



RAG American Coal Holding, Inc.

November 25, 2002



Marvin W. Nichols, Jr.  
Office of Standards, Regulations, and Variances,  
Mine Safety and Health Administration  
Room 2313  
1100 Wilson Blvd.  
Arlington, Virginia 22209-3939

**Re: Comments on Proposed Rule  
Improving and Eliminating Regulations, Phase 5, Miscellaneous  
Technology Improvements (Methane Testing)**

Dear Mr. Nichols:

RAG American Coal Holding, Inc. (RACH) submits the following comments on the Proposed Rule on Methane Testing under 30 CFR, Part 75.362(d)(3) published in the September 28, 2002 Federal Register.

RACH's affiliates produce approximately 65 million tons of bituminous coal each year by both underground and surface methods. We operate large underground mines that utilize longwall equipment in Pennsylvania and Colorado and smaller underground mines that rely on continuous miners in West Virginia and Illinois, as well as large surface mines in the Powder River Basin and small surface mines in West Virginia.

In general, we support the proposed changes although we believe some modifications to the proposed rule are appropriate and necessary. RACH fully supports changes to regulations that use available technology to improve the safety of miners, as the proposed rule does. We also applaud the flexibility in the proposed rule to conduct examinations by the current methods or by the methods outlined in the proposed rule. This type of flexibility needs to be built into future regulations.

RACH believes the proposed regulation will improve the safety of roofbolter operators through continuous monitoring of methane in by the roofbolter operator's work location and in the location where a greater potential for ignition exists. We believe, however, the proposed rule should be modified to reduce exposure to miners conducting examinations with probes. Specifically, the sweep with the probe should be shortened and the amount of testing with a probe should be reduced and replaced by testing with a handheld detector at each new row of bolts.

The proposed rule reads as follows:

(3) As an alternative method of compliance with paragraph (d)(2) of this section during roofbolting, methane

tests may be made by sweeping an area not less than 16 feet in by the last area of permanently supported roof, using a probe or other acceptable means. This method of testing is conditioned on meeting the following requirements:

(i) The roofbolting machine must be equipped with an integral automated temporary roof support (ATRS) system that meets the requirements of § 75.209.

(ii) The roofbolting machine must have a permanently mounted, MSHA-approved methane monitor which meets the maintenance and calibration requirements of § 75.342(a)(4), the warning signal requirements of § 75.342(b), and the automatic deenergization requirements of § 75.342(c).

(iii) The methane monitor sensor must be mounted on the in by end and within 18 inches of the longitudinal center of the ATRS, and positioned at least 12 inches from the roof when the ATRS is fully deployed.

(iv) The manual methane test must be made immediately before the roofbolting machine enters the working place unless the last test was made within 20 minutes. During roofbolting, methane tests are also required at intervals not exceeding 20 minutes. The test may be made either from under the last permanent roof support or from the roofbolter's work position protected by the deployed ATRS.

(v) Once a methane test is made at the face, all subsequent methane tests in the same area of unsupported roof must also be made at the face, from under permanent roof support, using extendable probes or other acceptable means at intervals not exceeding 20 minutes.

(vi) The district manager may require that the ventilation plan include the minimum air quantity and the position and placement of ventilation controls to be maintained during roofbolting.

We would propose that it read as follows:

(3) As an alternative method of compliance with paragraph (d)(2) of this section prior to taking a roofbolter into a working place and prior to energizing the roofbolter, methane tests may be made by sweeping an area not less than 10 feet in by the last area of permanently supported roof, using a probe or other acceptable means. During roofbolting operations, methane tests may be made with an approved detector prior to the start of installation of each row of bolts in the area where the row of bolts will be installed. The methane tests shall not exceed intervals of 20 minutes. These methods of testing are conditioned on meeting the following requirements:

(i) The roofbolting machine must be equipped with an integral automated temporary roof support (ATRS) system that meets the requirements of § 75.209.

(ii) The roofbolting machine must have a permanently mounted, MSHA-approved methane monitor which meets the maintenance and calibration requirements of § 75.342(a)(4), the warning signal requirements of § 75.342(b), and the automatic deenergization requirements of § 75.342(c).

(iii) The methane monitor sensor must be mounted on the inby end and within 18 inches of the longitudinal center of the ATRS, and positioned at least 12 inches from the roof when the ATRS is fully deployed.

(iv) The manual methane test must be made immediately before the roofbolting machine enters the working place unless the last test was made within 20 minutes.

(v) The district manager may require that the ventilation plan include the minimum air quantity and the position and placement of ventilation controls to be maintained during roofbolting.

(vi) The handheld methane test conducted prior to the installation of each row of bolts shall be performed no less than 6 inches and no more than 12 inches from the roof

The basis for these suggested changes is described below.

**i. Depth of the Sweep with a Probe.**

The proposed regulation states "methane tests may be made by sweeping an area not less than 16 feet in by the last area of permanently supported roof using a probe or other acceptable means". RACH would request the regulation be changed to limit the required sweep to 10 feet and to limit the use of probes to prior to taking the bolter into the place and prior to energizing it.

Our practical experience with extendible probes indicates that extendible probes are unwieldy and awkward to use and that the depth of the sweeps with the probe should be limited so that quality gas checks are made in the area where the potential hazard exists. The preamble to the existing rule stated that "in mining sections with deep cuts, the large probe arrangements can telescope 40 feet or more." Our experience has been that even in higher seams the usefulness of probes becomes problematic after extending them even 20 feet.

To test 16 feet beyond supported roof requires at least a 20 foot probe. A twenty foot probe is difficult to maneuver, especially in thinner coal seams and the methane detector is difficult to read at greater distances. We know of only one detector that is designed to be read at distances. The awkwardness of using this length of probe or even a longer one in case of 40 foot cuts tends to discourage its use. The full extension of a 20 foot probe could also be difficult in the congested drill head area of a roofbolting machine, thereby discouraging the use of the probe. RACH is of the firm belief that safety is more readily accomplished if the means of accomplishing it are easily performed. Probes do not lend themselves readily to easy testing for methane. This is confirmed by the NIOSH study referenced in the Federal Register Notice: "None of the techniques currently available for making methane measurements during bolting are easy to use or have been widely accepted."

There are additional safety reasons for limiting the frequency and sweep of tests with the probe. In order to take a test 16 feet beyond the last row of bolts, the miners conducting the methane checks will have to spend an extended period of time at the last row of bolts to make a sweep with the probe, especially in thinner coal seams. They will also have to concentrate on maneuvering the probe and reading the meter at the end of the probe so they will not be necessarily watching the top where they are standing. This is especially true where "H" bar ATRS systems are used. To probe 16

feet and maneuver around the ATRS leg is difficult and impractical. This increases the likelihood of inadvertent excursions under unsupported roof. This can be contrasted with a preshift exam where the examiner stands at arms length from the last row of bolts to take the methane test and can readily observe the top in the area when he is making the handheld gas checks,

RACH's approach is consistent with the fact that some roof control plans prohibit the miners from working inby the second row of bolts outby unsupported top. Even when it is not a requirement of the roof control plan, RACH encourages miners to spend as little time as possible in areas within the last two rows of bolts.

When using a probe and promoting safe work procedures a sweep of 10 feet is practical. The miner will need to hold onto three to four feet of the probe and can have an additional five feet of probe available to stay outby the second row of bolts. With a 20 foot probe, this would safely allow for a 10 foot sweep inby the last row of bolts at a location that is several feet beyond the farthest point of advance of the roofbolter when it is tramming to install the next row of bolts. Telescoping probes are made so they can be shortened at the operator's station to sweep 10 feet.

The 10 foot sweep distance also assures that the area where the ATRS and bolter are going to be operated is free of excess amounts of methane. Testing at a distance of 10 feet inby the last area of permanently supported roof and the machine mounted continuous methane monitor would provide adequate assurance that methane is not present or accumulating around the roofbolting machine at the time the roofbolter is drilling. The reports which are referenced in the Federal Register notice, "Comparison of Methane Concentrations at a Simulated Coal Face During Bolting" and "Methane Ignitions on Roofbolters in Underground Coal Mines" make it clear that the primary focus of methane tests with respect to roofbolting should be directed to the area in and around the roofbolters because that is an area of potential methane liberation and the area of the potential source of ignition.

## **II. Location and Timing of Methane Tests**

We also suggest that a test with a handheld detector, rather than a probe, be done prior to each time a new row of bolts is installed, but no less frequently than every 20 minutes. The test should be done in the area where the bolts are going to be installed. We think by tying the test to an event rather than a lapse of time, it is more likely to be performed routinely, as simply another step in the process as opposed to an action that must be interjected at set intervals, interrupting the activities of the miners. Also that requirement would put the test at a location where methane is most likely to be present in conjunction with a source of ignition.

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We concur with the approach that the "sweep" be used to test for methane before equipment is energized or brought into the working place. We think that sort of sweep identifies whether methane is present where the equipment will be operated, not a distance that might be 40 feet away. However, we believe that the tests during bolting should be at the new row of bolts being installed. This is consistent with the evidence from the reports referenced in the Federal Register

Further, we suggest that the test be done between 6 and 12 inches from the roof. It is clear from the research papers that the area where a potential hazard is most likely to exist is close to the roof. The existing rules indicate that the test be at least 12 inches from the roof. See 30 C.F.R. § 75.323(a). It seems to us that, given that the potential area of concern is actually closer to the roof, it is advisable to depart from the traditional concept of a 12 inch minimum distance in order to achieve a higher level of safety. The primary ignition source is the bolting process itself and the majority of these events ignited a thin layer of methane near (or in) the bolt hole. This is a different concern than that presented during the actual mining of the coal.

We believe that testing using the 'sweep' method 10 feet into the cut to be bolted alerts the bolter to methane generation in the working place and the need to adjust ventilation. Once in the cut the need for testing, as noted in the research papers, is more properly focused immediately at or near the roofbolter station close to the roof. Requiring two types of tests- one an initial sweep for general methane control and one near the roof at the bolting site-provides the most effective method of preventing ignition hazards.

## **Conclusion**

RACH requests the above changes to the regulations to improve miner's safety through the use of technology. We appreciate the opportunity to comment on the proposed rule.

Very truly yours,



Chuck Burggraf  
Director Safety