

June 13, 2006

In the matter of:  
Warrior Coal, LLC  
Cardinal Mine  
I.D. No. 15-17216

Petition for Modification

Docket No. M-2005-023-C

PROPOSED DECISION AND ORDER

On March 29, 2005, a petition was filed seeking to amend the previously issued Decision and Order granting a modification (M-2004-034-C) of the application of 30 CFR 75.1103-4(a) to Petitioner's Cardinal Mine, located near Madisonville, Hopkins County, Kentucky. The terms and conditions of the granted petition allow for the use of a carbon monoxide monitoring system (CO system) that identifies the location of sensors in lieu of identifying belt flights. The Petitioner seeks an amendment to the previously granted petition alleging that its application to the Cardinal Mine will result in diminution of safety to the miners, and further proposes an alternative method of achieving the result of the standard that will at all times guarantee no less than the same measure of protection afforded by the previously granted petition.

Section 75.1103-4(a) requires the installation of automatic fire sensor and warning device systems to provide identification of fire within each belt flight (each belt unit operated by a belt drive). When more than one type of system is installed in a belt entry, MSHA requires that both systems meet the installation and maintenance requirements of 30 CFR 75.1103-4 through 77.1103-7 and be fully operative at all times. The secondary system, however, is not required to be a complete system.

On April 25, 2005, the United Mine Workers of America (UMWA) submitted comments addressing the proposed amendment. The United Mine Workers of America's concerns are addressed in this proposed decision and order.

MSHA personnel conducted an investigation of the petition and filed a report of their findings with the Administrator for Coal Mine Safety and Health. After a careful review of the entire record, including the petition and MSHA's investigative report, this Proposed Decision and Order is issued.

**Summary of Petitioner's Request to Amend Previously Granted  
Petition for Modification of 30 CFR 75.1103-4(a)**

The Cardinal Mine is currently opened by two airshafts, one slope, and four drift openings into the Kentucky Nos. 9 and 11 coal seams. The mine employs approximately 243 miners, 227 of these employed underground. Currently, the mine produces about 19,000 tons of coal per day from six working sections. Coal is mined from the face onto shuttle cars, dumped onto conveyor belts, and transported to the surface. The Cardinal Mine uses belt air to ventilate the working faces of the mine under a petition for modification (M-2001-124-C) previously granted. A fan operating in the exhaust mode moves approximately 500,000 cubic feet of air a minute through the mine. The mine liberates approximately 800,000 cubic feet of methane every 24 hours.

The primary fire detection system at the Cardinal Mine is a heat-point sensor system. The petitioner, however, has been using the carbon monoxide monitoring system (CO system) for about two years as a secondary means of fire detection. Under a granted petition for modification of § 75.1103-4(a), M-2004-034-C, the petitioner has been using the CO system to identify the location of sensors in lieu of belt flights conditioned upon compliance with certain terms and conditions outlined in the granted petition. One of the terms and conditions of this granted petition, Item 2.a., states:

The carbon monoxide monitoring system shall be capable of providing both visual and audible signals. A visual or audible alert signal shall be activated when the carbon monoxide level at any sensor reaches 5 parts per million (ppm) above the ambient level for the mine. An audible and visual alarm signal distinguishable from the alert signal shall be activated when the carbon monoxide level at any sensor reaches 10 ppm above the ambient level for the mine. The District Manager is authorized to require lower alert and alarm levels.

As an alternative method, Petitioner proposes to amend the granted petition, M-2004-034-C, to increase the alert and alarm levels from the current 5 and 10 parts per million (ppm) to 10 and 15 ppm respectively. Petitioner alleges that in an attempt to bring the CO system on-line, the Cardinal Mine has experienced numerous "false alarms" at the current alarm and alert levels, partly triggered by diesel equipment exhaust. In support of its petition, the petitioner documents in its amendment 622 alerts

and/or alarms during a five-day period with 588, or 95 percent, resulting from CO levels of less than 7 ppm. The petitioner alleges that application of the alert and alarm levels set forth in the granted petition will result in a diminution of safety to miners because of miners' complacency toward alarms generated by the CO system. The Petitioner alleges that the alternative method will reduce the number of false alarms substantially, thereby increasing miner safety. The Petitioner further alleges that its alternative method will provide a measure of protection equal to or greater than that of the standard.

### **MSHA's Investigation Report**

MSHA's investigation reports dated April 22, 2005 and March 6, 2006, revealed that there are a number of alternatives to raising the alert and alarm levels from the current levels of 5 and 10 parts per million (ppm) to 10 and 15 ppm respectively. MSHA determined that the mine operator could implement any of the following to reduce the number of false alarms generated by the CO system: the use of diesel-discriminating CO sensors; the use of administrative controls to minimize the amount of diesel equipment traveling in the belt or adjacent entries; adjustments to the mine ventilation system to improve the dilution of diesel exhaust in the belt and adjacent entries; the use of time delays and adjustments to the ambient levels of CO present in the subject areas; proper maintenance on diesel engines to further reduce CO emissions at the mine. The investigation report noted that the mine operator had not implemented any of the above alternatives to reduce or eliminate false alarms generated by the CO system. In light of the above, the MSHA's investigation report concluded that petitioner's alternative method would not at all times guarantee the same measure of protection as afforded miners by the current modification in that it would unnecessarily delay the miners' evacuation, increasing their exposure to hazards.

The UMWA objects to petitioner's request to raise the alert and alarm levels stating that the request would result in a diminution of safety to miners at the operation. The Union stipulates that raising the alert and alarm levels would allow a hot spot or fire in the underground workings to go undetected for a greater period of time than is now possible under the previously granted petition. The Union states that this additional time is unacceptable because it could allow the hazard to increase to a level that threatens the lives of miners working near or in by the affected area. Furthermore, the Union states that the petitioner has several plausible solutions available that would resolve the false alarm problem without raising the alert and alarm levels of the CO system. The Union indicates

that the mine operator could eliminate or phase out of diesel equipment; review and improve the diesel maintenance program to reduce emissions being released into the mine atmosphere by this equipment; install diesel discriminating sensors for the CO monitoring system; or a combination of the recommendations listed above.

### Legal Framework for a Petition for Modification

Section 101(c) of the Federal Mine Safety and Health Act of 1977 (Mine Act), provides MSHA with two alternate means to grant a petition for modification of a safety standard:

Upon petition by the operator or the representative of miners, the Secretary may modify the application of any mandatory safety standard to a coal or other mine if the Secretary determines [1] that an alternative method of achieving the result of such standard exists which will at all times guarantee no less than the same measure of protection afforded the miners by such standard, or [2] that the application of such standard to such mine will result in a diminution of safety to the miners in such mine.

In order for MSHA to grant the petition under the alternative method theory, MSHA must perform a two-step analysis:

The first step . . . requires [MSHA] to find that the proposed alternative method will promote the same safety goals as the original standard with no less than the same degree of success. The second step . . . contemplates a more global inquiry into the net safety effect of the modification.

United Mine Workers of America, International Union v. Mine Safety and Health Administration, United States Dep't of Labor, 928 F.2d 1200, 1202 (1991).

With respect to the diminution of safety theory, the standard requires "[MSHA] to ask only whether application of a particular mandatory safety regulation would be unsafe, [and MSHA] need not balance the efficacy of the existing rule against the net benefits produced by the proposed modification." International Union, United Mine Workers of America v. Federal Mine Safety and Health Administration, 924 F.2d 340, 343 (1991).

### Findings of Fact and Conclusions of Law

The primary safety goal of § 75.1103-4 is the early detection of a fire or explosive condition to protect miners. Early detection

of a fire or explosive condition facilitates rapid evacuation of miners, thereby, promoting miner safety. Atmospheric monitoring systems (AMS) such as CO systems provide for early-warning fire detection along the belt air course using sensors that detect low levels of CO or smoke. Signals from these sensors are transmitted to a designated surface location at the mine. Then, the AMS operator can notify appropriate personnel so that they can take required actions, depending on the type of signal received. These actions could range from an investigation of a malfunctioning sensor to evacuation of affected miners to a safe location in the mine.

Years of research into early-warning fire detection by MSHA and NIOSH have provided documentation supporting the use of 5 ppm above ambient alert level and 10 ppm above ambient alarm level as the maximum values for CO levels in the belt entry in order to provide early warning of fire. NIOSH RI 9380 supports the use of 5 ppm and 10 ppm above ambient as alert and alarm levels.

#### Alternative Method

The Petitioner's proposed alternative method contained in this amendment does not provide the same measure of protection as the modification currently in effect because raising the alert and alarm levels would further delay the detection of a fire at the mine. This delay in detection would compromise miner safety by delaying their evacuation from the mine, increasing miners' exposure to hazards.

Additionally, the risk of a fire originating from diesel equipment is greater at petitioner's mine than at other mines because of the quantity of diesel equipment in use at the mine. Numerous fires have originated on diesel equipment and therefore, early detection is of utmost importance in providing for a timely evacuation of miners. As explained above, an increase of 5 ppm in both the alert and alarm level would allow a hot spot or fire in the underground workings of petitioner's mine to go undetected for a greater period of time than is now possible under the terms and conditions of the previously granted petition. The additional time could compromise the safety of miners significantly by further delaying their evacuation from the mine.

MSHA believes that there are alternatives to raising the actuation levels of the CO system that would effectively reduce diesel emissions and would eliminate the number of false alarms without compromising miner safety. Consequently, MSHA finds that the proposed amendment will not promote the same safety goals as the original standard with no less than the same degree of success.

From a more global inquiry, the net effects of the proposed amendment would reduce safety. In the event of a fire, petitioner's proposed amendment would result in a delay in miner evacuation. This delay would expose miners to additional hazards such as burns and air contamination. Thus, such scenario would not promote the same safety goals as the current modification. Consequently, on the basis of the petition and the findings of MSHA's investigation, Warrior Coal, LLC is not granted an amendment of the current modification of the application of 30 CFR 75.1103-4(a) at its Cardinal Mine.

#### Diminution of Safety

With respect to the diminution of safety analysis, MSHA must "ask only whether the application of a particular mandatory safety regulation would be unsafe." International Union, United Mine Workers of America v. Federal Mine Safety and Health Administration, 924 F.2d at 343. In this case, the issue is whether the application of the granted alarm and alert levels at the Cardinal Mine would be unsafe due to miner complacency to alarms generated by the CO system. In analyzing this issue, a review of the preamble to the final belt air rule (69 FR 17480, April 2, 2004) is helpful because it discusses the automatic fire sensor requirement of § 75.1103-4(a), the effect of diesel equipment emissions on CO systems, and alternatives available to mine operators to reduce false alarms.

One commenter suggested that alert and alarm levels be established on a mine-by-mine basis due to various complicating factors, such as "volume of diesel equipment that is used in mines, placement of sensors, the velocities of air and different things of that nature that should be taken into consideration when the levels of alert and alarm are to be established." MSHA agrees that some factors may require reducing alert and alarm levels below 5 and 10 ppm above ambient, respectively. The 5 and 10 ppm levels above ambient are considered to be maximum levels and cannot be increased to account for the use of diesel-powered equipment. 69 FR 17508. Emphasis added.

The operation of diesel-powered equipment in the belt air course or in adjacent air courses is a concern in mines using CO-based fire detection systems. Possibly, movement of the equipment in these air courses can cause alert or alarm activations at individual sensors as the equipment

passes nearby. If there are cases where engines cause numerous alert and alarm signals due to the machine exhaust containing high levels of CO, we believe that the mine operator can perform maintenance on the diesel engines which is likely to be effective in reducing these levels. Proper maintenance of diesel-powered equipment is an important aspect of controlling diesel engine emissions as required by § 75.1914—Maintenance of diesel-powered equipment. Additionally, the use of diesel discriminating sensors (DDS) has been shown to be effective in mines using diesel-powered equipment for reducing the frequency of alert signals. The DDS, as well as the hydrogen-insensitive and smoke sensor technologies, can be employed to reduce or eliminate required evacuations for alert signals. 69 FR 17504.

The results of years of research by NIOSH have provided sufficient documentation supporting the use of 5 and 10 ppm above ambient maximum alert and alarm levels for CO in the belt entry (RI 9380). 69 FR 17508. Elevated alert and alarm levels reduce the detectability of the AMS. Some commenters suggested higher alert and alarm levels; however, we do not believe that they provide the protection that is necessary to protect miners by giving them early warning in the case of a fire. Higher alert and alarm levels would delay the early-warning fire detection response by appropriate personnel because higher concentrations of the products of combustion would be required to trigger alert and alarm signals. 69 FR 17509.

The quoted preamble recognizes that the current alert and alarm levels of 5 and 10 ppm for CO are the maximum safest levels shown by research to promote miner safety. The preamble also specifically notes that an increase on the alert and alarm levels cannot be premised on the use of diesel equipment when such action would compromise miner safety and other means are available to eliminate the occurrence of false alarms.

While the petitioner emphasizes in the amendment the quantity of diesel equipment used at the Cardinal Mine and documents the number of false alarms generated by the CO system, MSHA's focus in deciding whether to grant Petitioner's request involves an examination of the mining conditions at the Cardinal Mine and a determination that application of the current alert and alarm levels would diminish the safety of the miners.

According to the petitioner, the Cardinal Mine currently utilizes approximately 40 pieces of diesel equipment under normal mining conditions. The diesel equipment is used for personnel and supply transportation, road maintenance, and rock dusting. At the time the previous petition was granted in 2004, the mine was utilizing 38 pieces of diesel equipment under similar mining conditions.

Petitioner alleges that application of the granted alert and alarm levels would result in a diminution of safety to miners. Petitioner argues that raising both the alert and alarm levels of the CO system is necessary for miner safety to avoid workforce complacency toward false alarms generated by diesel emissions. MSHA finds petitioner's diminution of safety claim without basis for two reasons. First, the slight increase in the number of diesel powered equipment does not justify raising the actuation levels of the CO system to reduce false alarms. It may only mean that additional measures must be implemented by petitioner to reduce diesel emissions at the mine, and consequently the number of false alarms generated by the CO system. Second, the Petitioner fails to introduce any evidence showing the application of technological and/or administrative controls at the mine to reduce diesel emissions and thereby, the number of false alarms. By failing to do so, petitioner portrays the proposed increased in the alert and alarm levels as the only available means to reduce false alarms. However, as explained above, there are a number of alternatives available to petitioner that would reduce or eliminate false alarms activated by diesel emissions that do not compromise miner safety. Any of these alternatives or a combination of such would reduce or eliminate the high number of false alarms experienced by petitioner at the current alert and alarm levels; and would prevent miner complacency toward alarms while promoting the safety goals of the standard. By contrast, raising the alert and alarm levels, as proposed by petitioner, would not promote the safety goals of the standard because it would unnecessarily delay the early detection of fire and the evacuation of mine personnel.

Since Petitioner has not presented any evidence to suggest that application of the current alert and alarm levels of the CO system at the Cardinal Mine would result in a diminution of safety to miners, MSHA denies Petitioner's request to amend its previously granted modification of 30 CFR § 75.1103-4(a).

**ORDER**

Wherefore, pursuant to the authority delegated by the Secretary of Labor to the Administrator for Coal Mine Safety and Health, and pursuant to Section 101(c) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C., Sec. 811(c), it is ordered that Warrior Coal, LLC's Petition for Modification to amend its previously granted modification (M-2004-034-C) of the application of 30 CFR 75.1103-4(a) to its Cardinal Mine is hereby:

DENIED

Any party to this action desiring a hearing on this matter must file in accordance with 30 CFR 44.14, within 30 days. The request for hearing must be filed with the Administrator for Coal Mine Safety and Health, 1100 Wilson Boulevard, Arlington, Virginia 22209-3939.

If a hearing is requested, the request shall contain a concise summary of position on the issues of fact or law desired to be raised by the party requesting the hearing, including specific objections to the proposed decision. A party other than Petitioner who has requested a hearing shall also comment upon all issues of fact or law presented in the petition, and any party to this action requesting a hearing may indicate a desired hearing site. If no request for a hearing is filed within 30 days after service thereof, the Decision and Order will become final and must be posted by the operator on the mine bulletin board at the mine.

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John F. Langton  
Deputy Administrator for  
Coal Mine Safety and Health