Best Practices Fire Protection

Card No. BPFP-6

VENTILATION

Following VENTILATION changes, it is important to measure the airflow and direction in all areas affected by the ventilation change. A good practice to apply after a major air change is to assign a certified person to examine all of the affected areas for low airflow. This is especially important in areas where power centers and charging stations are located.

- **ALWAYS** maintain a minimum air velocity in any set of entries that would prevent smoke roll back in the event of a fire.
- **ALWAYS** utilize individuals that are trained and certified to evaluate the effects of a major ventilation change.
- **ALWAYS** mark and identify piping used for ventilating accumulations of methane to the returns, particularly in high spots on the haulage.
- **ALWAYS** park your vehicle outby high spots during haulage preshift examinations, and check for accumulations of methane before proceeding.
- **ALWAYS** keep a positive air pressure on all stopping lines in entries designated smoke-free.
- **ALWAYS** understand the pressure relationships when cutting through or holing into previously mined areas and their effects on other areas of the mine.
- **ALWAYS** automate (where practical) ventilation devices used to control airflow where vehicles must travel to minimize damage to these controls.
- **ALWAYS** maintain airways free from obstructions which hinder effective ventilation.

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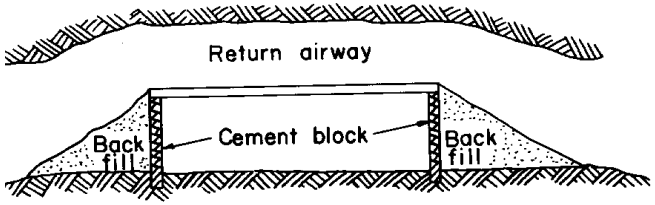
- **ALWAYS** minimize recirculation to prevent mine gasses from accumulating to dangerous levels.
- **ALWAYS** examine critical ventilation controls on a regular basis to ensure they are performing as intended.
- **ALWAYS** train mine rescue personnel to recognize the hazards associated with changing ventilation in a mine fire situation.
- **ALWAYS** remove power from completed panels and idle areas as soon as possible.

DESIGN CONSIDERATIONS

- **ALWAYS** consider maintaining a computer model of the mine's ventilation system to evaluate air changes, fan outages and potential fire situations.
- **ALWAYS** design and install ventilation controls to serve their intended function and minimize leakage.



Typical example of overcast design

- **ALWAYS** consider methane liberation from other areas of the mine in addition to the working face. Examples include: virgin ribs, gob areas, old works etc.
- **ALWAYS** consider air migration between mines in multiple seam applications.
- **ALWAYS** consider mounting a pressure measuring device at key regulators to quickly determine changes in the mine's ventilation system.
- **ALWAYS** consider electrical installation locations to minimize the use of pipe overcasts.
- **ALWAYS** train key mine personnel in the use and understanding of the equipment used in making ventilation measurements.

- **NEVER** use the fan explosion doors to gain access to the mine without creating an airlock for this purpose.
- **NEVER** assume that the proper adjustments have been made following a change in ventilation.
- **NEVER** restore power to an area where the ventilation has been changed without a thorough examination.
- **NEVER** make changes to the ventilation during a mine fire that could adversely affect miners inby.

It Happened...

On March 11, 1989, a smoldering fire was detected under a roof fall at a 4-way intersection. Ventilation curtains were installed to course the air from the fall area directly into the return air course. The fall was cleaned up and the hot spot was extinguished with water.

On July 5, 1989, a fire was discovered at an underground battery station. Sealing operations were begun. The air was short-circuited by removing the first permanent stopping between the intake and return entries inby the mine portals while the final seals were constructed.

On October 11, 1992, a fire was discovered in a conveyor entry near a portal. High air velocities through the conveyor enclosure and airlock area caused the fire to spread rapidly. The mine fans were shut down after the mine was evacuated.

Typical mine fan installation