

(a) Monitoring electrical continuity and detecting electrical malfunctions of the system;

(b) Identifying any activated or malfunction sensor; and

(c) Giving notice of a fire for a minimum of four hours after the source of power to the belt is removed, except when power is removed during a fan stoppage or the belt is examined as provided in section 75.1103–4(e)(1) or (2)."

Monitoring circuit continuity and electrical malfunctions is required under proposed § 75.351(c), minimum operating requirements. This is also the section of the proposed rule addressing identification of any activated or malfunctioning sensor. Belt stoppages are addressed in proposed § 75.351(a). The proposed rule includes all conditions of this item.

Item 3. Minimum Velocity and Location of Sensors

The Advisory Committee recommended:

"In mines using belt air to ventilate working places, the minimum velocity in the belt haulage entry should be at least 50 fpm. An early warning fire detection system (low level carbon monoxide or equivalent) in belt haulage entries should monitor the atmosphere at the following locations:

(a) Belt entries utilized as intake aircourses, at intervals not to exceed 1,000 feet;

(b) At the section tailpiece or not more than 50 feet inby the tailpiece on the same split of air;

(c) One sensor at the drive unit area (belt drive, belt take-up, belt tailpiece or combination thereof) not less than 50 feet and not more than 100 feet inby on the same split of air; and

(d) When belt and track are in separate entries and are not separated by stoppings on section panels, a CO (or equivalent) sensor should be placed at the inby end of the section track."

The proposed rule requirement varies slightly from the Advisory Committee report, which suggested minimum velocities of 50 feet per minute (fpm). Proposed §§ 75.351(e)(1) and (4) contain the requirements for the section tailpiece sensor and at each drive along the belt.

Proposed § 75.351(e)(3) includes the 50 fpm minimum in locations where 1,000-foot sensor spacing is used. However, we have proposed the use of lower air velocities, providing sensor spacing is reduced to 350 feet. These lower air velocities are based on research conducted by the National Institute of Occupational Safety and Health (NIOSH) after the Advisory Committee report was completed.

The Advisory Committee recommended that a sensor be placed at the end of the track when the track and

belt are not separated by stoppings. We believe this requirement does not add a significant level of protection because the sensor at the end of the track would monitor the same air as the sensors in the belt entry. Our in-mine studies indicate that there is air movement between these entries in the air course, making monitors in the belt entry sufficient for early detection of contaminants. Therefore we do not propose placing a sensor at the end of the track. We are proposing the installation of sensors in the intake escapeway, separate from belt.

However, we have included in proposed § 75.351(e)(5) a requirement for other monitoring locations required by the district manager and specified in the mine ventilation plan. This provision would require the placement of a sensor at the end of the track if the district manager determines that it is necessary. The proposed rule includes all other conditions of this item.

MSHA agrees that for mines using sensor spacing of 1,000 feet, the minimum velocity of 50 fpm must be maintained. As the Advisory Committee recognized, the air flow rate is an important variable in fire detection. We have proposed a requirement in § 75.352(e) to address situations where less than 50 fpm is measured in mines with 1,000 foot sensor spacing to assure that the ventilation system is returned to proper operation. In these circumstances, a trained person would patrol and monitor the affected area until the air flow is restored.

Item 4. Section Alarms

The Advisory Committee recommended:

"Section alarms should give a visual and audible warning signal on the affected working section if carbon monoxide (or equivalent) reaches the established levels. The section alarm should be at a location where it can be seen or heard by persons working on the section."

The Advisory Committee stated that section alarms should give a visual and audible signal on the affected working section if CO levels reach 'established levels,' and that section alarms be located where they can be seen or heard. Under proposed § 75.351(c)(4), section alarms would give a visual and audible signal and would need to be located where they can be seen and heard when the CO, smoke, or methane concentration at any sensor reaches the alarm level specified in § 75.351(i).

The proposed rule would not require automatic section alarm activation during alert conditions, but rather only during alarm conditions. MSHA believes the frequency of alert signals

could lead to complacency among miners, and it is preferable for other actions, as noted in proposed § 75.352, to occur at alert levels. Proposed § 75.352(b)(1) would require that the sensor activated be identified and an examination begun immediately to determine the cause of the alert signal. The proposed rule meets the recommendation of alarm location included in this item.

Item 5. Responsible Person at Surface

The Advisory Committee recommended:

"At all times when miners are underground a responsible person(s) should:

(a) Be on duty on the surface, so that the alert/alarm signals can be seen or heard;

(b) Maintain a record of each alert and alarm signal and actions taken;

(c) Have 2-way communication with all working sections. When alert and alarm levels are reached, this person should notify personnel at working sections and other personnel who may be endangered;

(d) Be trained in the operation of the early warning fire detection system and emergency communication system.

(e) Be trained in the proper procedures to follow in the event of an emergency or malfunction; and

(f) Take appropriate action upon alarm activation and verification."

This item contains conditions concerning responses to alert and alarm levels by surface personnel. Proposed § 75.301 defines the responsible person as the AMS operator. The proposed section also requires that the AMS operator be on duty at a location where signals can be seen or heard, and that the operator can respond promptly to the signals. Recordkeeping requirements are included in proposed § 75.351(o), as well as two-way communications in proposed § 75.351(b)(1). Proposed § 75.351(q) requires that all AMS operators receive training in the proper operation of the AMS. The proposed rule meets the recommendation of the Advisory Committee for this item.

Item 6—Actions of Personnel Underground Upon Alert/Alarm Activation and Item 7—Actions of Personnel on the Surface Upon Alert/Alarm Activation

The Advisory Committee recommended in Item 6:

"When the early warning fire detection system reaches the alert/alarm mode, an audible and visual alarm signal should activate on the surface at the mine and at the working section(s). When section alert/alarm signals are activated the following actions should be taken:

(a) Alert—When alert levels are reached, the sensor that is activated is identified and section workers inby are notified of an "alert mode" and are withdrawn to a safe location