

plan. Mine operators are encouraged to send information from the AMS to alternate locations, either on or off mine property, so long as the original signal goes to the designated surface location. The AMS operator, designated by the mine operator, must be on duty while anyone else is underground and the monitoring requirements of existing §§ 75.323(d)(1)(ii) (Actions for excessive methane, Return air split alternative), 75.340(a)(1)(ii), or 75.340(a)(2)(ii) (Underground electrical installations), or 75.362(f) (On-shift examination) apply. This proposed requirement also would apply to proposed §§ 75.350(b) or 75.350(c) (Belt air course ventilation). Proposed § 75.351(b)(3) is also consistent with our long held position as reflected in petitions requiring the use of an AMS.

Proposed § 75.351(b)(4) would require that the names of the designated AMS operators; appropriate personnel, such as section foreman, maintenance foreman, mine manager, and safety director; the responsible person referred to in proposed § 75.352, and the method to contact these persons must be provided at the designated surface location. This will provide a means for any person to promptly contact the appropriate personnel in the event of an emergency.

Proposed paragraph (c) would establish minimum operational requirements for an AMS installed in accordance with existing §§ 75.323(d)(1)(ii) (Actions for excessive methane, Return air split alternative), 75.340(a)(1)(ii), or 75.340(a)(2)(ii) (Underground electrical installations), or 75.362(f) (On-shift examination). Proposed paragraph (c) also would apply to proposed §§ 75.350(b) or 75.350(c) (Belt air course ventilation). As recommended by the Advisory Committee, proposed paragraph (c)(1) would require that the AMS monitor and provide a signal at the designated surface location for any interruption of circuit continuity or any electrical malfunction of the system. Proposed paragraph (c)(1) would require the system to identify, at the designated surface location, the operating status of all sensors. As discussed previously, when an AMS is used, it is an integral part of the overall safety program for the mine. It is important that the AMS operator be aware of the status of the system. Without this knowledge, the AMS operator cannot appropriately respond to alert and alarm signals from the system. As such, it is imperative that it is in proper operating condition or that the operator know when it is not operating properly so that remedial measures can be started. By having a

self-monitoring system, this information is more readily available and the operator can notify appropriate personnel.

Proposed paragraph (c)(2) would require that the AMS automatically provide an alert signal at the designated surface location that is distinguishable from an alarm signal, when the CO or methane concentration reaches the established alert level. The proposed rule requires that the AMS operator notify responsible persons. It is essential that this individual is immediately aware of the existence of an alert condition.

MSHA has developed a tiered response approach to address malfunction, alert, and alarm signals in order to require appropriate reaction by the AMS operator and miners. Malfunction and alert signals are addressed in a similar manner in this proposed rule. It is important to determine the cause of either the malfunction or alert signal and to correct it as soon as possible. The AMS operator must be able to tell, by sight or sound, if a signal is the result of a malfunction, alert, or alarm in order to respond correctly to the situation. Signals can be modified by assigning different tones or lights to the different signals so that the AMS operator can easily distinguish them in order to appropriately respond. Alarms on sections must be discernable by sight or sound by the miners so that appropriate actions outlined in the approved program of instruction can be started (§ 75.1502).

MSHA proposes paragraph (c)(3) to require signals that can be seen and heard by the AMS operator at the designated surface location when the CO, smoke, or methane concentration at any sensor reaches the alarm level as activated automatically at the designated surface location. This is consistent with the recommendation of the Advisory Committee. This proposed provision would require giving a visual and audible signal for any alarm condition, including CO, smoke, and methane. It also would trigger initiation of the actions specified in §§ 75.352(a)(2) and 75.352(a)(3).

By requiring notification at the surface location and underground, the proposed rule provides a degree of redundancy that will increase the likelihood of notification and speed up response to the alarm. MSHA has included this requirement in recent approved belt air petitions for modification and it has been successful in increasing the response to alarm signals.

In addition, proposed paragraph (c)(4) would require that the alarms be given at all affected working sections and areas where miners can see and hear the signals. The intent of this requirement is to assure that the AMS provides the required signals notifying miners of hazards. The Advisory Committee heard considerable testimony about problems associated with notifying persons on affected working sections during the Marianna mine fire. Consequently, the Advisory Committee recommended, and this proposed rule would require in paragraph (c)(4), that alarms be given at locations where they can be seen and heard by affected miners.

Proposed paragraph (c)(4) would also require that when methane alerts (1.0 %) and alarms (1.5 %) are used that these signals be distinguishable from all other alert and alarm signals. Because elevated levels of methane may pose a significant explosion hazard, it is essential that miners are immediately aware that the alarm being given is the result of an elevated methane concentration.

Proposed paragraph (c)(5) would require that the AMS automatically provide an alarm signal that can be seen and heard by miners in other locations, such as underground shops and track maintenance locations, as specified in the approved program of instruction (§ 75.1502). Proposed paragraph (c)(6) would require that the AMS identify the operational status of all sensors at the designated surface location.

Proposed paragraph (d) would specify the location and installation requirements for AMS sensors. Proposed paragraph (d)(1) would require that AMS sensors be in the airstream they are intended to monitor to assure measurements are representative of the entry atmosphere. This provision ensures the positioning of sensors to detect a hazardous condition should it develop. For example, where an electrical installation is monitored to comply with §§ 75.340(a)(1)(ii) or 75.340(a)(2)(ii), the sensor should be positioned downwind in the airstream used to ventilate that installation. This is to provide the maximum potential for fire detection, since the products of combustion are going to follow the air current.

Proposed § 75.351(d)(2) would require installation of CO or smoke sensors near the center of the entry as near the roof as feasible in a location that would not expose personnel working on the system to unsafe conditions. This requirement is necessary to make certain that sensors are placed away from machinery, such as the conveyor belt itself, that could be a hazard to miners working on the AMS.