



Hazelwood Inquiry info/DPC@DTF

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Subject Morwell Mine Fire Submission

1 attachment



HAZELWOOD-MINE-FIRE-INQUIRY-JHarrison-Submission.doc

Title: Mr

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Content of submission (you can choose multiple): Origin and circumstances of fire, Measures taken by Hazelwood Coal Mine to prevent fire, Response to fire by Hazelwood Coal Mine, Other (please state)

If Other please state here: At the time of the 1977 fire I was the Engineer in Charge of Auxiliary Operations in the Hazelwood Mine. The fire crews reported to me and I have used my experience in that fire to outline my views on how to make the pit safer from another fire.

Please select one of the following options: I acknowledge that my submission will be treated as a public document and may be published, quoted or summarised by the Inquiry.

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Submissions Hazelwood Mine Fire Inquiry  
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## **HAZELWOOD MINE FIRE - AN HISTORICAL PERSPECTIVE**

The 4<sup>th</sup> of November 1977 was a warm sunny day with a north-westerly wind gusting up to 80km/h. Just after noon a small fire was observed on the northern side of the pit. Fire Service personnel attended and a water tanker was driven back and forth over the area using the spray bar on the back to suppress the fire. This was not controlling the fire as it flared immediately the vehicle passed. Hoses were then connected to hydrants at the site and the fire area was being reduced working from the outside towards the centre.

Work with the hoses had not long commenced when a swirling gust of wind picked up the burning embers and spread the fire 400 metres along the northern batters and the working coal face within what seemed like seconds. The battle to save the mine then commenced.

The mine was considered to be well protected from fire with pipelines along the batters and the working faces with sprays and hydrants installed. There were two sources of water in the pit:

- Artesian water pumped from beneath the coal seams to the clean water pumping station, and
- The dirty water pumping station at the bottom of the pit that drained the mine.

The combined pumping capacity of these two sources was approximately 3,000 litres per second.

The fire service team went into action turning on the sprays ahead of the fire to try and prevent its spread while additional firefighting resources were organised. Most of the artesian bores were on the northern batters and the fire was threatening their electrical infrastructure. A decision was made to turn off the power leaving the dirty water pumping station as the sole source of water.

Firefighting resources were dispatched to protect this asset, however, there was burning ash blowing over the area and the situation became untenable. The site was abandoned and as the power poles began to burn the power was turned off.

There was now no in pit water supply and the Hazelwood Pondage pumps were brought into action. They had the capacity to supply at 2,000 litres per second. Despite the large capacity of water available the fire was not being contained. At about 3.00pm there was a wind change from North-Westerly to a light Southerly accompanied by a thunderstorm which produced mostly lightning.

Lightning knocked out the power to the Hazelwood Pondage pumps so there was no water supply. Despite detailed planning all mine sources of water had failed and there was now only Morwell town water which had limited capacity. Power was restored within 30 minutes and pumping recommenced.

As Hazelwood was producing 40% of Victoria's electricity at the time it was a high priority to bring the fire under control. By mid-afternoon there were 500 people fighting the fire.

The firefighting efforts in the first three hours had little effect on the fire, it spread to cover approximately half the pit. What saved the mine was the wind change. It stopped the spread of the fire along the faces and held it on the northern batters. From that point onwards teams systematically suppressed the fire and it was under control by the evening and essentially out in three days.

What conclusions can be drawn from the 1977 fire:

- In windy conditions the fire will spread quickly, half the pit was involved in three hours
- A well-resourced and proactive organisation cannot stop the spread of a fire if the conditions are against it.
- Having good infrastructure and a high capacity water supply will not stop the spread of a fire.

The latest Hazelwood fire involved the worked out part of the pit. The surface of the exposed coal dries to approximately 12% moisture content and is a high energy source of fuel, over 20Mj/t. Once it is alight a fire will spread more quickly than resources can be brought to bear to stop it. Given conditions similar to 4<sup>th</sup> November 1977, or worse, another Hazelwood fire can and probably will happen again.

### **How to Stop or Prevent another Fire**

Fires do not happen every year in the mines in the Latrobe Valley, Yallourn in 1944 and Hazelwood in 1977 were the two largest fires. A long term approach to solving this problem needs to be implemented. There is time to do so and it involves not only Hazelwood but Yallourn and Loy Yang. They are all vulnerable.

On the day of the 1977 fire automatic sprays were being used during the morning to try and keep the coal surfaces wet to suppress dust and the possibility of fire. However, this left pools of water in low points on the coal operating levels. A vehicle drove through one of these pools of water and splashed coal laden water onto the exhaust pipe where it dried, caught fire, dropped on the ground and started the fire. When the fire spread these sprays did not stop it.

It is my understanding that most of the infrastructure has been removed from the worked out section of the pit. It will involve considerable cost to reinstall it and given the 1977 experience I would doubt the long term effectiveness of doing so.

The most effective way of preventing another fire is to cover the exposed coal faces. A number of methods could be employed:

- Fill the sides of the pit with overburden from the current operation
- Spray the faces with fire resistant material
- Bulldoze the batters to a flatter angle and then cover them with clay.
- Use the worked out section of the pit as a landfill or similar use.
- Fill the pit with water

Whatever method is chosen it will need to be a longer term operation as the scale of the task is large. In the short term good fire prevention around the pit will be required to lessen the risk.

**John F Harrison**

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