

The proposed regulations require the use of an AMS to monitor the belt entry. MSHA participated in a joint program with the former Bureau of Mines and a manufacturer of smoke detectors that tested these instruments in the mine environment. MSHA is encouraging the development of new technology for fire detection and supports further research by NIOSH in this area. Rather than develop approval schedules, we have decided to require sensors to be listed by nationally recognized testing laboratories.

*8. MSHA should consider requiring improvements to or replacement of point-type heat sensors.*

We would require the use of an AMS as a condition to safely use belt air to ventilate the working section. This is a cornerstone of the proposed rule.

Point-type heat sensors (PTHSs) or equivalent are currently required under existing § 75.1103-4(a)(1) as part of the automatic fire sensor and warning device systems. The proposed rule will allow mine operators to use CO sensors in place of PTHSs as an equivalent method.

*9. Where belt air is directed outby from the section, water lines should be relocated from the belt to a separate intake entry to facilitate fire fighting activities.*

Because this is not a belt air issue, we have not included any requirement in this proposed rule.

*10. Further research should be conducted to evaluate the impact of air velocities on underground fire fighting and to provide information on the growth and spread of mine fires involving materials other than conveyor belts.*

Additional research was completed by the former Bureau of Mines and NIOSH in these areas subsequent to the release of the BEVR report. MSHA used much of the published results in developing this proposed rule. Additional research by NIOSH concerning fire detection is ongoing, and the Agency remains in contact with researchers on new and developing technology.

#### **IV. Discussion of the Proposed Rule**

##### *A. General Discussion—30 CFR, Part 75, Subpart D—Ventilation*

Existing § 75.350 (Air courses and belt haulage entries) requires that entries used as intake and return air courses be separated from belt haulage entries and prohibits air coursed through belt entries from ventilating working places. The proposed rule would continue to allow the existing method of ventilation where belt air is coursed to a return air course or to the surface and not onto

either the working sections or equipment setup or removal areas. However, it also would permit, with additional safeguards, the use of belt air to ventilate the working sections and the setup or removal areas.

Past practice has been for a mine operator to file a petition for modification of § 75.350 (or formerly § 75.326) to seek approval to use belt air to ventilate working places in underground coal mines. To date, we have granted approximately 90 such petitions. About nine petitions are being processed as of the date of this notice. Under existing § 75.350 (Air courses and belt haulage entries), mines opened on or before March 30, 1970, may use belt air to ventilate working places when it is determined that this air is needed to provide adequate ventilation. Currently, eight mines developed before 1970 are ventilated in this manner. In each of these cases, we require the mine operator, through the mine ventilation plan, to continue to meet at least the same level of protection provided in petitions that we have granted. Therefore, the mines developed before 1970 will not be exempted from the rule but must meet the new regulations.

Our experience regarding belt air petitions has been that with proper safeguards, allowing belt air to ventilate working places (belt air) can achieve net safety benefits. Belt air usage can result in an increase in the quantity of air in the belt entry and other common entries (belt air course). This provides increased protection to miners against hazards created by elevated levels of methane, other harmful gases, and respirable dust. Significantly, this method of ventilation can help to balance pressures between air courses in the system. Present § 75.350, that is identical to the former § 75.326, requires that the mine operator “limit the velocity of the air coursed through belt haulage entries to the amount necessary to provide an adequate supply of oxygen in such entries and to assure that the air therein shall contain less than 1.0 volume per centum of methane.” In the past, mine operators regulated the air flowing through the belt air course such that most of the air flowing toward the working sections flowed in the intake air course. This action commonly caused pressure differentials to occur between the entries. Balancing the air volume in the primary intake air course with the air volume in the belt air course generally provides less pressure differential between the primary escapeway intake air course and the belt air course. Pressure-balanced ventilation systems reduce the likelihood that air will leak from the belt air course into

adjoining intake air courses, including the primary escapeway. Should a fire develop in the belt entry or other common entries, the products of combustion would tend to stay in the belt air course for a longer duration. This would enhance escape through the primary escapeway by keeping the parallel primary escapeway free of smoke.

We recognize the problems created when the products of combustion from a fire are transported to the working sections. However, we believe, as did the Advisory Committee, that with proper precautions, belt air can be safely used to ventilate working places.

The Advisory Committee recommended that lifelines be installed and maintained in all escapeways. The Advisory Committee heard testimony from several members of the industry to the effect that lifelines are beneficial. However, they also heard that lifelines placed in active entries were quickly destroyed due to normal mining activities and that repair was not considered a priority. Therefore, we have not included a requirement for lifelines in the proposed rule. We specifically solicit comments on the need for and the maintainability of lifelines in escapeways.

The Advisory Committee recognized the importance of protecting the “integrity of the atmosphere” in the primary escapeway. In addressing this issue, the Advisory Committee report states, “The Committee believed that it is desirable, even during normal operation of the mine, to maintain the integrity of the mine atmosphere in the escapeways by providing a positive pressure differential between the escapeways and the adjacent entries.” We agree with the concept that separation of the belt air course from the primary escapeway is essential in providing miners a safe route to the surface. One method to help accomplish this would be to maintain the primary escapeway at a pressure that is higher than the adjacent entries. However, the Advisory Committee recognized that, sometimes, it may be difficult to always maintain the pressure differential in the proper direction. Because of the difficulty of maintaining the primary escapeway at a higher pressure than an adjacent air course, the Agency has decided not to propose this requirement. However, we recommend that MSHA and the mine operator should work together during the mine ventilation plan approval process to address this issue on a mine-by-mine basis.

The Advisory Committee recommended that we proceed to