

RECOMMENDATIONS

*Replacement of
Recommendation made*

Introduction

The ignition source considered by the Warden's Inquiry to have been the most probable trigger for the Moura No.4 Mine explosion was the flame safety lamp. The use of such a lamp has since been prohibited in Queensland coal mines. Even so it cannot be stated with certainty that removal of the lamp will ensure that such a disaster will not occur in similar circumstances.

Other potential sources must therefore be taken into account despite the fact that it is not possible to determine that any one of them caused ignition resulting in the Moura No.4 Mine explosion. The recommendations are therefore submitted in order of priority and the first of these is aimed at prevention of mine explosions.

1. Inertisation

Research including study of existing overseas practice for rendering inert the atmosphere in a goaf.

2. Training

Underground coal mine personnel to be made aware of risk of frictional ignition by machines impacting on rock where flammable gas is present.

3. Flame Suppression

Research/investigation be undertaken to determine how underground coal getting equipment can be fitted with means of preventing ignition of flammable gas by machines.

4. Contraband

Enforcement of regulations to eliminate use of materials underground in coal mines which are able to cause an ignition of flammable gas. Examples are prohibition of certain alloys and the use of hoses other than the fire-resistant, anti-static (FRAS) type.

5. Structuring of Scientific Investigation of Mine Explosions

The Chief Inspector of Coal Mines to be charged with the responsibility of conducting such investigation into any future incident in the manner described in Section 8.4 of this report. The investigation report should be made available to the Mining Warden for purposes of Inquiry into the cause.

6. Liaison with other Government Departments

To facilitate the foregoing recommendation the Chief Inspector of Coal Mines should arrange close liaison with the Queensland Police Force and the Queensland Health Department as well as SIMTARS to ensure prompt action in the event of an underground mine explosion. It is vital that all personnel who would be involved in explosion investigation be prepared

for their roles.

7. Forensic Pathology

Adequate facilities need to be made available in regional centres to obtain the maximum amount of information needed to investigate the cause of an explosion. Alternatively arrangements can be made for speedy transportation to Brisbane and the forensic work carried out there.

8. Recording of Information in the Mine

It is recommended that a photographic record be made of explosion-affected mine workings at the earliest opportunity. If at all feasible this should be carried out before the affected area is disturbed. While the rescue of personnel is paramount it is important that the area be photographed before any, or least, disturbance is caused to the explosion scene.

The use of a video camera complete with voice recording would provide the most effective means of gathering information. The person used for this work would need to be skilled and trained to wear self-contained breathing apparatus.

9. Further Research

Priority should be given to prevention of mine explosions rather than sophisticated methods of post-explosion investigation. This can be achieved by eliminating one of the conditions which have to coincide for an explosion to be possible. These conditions include:

- . Presence of flammable gas within a relatively narrow range - and coal dust concentrations.
- . Source of ignition.
- . Adequate supply of oxygen.

Elimination of one of these conditions is achievable and efforts at SIMTARS should be directed to this end.