

with a known concentration of carbon monoxide in air sufficient to activate the alarm;

(ii) Each smoke sensor installed in accordance with §§ 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), or 75.350(c) must be functionally tested in accordance with the manufacturer's calibration specifications;

(iii) Each methane sensor installed in accordance with §§ 75.323(d)(1)(ii) or 75.362(f) must be calibrated in accordance with the manufacturer's calibration specifications. Calibration must be done with a known concentration of methane in air sufficient to activate an alarm.

(4) Gases used for the testing and calibration of AMS sensors must be traceable to the National Institute of Standards and Technology reference standard for the specific gas. When these reference standards are not available for a specific gas, calibration gases must be traceable to an analytical standard which is prepared using a method traceable to the National Institute of Standards and Technology. Calibration gases must be within ± 2.0 percent of the indicated gas concentration.

(o) *Recordkeeping.* (1) When an AMS is used to comply with §§ 75.323(d)(1)(ii), 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), 75.350(c), or 75.362(f), responsible persons designated by the operator must make the following records by the end of the shift in which the following event(s) occur:

(i) If an alert or alarm signal occurs, a record of the date, time, location and type of sensor, and the cause for the activation.

(ii) If an AMS malfunctions, a record of the date, the extent and cause of the malfunction, and the corrective action taken to return the system to proper operation.

(iii) A record of the seven-day test of alert and alarm signals, calibrations, and maintenance performed on the system must be made by the person(s) performing the test, calibration, or maintenance.

(2) The person entering the record must include their name, title, date, and signature in the record.

(3) The records required by this section must be kept in a secure book that is not susceptible to alteration, or must be kept electronically in a computer system that is secure and not susceptible to alteration. These records must be maintained separately from other records and identifiable by a title, such as the "AMS log."

(p) *Retention period.* Records must be retained for at least one year at a surface

location at the mine and made available for inspection by miners and authorized representatives of the Secretary.

(q) *Training.* All AMS operators must be trained annually in the proper operation of the AMS. A record of the content of training, the person conducting the training, and the date the training was conducted, must be maintained at the mine for at least one year by the mine operator.

(r) *Communications.* When an AMS is used to comply with § 75.350(b), a two-way voice communication system, as required by paragraph (b)(1) of this section, must be installed in a different entry that is separate from the AMS.

5. Revise § 75.352 to read as follows:

§ 75.352 Actions in response to AMS malfunction, alert, or alarm signals.

(a) The designated AMS operator or other designated responsible person must promptly initiate the following actions:

(1) When a malfunction or alert signal is given, notify appropriate personnel, immediately begin an examination to determine the cause, and take required action to address it, and

(2) When an alarm is given, notify appropriate personnel, including miners in affected working sections, in areas where mechanized mining equipment is being installed or removed, and in other locations specified in the approved program of instruction as set forth in § 75.1502.

(b) If contaminant concentration levels for any carbon monoxide, smoke, or equivalent sensor installed in accordance with §§ 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), or 75.350(c) exceed the specified alert or alarm level, the following procedures must be followed unless the cause of the alert or alarm signal is known not to be a hazard to the miners:

(1) When an alert signal is given, the sensor activated must be identified and an examination must begin immediately to determine the cause of the alert signal.

(2) When an alarm is given, the sensor that is activated must be identified, and the fire fighting and evacuation procedures initiated as required by the approved program of instruction (§ 75.1502). At a minimum, all personnel in the affected area, unless assigned other duties in the approved program of instruction (§ 75.1502), must be promptly evacuated outby the next functioning sensor upwind of the alarming sensor.

(c) If an alert or alarm signal from a methane sensor in a return air split is activated, the sensor producing the alert or alarm signal must be identified, an

examination must be made to determine the cause of the activation, and the actions required under § 75.323 must be taken.

(d) If any fire detection components of the AMS malfunction or are inoperative, immediate action must be taken to return the system to proper operation. During the time that AMS component repairs are being made, operation of the belt may continue if the following conditions are met:

(1) If one AMS sensor becomes inoperative, a trained person must continuously monitor for carbon monoxide or smoke at the inoperative sensor.

(2) If two or more adjacent AMS sensors become inoperative, a trained person(s) must patrol and continuously monitor for carbon monoxide or smoke in the affected area so that the affected area will be traveled each hour, or a trained person must be stationed to monitor at each inoperative sensor.

(3) If the complete system becomes inoperative, trained persons must patrol and continuously monitor for carbon monoxide or smoke so that the affected belt entries are traveled each hour in their entirety.

(4) The trained person(s) monitoring under this section must, as a minimum, have two-way voice communication capabilities with the AMS operator at intervals not to exceed 2,000 feet.

(5) The trained persons monitoring under this section must report the concentrations detected at the affected AMS sensor(s) at intervals not to exceed one hour. In addition, the trained person must report as soon as possible to the AMS operator any concentration of the contaminant that reaches either the alert or alarm level specified in § 75.351(i), or the alternate alert and alarm level specified in paragraph (d)(7) of this section, unless the source of the contaminant is known not to represent a hazard.

(6) Instruments used to monitor under this section must have a level of detectability equal to that required of the sensors in § 75.351(l).

(7) For those AMSs using sensors other than carbon monoxide sensors, an alternate detector and the alert and alarm levels associated with that detector must be specified and approved in the ventilation plan.

(e) If the 50-foot per minute minimum air velocity is not maintained when required in § 75.351(e)(3), immediate action must be taken to return the ventilation system to proper operation. Trained persons must patrol and continuously monitor for carbon monoxide or smoke as set forth in paragraphs (d)(1) through (7) of this