

Fire Detection Fire Protection



Best Practice Series BP-82

Fire detection systems vary in their design and application. Different types of detectors look for different products generated by the fire. Some detectors look for heat, some look for specific gases such as carbon monoxide (CO), some look for smoke, and some look for light produced by a flame. With advances in technology, it is possible to have different combinations of detection to monitor a wider spectrum of fire conditions.

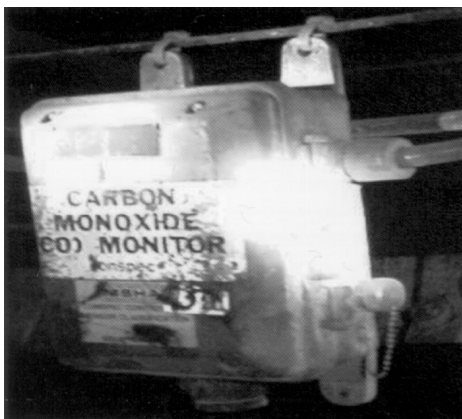
LOCATIONS

- ✓ Belt drives
 - ✓ Bleeder entries
 - ✓ Idle areas
 - ✓ Unattended electrical equipment
 - ✓ Beginning and end of belt flights
- **ALWAYS** investigate fire alarms immediately. Treat an alarm as if a fire exists until proven otherwise.
 - **ALWAYS** determine the causes of nuisance alarms and correct the problem.
 - **ALWAYS** keep sensors clean and dry and maintain them in working order.
 - **ALWAYS** report fire detection system problems to mine management.
 - **ALWAYS** test the sensors in a fire area as soon as possible after the fire is extinguished.
 - **ALWAYS** replace sensors that show signs of fire damage.
 - **ALWAYS** connect sensors together using MSHA-approved flame-resistant cable that also meets the specifications of the detection system manufacturer.
 - **ALWAYS** monitor your detection systems from one central location.
 - **ALWAYS** consider the use of infrared or thermal imaging systems for detecting hot spots.

- **NEVER** rely only on your sense of smell to warn you of a fire.
- **NEVER** make field repairs to faulty sensors; replace them with approved new ones.

It Happened . . .

- ☛ An electrical fault in the transformer windings caused a fire in a 1500 KVA load center. A CO sensor three crosscuts outby the fire went into alarm and was subsequently investigated. The fire was contained within the load center and put out with fire extinguishers.
- ☛ A belt fire occurred due to friction against the belt structure. Brattice cloth and material under the belt caught fire. The fire was detected by a CO monitoring system and prompt response by mine personnel prevented the fire from burning out of control.
- ☛ Following two ten-hour production shifts, a belt fire occurred when the belt was stopped. An idler roller failed causing frictional heating from metal to metal contact. The fire was discovered after activation of the audible alarm on the surface by the CO monitoring system.



Example of carbon monoxide sensor installation

Arrive Home Alive

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