
a minimum, the management plan is to include
specific requirements for:

a) Fire and explosion prevention
b) Fire and explosion control
c) Firefighting equipment, including the
availability of an adequate water supply
d) Reference to other applicable related
management plans such as spontaneous
combustion and dust suppression

Installation of fire and explosion
detection, monitoring and suppression
systems, commensurate with the fire
and explosion related risk, in appropriate
locations and on relevant items of plant
and equipment; i.e. heat or smoke
detectors, gas detection systems, gas,
foam or water deluge systems, explosion
suppression systems, hydrants and hoses
and portable fire extinguishers

Installation of systems including both
periodic and continuous monitoring of
the status of fire and explosion risk

Inspection, testing, calibration and
maintenance of fire and explosion
detection and monitoring systems in
compliance with site strategies and
manufacturer’s specifications

The actions to be undertaken upon
discovery of a fire or an explosion risk
such as elevated gas levels.

Never modify safety devices without permission.

Never operate equipment unless authorised.

Installation of flammable gas monitors
installed or carried on diesel vehicles
on coal cutting machinery and either
installed or carried on diesel vehicles
operating in hazardous zones

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2.3.4 Where a frictional ignition risk exists, the controls are to include:

a) Verifying the drums and picks fitted to cutting equipment are designed to eliminate or minimise the potential of a frictional ignition event

b) Using adequate water sprays for suppressing any sparking associated with cutting

c) A program that inspects and maintains water sprays, picks and cutting drums to an appropriate standard

d) Ventilation of the cutting area to remove or dilute any accumulation of flammable gases to below statutory limits

e) Appropriate gas fire extinguishing equipment maintained in close proximity to the face;

f) Cutting procedures that minimise the risk of frictional ignition, such as the intersection of gas drainage holes

g) Roof and rib bolting procedures that minimise the risk of frictional ignition, particularly over-spinning of bolts or heat generation in or near the roof and rib.

Where a spontaneous combustion risk exists, the controls are to include:

a) A real time system that monitors concentrations of gases in return airways and ventilation splits

b) A tube bundle system for monitoring gas concentrations in sealed or abandoned areas of the mine

c) The analysis of bag samples using a gas chromatograph

d) Developing, implementing, and maintaining Trigger Action Response Plans (TARPs) for indicators of spontaneous combustion

e) Management of stowage around the mine

f) A procedure to manage spontaneous combustion in relevant areas of the mine, including sealing and inertisation

Where a risk from lightning-initiated gas ignition exists, the Operation is developed, implemented and maintained in a Lightning Management Plan, based on a lightning risk assessment. It is to involve a subject matter expert and include the following:

a) The electrical resistivity of the strata at the operation

b) Assessment of any conductive boreholes that enter the workings including location and application

c) Installation of gaps in roof and rib mesh

d) Document all possible connection points

2.3.5

f) Remove all conductive cables, pipes and other structures from areas that will become sealed if these items are greater than 20 metres in length

g) Processes to prohibit shotfiring during times of high lightning activity.

2.4 Further Considerations

2.4.1 Operations are to consider as part of their continual improvement and good practice initiatives:

a) Identification of aspects of machines or installations with the potential to cause a fire or explosion such as turbochargers, lack of segregation of heat and ignition sources from fuel sources, inadequate routing, protection or restraint of fuel lines and hydraulic hoses, damage etc.; if appropriate, carry out modifications to the equipment to minimise the risk.