

**U.S. Department of Labor**

Office of Administrative Law Judges  
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**Issue Date: 03 April 2014**

In the Matters of: )  
)  
**CANYON FUEL COMPANY, LLC.,** ) OALJ Docket No. 2011 MSA 00015  
Petitioner, ) OALJ Docket No. 2011 MSA 00018  
) OALJ Docket No. 2011 MSA 00007  
)  
) MINE: Sufeo  
)  
)  
**MOUNTAIN COAL COMPANY, LLC.,** ) OALJ Docket No. 2011 MSA 00016  
Petitioner, ) OALJ Docket No. 2011 MSA 00019  
) OALJ Docket No. 2011 MSA 00006  
)  
) MINE: West Elk Mine  
)  
)  
**CANYON FUEL COMPANY, LLC.,** ) OALJ Docket No. 2011 MSA 00014  
Petitioner, ) OALJ Docket No. 2011 MSA 00020  
) OALJ Docket No. 2011 MSA 00009  
)  
) MINE: Dugout Canyon Mine  
)  
)  
**CANYON FUEL COMPANY, LLC.,** ) OALJ Docket No. 2011 MSA 00017  
Petitioner, ) OALJ Docket No. 2011 MSA 00021  
) OALJ Docket No. 2011 MSA 00008  
)  
) MINE: Skyline Mine #3  
)  
v. )  
)  
**MINE SAFETY & HEALTH** )  
**ADMINISTRATION (MSHA),** )  
Party Opposing Petition, )

and

**BOWIE RESOURCES, LLC,** ) OALJ Docket No. 2013 MSA 00012  
 Petitioner, )  
 ) MINE: Bowie No. 2  
 v. )  
 )  
**MINE SAFETY & HEALTH** )  
**ADMINISTRATION (MSHA),** )  
 Party Opposing Petition, )

and

**PEABODY SAGE CREEK MINE, LLC,** ) OALJ Docket No: 2013-MSA-00024  
 Petitioner, ) OALJ Docket No: 2013-MSA-00025  
 ) OALJ Docket No: 2013-MSA-00037  
 )  
 ) MINE: Peabody Sage Creek  
 v. )  
**MINE SAFETY & HEALTH** )  
**ADMINISTRATION (MSHA),** )  
 Party Opposing Petition. )

**DECISION AND ORDER<sup>1</sup>**

This proceeding arises from petitions to modify a mandatory safety standard pursuant to Section 101(c) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 811(c).<sup>2</sup> The

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<sup>1</sup> On March 26, 2014, I received a letter from Counsel for Canyon Fuel and Mountain Coal indicating that two other mine operators, Peabody Sage Creek Mining and Bowie Resources, LLC, each of whom has a Petition for Modification addressing non-permissible electronic surveying equipment pending before me, were willing to be governed by my decision in this case. During conferences discussing this case, MSHA agreed to this consolidation. I have reviewed the files submitted in those cases and find it appropriate to apply my findings to those parties. Therefore, without additional hearing or evidence, this decision will apply to the Peabody Sage Creek Mining and Bowie Resources, LLC cases identified in the caption.

<sup>2</sup> The Act states:

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 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 of such mine by such standard, or that the application of such standard to such mine will result in a diminution of safety to the miners in such mine.

30 U.S.C. § 811(c)

statute and implementing regulations found at 30 C.F.R. Part 44 allow a mine operator or representative of miners to modify the application of any mandatory safety standard if the Secretary of Labor determines either that an alternative method will guarantee the same measure of protection as the standard, or that application of the standard will result in a diminution of safety.

### **BACKGROUND<sup>3</sup>**

On July 15, 2009, the Petitioners, Canyon Fuel Company, LLC, and Mountain Coal Company, LLC,<sup>4</sup> filed twelve largely identical petitions for the modification of three standards applicable to the use of non-permissible battery powered surveying equipment. The petitions involve a request at each of four mines to modify the application of 30 C.F.R. § 75.500(d), to permit the use of such equipment in or inby the last open crosscut, the application of 30 C.F.R. § 75.507-1(a) to permit the use of such equipment in return airways and the application of 30 C.F.R. § 75.1002(a) to permit the use of such equipment within 150 feet of pillar workings. These standards are:

#### **30 C.F.R. § 75.500 Permissible electric equipment.**

On and after March 30, 1971:

- (a) All junction or distribution boxes used for making multiple power connections inby the last open crosscut shall be permissible;
- (b) All handheld electric drills, blower and exhaust fans, electric pumps, and such other low horsepower electric face equipment as the Secretary may designate on or before May 30, 1970, which are taken into or used inby the last open crosscut of any coal mine shall be permissible;
- (c) All electric face equipment which is taken into or used inby the last open crosscut of any coal mine classified under any provision of law as gassy prior to March 30, 1970, shall be permissible; and
- (d) All other electric face equipment which is taken into or used inby the last crosscut of any coal mine, except a coal mine referred to in § 75.501, which has not been classified under any provision of law as a gassy mine prior to March 30, 1970, shall be permissible.

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<sup>3</sup> I have not provided the detailed factual or procedural background for Peabody Sage Creek Mining and Bowie Resources, LLC. A review of the filings in these cases allows me to conclude that these mines are sufficiently similar to the Canyon Fuel and Mountain Coal mines that applying this order to them is appropriate.

<sup>4</sup> Hereinafter, the petitioners, including Peabody Sage Creek Mining and Bowie Resources, LLC, will be jointly referred to as “Canyon Fuel” unless separate identification is necessary for clarity.

**30 C.F.R. § 75.507-1 Electric equipment other than power-connection points; outby the last open crosscut; return air; permissibility requirements.**

(a) All electric equipment, other than power-connection points, used in return air outby the last open crosscut in any coal mine shall be permissible except as provided in paragraphs (b) and (c) of this section.

**30 C.F.R. § 75.1002 Installation of electric equipment and conductors; permissibility.**

(a) Electric equipment must be permissible and maintained in a permissible condition when such equipment is located within 150 feet of pillar workings or longwall faces.

Canyon Fuel sought modifications for three mines: the Sufco Mine, the Dugout Canyon Mine and the Skyline Mine #3. Mountain Coal sought the modification for the West Elk Mine.

The West Elk Mine is located in Gunnison County, Colorado, one miles east of Somerset, Colorado. The average mining height is 10 feet. There are approximately 353 individuals employed at the West Elk Mine, 275 who work underground and 92 who work on the surface. Approximately 6.0 million tons of coal is produced annually. There is one continuous miner section and one longwall retreat section. The West Elk Mine has methane liberation of approximately 2,879,781 cubic feet per 24 hour period. It is subject to one spot inspection by MSHA every 5 working days.

The Sufco Mine is located in Sevier County, Utah near Salina, Utah. The average mining height is 9 feet to 9 feet 6 inches. There are approximately 383 individuals employed at this mine, 258 who work underground and 125 who work on the surface. Approximately 6.5 million tons of coal are produced a year. There are three continuous miner sections, which Canyon Fuel operates on a regular basis, and one longwall retreat section. The Sufco Mine has methane liberation of approximately 62,000 cubic feet per 24 hour period and is not subject to mandatory spot inspections.

The Skyline No. 3 Mine is located in Carbon County, Utah near Scofield, Utah. There are approximately 241 persons employed at Skyline, 206 who work underground and 35 who work on the surface. Approximately 2.5 million tons of coal is produced annually. There are two continuous miner sections and one longwall retreat section. It has methane liberation of approximately 17,000 cubic feet per 24 hour period and is not subject to mandatory spot inspections.

The Dugout Canyon Mine is located in Carbon County, Utah, 12 miles northeast of Wellington, Utah. There are approximately 82 persons employed here, 64 who work underground and 22 who work on the surface. Approximately 234,952 tons of coal annually is produced. There is one continuous miner section that Canyon Fuel operates on a regular basis. Canyon Fuel previously operated a longwall using a petition for modification that permits use of 2-entry longwall mining and expects to do so in the future. The Dugout Canyon

Mine has methane liberation of approximately 244,498 cubic feet per 24 hour period. It is on 15 day spot inspection status.

In its petitions for modification, the Petitioners proposed that non-permissible battery powered surveying equipment be allowed subject to the following conditions:

a. Non-permissible surveying equipment shall be used only when equivalent permissible equipment does not exist. Such non-permissible surveying equipment would include, but would not be limited to, low voltage or battery-powered non-permissible surveying equipment, portable battery operated miner transits, total station surveying equipment, electronic distance meters, and other equipment that may have to be used including tools such as data loggers and laptop computers.

b. All non-permissible electronic surveying equipment to be used in or inby the last open crosscut or within 150 feet of pillar workings or longwall faces shall be examined prior to use to ensure the equipment is being maintained in a safe operating condition. These checks shall include:

i. check the instrument for any physical damage and the integrity of the case;

ii. remove the battery and inspect for corrosion;

iii. inspect the contact points to ensure a secure connection to the battery;

iv. reinsert the battery and power up and shut down to ensure proper connections; and

v. check the battery compartment cover or battery attachment to ensure that it is securely fastened.

c. The results of such inspection will be recorded and retained for one year and made available to MSHA upon request.

d. A qualified person as defined in existing 30 C.F.R. § 75.151 shall continuously monitor for methane immediately before and during the use of non-permissible surveying equipment in or inby the last open crosscut or within 150 feet of pillar workings or longwall faces.

e. Non-permissible surveying equipment shall not be used if methane is detected in concentrations at or above the levels specified in 30 C.F.R. § 75.323. When methane is detected at such level while the non-permissible surveying equipment is being used, the equipment shall be de-energized immediately and

the non-permissible electronic equipment withdrawn outby the last open crosscut or further than 150 feet from pillar workings or longwall faces.

f. All handheld methane detectors shall be MSHA approved and maintained in permissible and proper operating condition as defined by 30 C.F.R. § 75.320.

g. Batteries contained in the surveying equipment must be "changed out" or "charged" in intake air outby the last open crosscut, out of the return and more than 150 feet away from pillar workings or the longwall face.

h. Qualified personnel engaged in the use of surveying equipment shall be properly trained to recognize the hazards and limitations associated with the use of surveying equipment in areas where methane could be present.

i. The non-permissible surveying equipment shall not be put into service until MSHA has initially inspected the equipment and determined that it is in compliance with all the above terms and conditions.

j. Within 60 days after the Proposed Decision and Order becomes final, Mountain Coal and Canyon Fuel shall submit proposed revisions for its approved 30 C.F.R. Part 48 training plan to the Coal Mine Safety and Health District Manager. In addition to training regarding the requirements specified in item 1, these proposed revisions shall specify initial and refresher training regarding the terms and conditions stated in the Proposed Decision and Order.<sup>5</sup>

Each of the petitions for modification was investigated by MSHA. The investigators issued reports that, while not making a recommendation, gave comments that included provisions for inclusion in a modification order. (JX- 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24.) Each investigative report included the following:

This should be added to the statements: non-permissible surveying equipment shall not be used when float coal dust is in suspension, or in the face of the mining section or longwall doing coal production. . . .

(JX-2 at 6.)

On April 4, 2011, Charles J. Thomas, Deputy Administrator for Coal Mine Safety and Health for MSHA issued a Proposed Decision and Order in which he denied the four proposed modifications of 30 C.F.R. § 75.1002(a). Mr. Thomas denied the proposed modification of 30 C.F.R. § 75.507-1(a) on May 31, 2011. Finally, Mr. Thomas denied the modifications of 30 C.F.R. §71.500(d) for the West Elk Mine on May 5, 2011, for the Dugout Canyon Mine and the Sufco Mine on May 6, 2011, and the Skyline #3 Mine on May 16, 2011. In each of the denials the Deputy Administrator determined that "the proposed alternative method will not provide the same measure of protection to the miners as the standard."

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<sup>5</sup> These proposed conditions were copied from the Stipulation of Facts signed by both parties.

Canyon Fuel and Mountain Coal each filed a Request for Hearing on Proposed Decision and Order, for each modification at each mine. The requests were forwarded to the Office of Administrative Law Judges. After numerous delays, the cases were consolidated and assigned to me for review. On December 10, 2013 and December 11, 2013, I conducted a hearing in Salt Lake City, Utah. During the two-day hearing the mine operators called six fact witnesses and two expert witnesses. MSHA called two fact witnesses. On December 12, 2013, accompanied by two attorneys for MSHA, one MSHA inspector, the attorney for the mines, and numerous mine officials, I took an informational tour of the Skyline #3 Mine. No transcript or recording was taken during this background tour. On January 3, 2014, the parties filed joint Stipulations Concerning Mine Tour. While I found the tour beneficial to my understanding of the issues in this and other cases, I am not relying on information received while in the mine to render my decision, unless the information was discussed in the stipulations or there was on-the-record testimony discussing the information during the hearing.

## ISSUES

The issues have evolved since the petitions were first filed. No longer is the issue centered on whether the proposed modification should be granted, that has been conceded by MSHA. (Transcript (Tr.) at 14). The question now is simply what conditions are necessary for the use of non-permissible electronic surveying equipment in or inby the last open crosscut, within 150 feet of pillar workings or longwall faces or in the return airway. Underlying the question of conditions is the statutory restriction that the Secretary must determine “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 of such mine by such standard” prior to granting the petition. 30 U.S.C. § 811(c). The test to determine if the modification, i.e. the alternative method of compliance, meets the statutory requirement is a two-step analysis. First, the alternative method must “promote the same safety goals as the original standard with no less than the same degree of success.” The second step is that “the benefits of modification [must] outweigh or neutralize any potential adverse effects” when viewed in terms of overall miner safety. *Int’l Union, UMWA v. MSHA (Cyprus Emerald Resources)*, 920 F.2d 960, 962-4 (D.C. Cir. 1990).

MSHA suggests that the conditions imposed by the Secretary in the *Rosebud Mining Co. v. Mine Safety and Health Administration (Rosebud)*, OALJ Docket Nos. 2010-MSA-0001, 2011-MSA-00002, 2011-MSA-00011, 2011-MSA-00012, are appropriate for adoption here. Furthermore, MSHA acknowledges that, although each mine is different, a single set of conditions is appropriate for the four mines. (Tr. at 20.)

Usually the burden of proof that the proposal meets the *Cyprus Emerald* test would fall on the mine company seeking the modification. However, the Assistant Secretary conceded that the modification is appropriate. Each party has offered conditions for allowing the modification. Many of these conditions are substantially the same. Those that are essentially identical, I have adopted with little or no discussion.

The proponent of a particular condition has the burden to demonstrate that the benefit of that condition must “outweigh or neutralize any potential adverse effect.” The question is not whether the conditions imposed provide the safest alternatives but rather, does each condition guarantee, at least, the same measure of protection as the published standard. Thus, I do not compare Canyon Fuel’s proposal to MSHA’s proposal selecting Canyon Fuel’s only if it is safer than MSHA’s proposal. I have a blank canvas on which I can place ideas from MSHA, other ideas from Canyon Fuel and additional ideas based on the testimony and evidence.

## DISCUSSION

This case is about the evaluation of risk. MSHA’s original position, as noted by the denial of the petitions for modification, was that allowing non-permissible electronic surveying equipment to operate in or inby the last open crosscut, in return airways and within 150 feet of pillar workings increases the risk to mine workers and should not be allowed. After the *Rosebud* decision, MSHA holds the position that non-permissible electronic surveying equipment is allowed but certain conditions must be imposed to control the risk associated with the use of this equipment. A balance must be found so that the conditions do not consume the benefit associated with the use of the equipment.

One concern is the time required to accomplish the various underground tasks proposed by the Assistant Secretary. There was discussion throughout the hearing regarding underground hazards and even disagreements regarding whether coal mining is hazardous. While I need not determine the answer to that question, I do find that there are numerous hazards associated with working in a coal mine, not the least of which are movement of heavy equipment in a tight and dark environment, and exposure to coal mine dust. A number of the proposed conditions offered by the Assistant Secretary require testing prior to energizing the electronic surveying equipment. Testimony indicates these tests will take 15 minutes or more each time the surveying equipment is moved. Requiring these tests increases the exposure of the survey crew to the underground hazards. Therefore, I have taken a critical look at the requirements that mandate this extra exposure to hazards to determine if the benefit of the condition outweighs the adverse effect of additional exposure to underground hazards.

MSHA defines risk in two ways. The first is the “chances of something bad happening.” As this type of risk relates to the cases before me, MSHA defines it as “the chances of a spark caused by the battery pack or another aspect of the non-permissible equipment causing an explosion, an explosion caused by either methane or coal dust or a combination of the two.” (Tr. at 54).

MSHA defines the second type of risk as the level of consequences when that bad thing happens. Here, MSHA indicates “the consequences of an explosion in an underground mine are catastrophic.” (Tr. at 54-55). MSHA indicates that “some conditions might go toward minimizing the chance of [an explosion] happening. And those are designed because we can’t do anything to minimize the consequences.” (Tr. at 55). Other conditions were imposed to mitigate the bad consequences. MSHA states that the crux of the case is to determine “what is necessary to mitigate the increased risk.” (Tr. 56-57). MSHA appears to be operating under the assumption that electronic surveying equipment “have the potential to spark.” I am not sure that

while operating, under normal conditions, this equipment has the potential to spark. (Tr. at 118.) Further, no evidence was presented that an electrical malfunction of the electronic surveying equipment would generate a spark.

MSHA suggests that the conditions imposed by the Secretary in *Rosebud* should be adopted for approval of these Petitions for Modification. (Tr. at 14). The *Rosebud* conditions are:

1. Rosebud will maintain a separate log book for each piece of electronic surveying equipment. The logbooks will be kept in the mine office where the equipment is located and will be available for audit by MSHA inspectors. The log book will contain the date of manufacture and/or purchase of that particular theodolite or total station.

2. All non-permissible battery-powered surveying equipment to be used in return air or in or inby the last open crosscut shall be examined prior to use to ensure the equipment is being maintained in a safe operating condition. In addition, the equipment will be examined at intervals not to exceed seven days by a qualified person as defined in 30 C.F.R. § 75.153; examination results shall be recorded weekly in the equipment's log book. These checks shall include:

- i. Checking the instrument for any physical damage and the integrity of the case;

- ii. Removing the battery and inspecting for corrosion;

- iii. Inspecting the contact points to ensure a secure connection to the battery;

- iv. Reinserting the battery and power up and shut down to ensure proper connections; and

- v. Checking the battery compartment cover to ensure that it is securely fastened.

3. At least two persons in the surveying crew shall be qualified persons as defined in 30 C.F.R. § 75.151 and shall continuously monitor for methane immediately before and during the use of non-permissible surveying equipment in or inby the last open crosscut or in the return. While the equipment is used in or inby the last open crosscut or in the return one qualified person who is continuously monitoring for methane shall remain with the electronic surveying equipment.

4. All hand-held methane detectors shall be MSHA-approved and maintained in permissible and proper operating condition as defined in existing 30 C.F.R. 75.320.

5. All methane detectors must provide visual and audible warnings when methane is detected at or above 1.0 percent.

6. Non-permissible surveying equipment shall not be used if methane is detected in concentrations at or above 1.0 percent methane. When 1.0 percent or more of methane is detected while the non-permissible surveying equipment is being used, the equipment shall be de-energized immediately and the non-permissible electronic equipment withdrawn outby the last open crosscut. Before re-entering the area, corrective action must be completed to reduce the level of methane and the atmosphere must be checked to ensure that it is safe to resume surveying activities in or inby the last open crosscut or in the return air.

7. Immediately before the surveying equipment is activated in or inby the last open crosscut or in the return, an air reading will be taken at the location of the equipment to assure that air movement is at least equal to that required by the ventilation plan as follows:

i. At the location of the last open crosscut, as identified in the ventilation plan, the air reading will be the amount required in the ventilation plan for that location;

ii. In the return the air reading will be the amount required in the ventilation plan for the last open crosscut; or

iii. In any other location, the amount will be the amount required in the ventilation plan when roofbolting is occurring.

8. Non-permissible equipment shall not be used where float coal dust is in suspension.

9. Non-permissible surveying equipment shall not be used when coal production is occurring in the section. All mining in the section shall cease prior to use of the equipment in or inby the last open crosscut or in the return.

10. Batteries contained in the surveying equipment must be “changed out” or “charged” in fresh air outby the last open crosscut. Replacement batteries for the electronic surveying equipment shall not be brought in or inby the last open crosscut or in the return. Before taking non-permissible electronic surveying equipment in or inby the last open crosscut or into the return, the equipment must have fully charged batteries.

11. Qualified personnel engaged in the use of surveying equipment shall be properly trained to recognize the hazards and limitations associated with the use of surveying equipment.

12. All members of the surveying crew shall receive specific training on the terms and conditions of this decision and order before using non-permissible electronic equipment in or inby the last open crosscut or in the return.

13. Before putting into service a piece of non-permissible surveying equipment that will be used in or inby the last open crosscut or in the return, Rosebud shall ensure that MSHA has sufficient notice to allow MSHA to initially inspect the equipment and determine that it is in compliance with the terms and conditions of this order.

14. Non-permissible electronic surveying equipment shall only be used until equivalent permissible electronic surveying equipment is available or if viable new mechanical surveying equipment is not commercially available.

15. Within 60 days after the Proposed Decision and Order becomes final, Rosebud shall submit proposed revisions for its approved 30 C.F.R. Part 48 training plan to the Coal Mine Safety and Health District Manager. These proposed revisions shall specify initial and refresher training regarding the terms and conditions stated in this Decision and Order. When training is conducted on the terms and conditions in this decision and order, an MSHA Certificate of Training (Form 5000-23) shall be completed. Comments shall be included on the Certificate of Training indicating that it was surveyor training.

16. Rosebud shall replace or retire from service any electronic surveying instrument that was acquired prior to December 31, 2001 within one year of this Order becoming final. Rosebud shall replace or retire from service any electronic surveying instrument that was acquired between January 1, 2002 and December 31, 2007 within two years of this Order becoming final. Within three years of the date that this Order becomes final, Rosebud shall replace or retire from service any theodolite that was acquired more than five years prior to the date that this Order became final or any total station acquired more than ten years prior to the day that this Order became final. After five years, Rosebud will maintain a cycle of purchasing new electronic surveying equipment whereby theodolites will be no older than five years from date of manufacture and total stations will be no older than 10 years from date of manufacture.

17. Rosebud is to ensure that all surveying contractors hired by Rosebud are using relatively new electronic equipment, i.e. theodolites no older than five years from date of manufacture and total stations no older than 10 years of manufacture.

18. Rosebud is to ensure that all non-permissible electronic surveying equipment is serviced according to the manufacturer's recommendations. Dates of service will be recorded in the equipment's log book and a description of the work performed.

19. Immediately before using the non-permissible electronic surveying equipment in or inby the last open crosscut or in the return, Rosebud shall ensure compliance with 30 C.F.R. § 75.403 by using a permissible coal dust explosibility meter (CDEM) or equivalent method to test the mixed coal dust in the immediate area where the electronic equipment is to be used.

20. Except for conditions 16 and 17, all conditions of use in this decision and order shall apply to all non-permissible electronic surveying equipment used in or inby the last open crosscut or in a return, regardless of whether the equipment is used by Rosebud or by an independent contractor.

Finally, the Assistant Secretary directed Rosebud to post his Decision and Order in unobstructed locations on the bulletin boards and/or in other conspicuous places where notices to miners are ordinarily posted, at all the mines for which this Decision and Order applies, for a period of not less than 60 consecutive days.

I view my role as balancing the risks. I have examined both proposals, listened to the witnesses, and reviewed the exhibits entered into evidence. In determining what conditions are necessary and appropriate I keep in mind that the conditions I impose for the use of non-permissible electronic surveying equipment must “at all times guarantee no less than the same measure of protection afforded the miners of such mine” when mechanical surveying equipment is used. In addition, the conditions must take into account the advantage and disadvantages of the use of non-permissible electronic surveying equipment, including the effects unrelated to goals of the standard that prohibits the use of this equipment, whether the use of non-permissible electronic surveying equipment will achieve at least equivalence in overall mine safety. Generally the burden to prove a modification is appropriate falls on the mine company. However, because the Assistant Secretary approved the modification and essentially adopted all of Canyon’ Fuels conditions, the additional conditions proposed by MSHA are new proposals for which they have the burden of proof. 5 U.S.C. § 556(d).<sup>6</sup>

This task involves more than just a comparison of Canyon Fuel’s proposed conditions to MSHA’s proposed conditions, therefore, I do not feel constrained to pick either proposal. Rather I am looking at each proposed condition and determining which conditions and the wording of each condition is appropriate. I have based this on the conditions offered by MSHA and Canyon Fuel, as well as my own understanding of whether each condition guarantees, at least, the same measure of protection as the published standards. Even with conditions that, in essence, MSHA and Canyon Fuel, have agreed, I modified wording where necessary and appropriate.

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<sup>6</sup> “Except as otherwise provided by statute, the proponent of a rule or order has the burden of proof.” 5 U.S.C. § 556(d).

## **I. When Is Electronic Surveying Equipment Allowed To Be Used Inby the Last Open Crosscut, in Return Air, or Within 150 Feet of a Working Surface**

The Assistant Secretary did not authorize unlimited use of electronic surveying equipment, even with the proposed conditions. In addition to the conditions imposed, the Assistant Secretary proposed that non-permissible electronic surveying equipment “shall only be used until equivalent permissible electronic surveying equipment is available or if viable new mechanical surveying equipment is not commercially available.”

Canyon Fuel suggests a broader availability. “Non-permissible surveying equipment shall be used only when equivalent permissible equipment does not exist.” Canyon Fuel goes on to identify types of equipment “Such non-permissible surveying equipment would include, but would not be limited to, low voltage or battery-powered non-permissible surveying equipment, portable battery operated miner transits, total station surveying equipment, electronic distance meters, and other equipment that may have to be used including tools such as data loggers and laptop computers.”

Canyon Fuel expressed concern about two aspects of this limitation as it was proposed by the Assistant Secretary. First, at the hearing, Canyon Fuel raised a concern about permissible surveying equipment becoming available at a cost-prohibitive price level. (Tr. at 33). Canyon Fuel also expressed concern that the Assistant Secretary limits the use of non-permissible electronic surveying equipment “if viable new mechanical surveying equipment [becomes] commercially available.” (Tr. at 32). Both of Canyon Fuel’s concerns are valid. First, regarding the cost issue, I would expect that a piece of equipment which has been tested and approved by MSHA would cost more than the equivalent non-certified piece of equipment. However, it is impossible at this time to identify a cost level above which acquiring the equipment would be cost-prohibitive. Based on the fact that no manufacturer is actively pursuing certification of this equipment, I anticipate that it will be a long time, if ever, before the question is ripe for discussion. I leave the question of whether the certified equipment is cost prohibitive to the day there is a piece of certified electronic surveying equipment.

Electronic surveying equipment is not defined. Canyon Fuel proposes approval for equipment which “would include, but would not be limited to, low voltage or battery-powered non-permissible surveying equipment, portable battery operated miner transits, total station surveying equipment, electronic distance meters, and other equipment that may have to be used including tools such as data loggers and laptop computers.” I find this request very broad. However, there was testimony that laptop computers are used underground at the longwall face. (Tr. at 150). Therefore, I need not include a general approval as I presume there is an approved laptop that would meet the needs of a surveying crew. I am not inclined to use terms “would include, but would not be limited to” or “including tools such as” in the conditions as it leaves the condition too open-ended. The other equipment in Canyon Fuel’s definition is subject to the requirement I place on all surveying equipment.

The Assistant Secretary’s prohibition on the use of non-permissible electronic surveying equipment when “viable new mechanical surveying equipment” is commercially available is not

appropriate and I do not include it in my order. I find that electronic surveying equipment is significantly more accurate than mechanical equipment. (Tr. at 100). Furthermore, MSHA “conceded the use of electronic surveying equipment” arguing that the discussion comparing the accuracy of the two types of devices was not in play because of this concession. (Tr. at 56). Finally, I find the use of mechanical surveying equipment diminishes the overall level of safety for the miner.

There is an additional requirement I find appropriate. Rather than approve a specific model of surveying equipment, Canyon Fuel may only use models with an IP 66 or higher rating until such time that permissible electronic surveying equipment is commercially available.<sup>7</sup>

Therefore, I find that:

Non-permissible electronic surveying equipment shall only be used until equivalent permissible electronic surveying equipment is available. The equipment allowed under this order is low voltage or battery-powered non-permissible surveying equipment, portable battery operated miner transits, total station surveying equipment, electronic distance meters and electronic data collectors. All non-permissible electronic surveying equipment shall have an IP 66 or higher rating.

## **II. Equipment Inspection and Maintenance**

Many of the proposals regarding equipment inspection and maintenance suggested by Canyon Fuel and MSHA are very similar. MSHA proposes additional safeguards. The additional proposals suggested by MSHA are reasonable and designed to ensure the non-permissible electronic surveying equipment is in safe working condition during all uses. The additional proposals require a logbook for each piece of equipment. This is not an onerous requirement but provides long term information about the use and maintenance of the equipment.

In addition to the requirement that the equipment be examined before each use, presumably by the surveyor who will be using it, the Assistant Secretary’s proposal requires an inspection at least every seven days by a person qualified to do electrical work. My initial reaction to the requirement that electricians inspect this electronic equipment was that an electrician was not the right person to do this inspection. However, Peter Saint, an MSHA inspector, testified that the mine electrician worked on the “smallest voltage there is or the largest voltage.” He further testified that “electricians are becoming more and more qualified and capable of working with electronics.” (Tr. at 452-53). Furthermore, this seven-day inspection is not intended to inspect the inner workings of the equipment but rather to have a

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<sup>7</sup> The Ingress Protection (“IP”) standard was developed by the International Electrotechnical Commission. A chart explaining the ratings is at PX-44A. Although there was discussion about whether the use of water as a substitute for gas was appropriate, I find Mr. Ryder’s explanation regarding the use of water as a substitute convincing and a reasonable alternative until permitted equipment is available. (Tr. at 272-74; 317-18).

new and fresh set of eyes looking at the equipment, avoiding the natural tendency to become complacent on the part of the person who uses and examines the equipment every day.

MSHA requests “sufficient notice” prior to putting a piece of non-permissible electronic surveying equipment into service so that it may inspect the equipment to determine if it is in compliance with this order. I agree, as does Canyon Fuel, that such an inspection is appropriate. However, the term “sufficient notice” is ambiguous, therefore, I do not include it in my order. Obviously, MSHA cannot inspect equipment prior to being notified that the equipment is ready for use. Therefore, Canyon Fuel has the burden to provide notice that the equipment needs inspection. Absent undue delay on MSHA’s part, which I do not anticipate, Canyon Fuel will have all equipment inspected when Canyon Fuel needs it.

Last, the proposal requires Canyon Fuel to follow the manufacturer’s recommendation for maintenance. That is a good practice that imposes no burden on Canyon Fuel. Therefore, I am adopting the following conditions regarding equipment and maintenance:

A. Canyon Fuel will maintain a logbook for electronic surveying equipment. The logbooks will be kept in the mine office where the equipment is located. The log book will contain the date of manufacture and/or purchase of each particular piece of electronic surveying equipment. The logbook shall be made available to MSHA upon request.

B. All non-permissible electronic surveying equipment to be used in or inby the last open crosscut, within 150 feet of pillar workings or longwall face, or in the return shall be examined by the person to operate the equipment prior to taking the equipment underground to ensure the equipment is being maintained in a safe operating condition. These checks shall include:

- i. check the instrument for any physical damage and the integrity of the case;
- ii. remove the battery and inspect for corrosion;
- iii. inspect the contact points to ensure a secure connection to the battery;
- iv. reinsert the battery and power up and shut down to ensure proper connections; and
- v. check the battery compartment cover or battery attachment to ensure that it is securely fastened.

The results of this inspection will be recorded in the logbook.

C. The equipment shall be examined at least weekly by a qualified person as defined in 30 C.F.R. § 75.153; the examination results shall be recorded weekly in the equipment’s log book. Inspection entries in the logbook may be expunged after one year.

D. Canyon Fuel is to ensure that all non-permissible electronic surveying equipment is serviced according to the manufacturer's recommendations. Dates of service will be recorded in the equipment's log book and shall include a description of the work performed.

E. The non-permissible surveying equipment, that will be used in or inby the last open crosscut, within 150 feet of the pillar workings or longwall face or in the return, shall not be put into service until MSHA has initially inspected the equipment and determined that it is in compliance with all the terms and conditions of this order.

### **III. Methane**

Methane is a significant hazard in coal mines. The ability to detect methane is essential to the safety of the miners. MSHA's proposal and Canyon Fuel's proposal are very similar. The one MSHA condition which I found needed some modification was the requirement that two individuals qualified to use methane detectors must be on each crew.

The regulation, 30 C.F.R. § 75.151, requires six months of experience with a methane detector prior to taking the test to become certified. However, as was discussed during the hearing, this could result in the unnecessary burden of having a third person, who is qualified to use methane detectors, on the survey crew. (Tr. at 465) I find that allowing the second individual on the surveying crew to be in the six-month training period necessary to become certified on methane detecting equipment does not decrease the safety of miners. The following is the condition with respect to Methane:

Non-permissible surveying equipment shall not be used if methane is detected in concentrations at or above 1.0 percent methane. When 1.0 percent or more of methane is detected while the non-permissible surveying equipment is being used, the equipment shall be de-energized immediately and the non-permissible electronic equipment withdrawn outby the last open crosscut or further than 150 feet from pillar workings or longwall faces, or out of the return. Prior to returning inby the last open crosscut, within 150 feet from pillar workings or longwall face, or into the return all requirements of 30 C.F.R. § 75.323 must be complied with.

All hand-held methane detectors shall be MSHA-approved and maintained in permissible and proper operating condition as defined by 30 C.F.R. § 75.320. All methane detectors must provide visual and audible warnings when methane is detected at or above 1.0 percent.

Prior to energizing any of the non-permissible surveying equipment in or inby the last open crosscut or within 150 feet of pillar workings or longwall faces, or in the return, methane tests must be made no more than eight inches from the roof or floor at the location of the equipment.

A qualified person as defined in existing 30 C.F.R. § 75.151 shall continuously monitor for methane immediately before and during the use of non-permissible surveying equipment in or inby the last open crosscut, within 150 feet of pillar workings or longwall faces or in the return. A second person in the surveying crew, if there are two people in the crew, must also continuously monitor for methane. That person must either be a qualified person as defined in 30 C.F.R. § 75.151 or be in the process of being trained to be a qualified person but has yet to “make such tests for a period of 6 months” as required by 30 C.F.R. § 75.151. Upon completion of the 6 month training period the second person on the survey crew must become qualified in order to continue on the survey crew. If the surveying crew consists of one person, rather than two, such person shall monitor for methane with two separate devices.

#### **IV. Batteries**

Both parties essentially agree that “Batteries contained in the surveying equipment must be ‘changed out’ or ‘charged’ in intake air outby the last open crosscut, out of the return and more than 150 feet away from pillar workings or the longwall face.” However, MSHA proposes two additional requirements, “Replacement batteries for the electronic surveying equipment shall not be brought in or inby the last open crosscut or in the return. Before taking non-permissible electronic surveying equipment in or inby the last open crosscut or into the return, the equipment must have fully charged batteries.”

Regarding the question of taking spare batteries “in or inby the last open crosscut or in the return,” MSHA’s argument was not convincing. John Arrington, one of the MSHA witnesses, stressed that the batteries should be kept outby the last open crosscut. He discussed how miners, particularly in smaller mines “could have them in some type of bucket, in their pockets, other things in their pockets. But those terminals inby the last open crosscut could short out and cause an arc.” (Tr. at 429). He also indicated if the batteries were put in a place where “the spads can drop on them, there is the possibility of the battery shorting out and arcing over.” (Tr. at 432). He did not accept keeping the batteries in the foam within the box for carrying the equipment was safe. (Tr. at 430-31). When asked if he had ever heard of a battery short out or arc over, he was evasive, eventually responding “I don’t know because I’m not around those as a surveyor. I just know the relativity of a battery to battery getting shorted out.” (Tr. at 432). I find that keeping a single battery in the foam compartment designed for carrying the spare battery, in the total station carrying container is not unsafe.

Canyon Fuel expressed concern about the proposal that batteries be “fully charged” when taking the surveying equipment in or inby the last open crosscut or into the return. The concern centered on the possibility of interpreting this provision to require a fully charged battery every time the equipment was moved. However, on questioning Mr. Arrington agreed that having the batteries fully charged before any surveying begins on a shift is acceptable.

Based on these discussions the following condition relating to batteries shall be part of the order.

Batteries used to operate the surveying equipment must be “changed out” or “charged” in intake air outby the last open crosscut, out of the return and more than 150 feet away from pillar workings or the longwall face. Replacement batteries for the electronic surveying equipment shall be carried only in the compartment provided for a spare battery in the electronic equipment carrying case. On each entry into the mine, all batteries for the electronic surveying equipment must be fully charged.

## **V. Ventilation**

The Assistant Secretary imposed three conditions in the *Rosebud* decision that are grounded on questions of ventilation, air flow and suspended coal dust.

Immediately before the surveying equipment is activated in or inby the last open crosscut or in the return, an air reading will be taken at the location of the equipment to assure that air movement is at least equal to that required by the ventilation plan as follows:

- i. At the location of the last open crosscut, as identified in the ventilation plan, the air reading will be the amount required in the ventilation plan for that location;
- ii. In the return the air reading will be the amount required in the ventilation plan for the last open crosscut; or
- iii. In any other location, the amount will be the amount required in the ventilation plan when roofbolting is occurring.

Non-permissible equipment shall not be used where float coal dust is in suspension.

Non-permissible surveying equipment shall not be used when coal production is occurring in the section. All mining in the section shall cease prior to use of the equipment in or inby the last open crosscut or in the return.

### **a. Air Flow Measurement**

MSHA does not explain, as it relates to the use of the surveying equipment, the underlying purpose of the condition for measuring air flow prior to the use of the electronic surveying equipment. Mr. Saint, one of the MSHA witnesses, testified that we needed to verify the airflow because we require airflow over other pieces of equipment such as diesel equipment, mining machines, and power centers. “So I think that surveying equipment shouldn’t be treated any different than anything else we take into the mine. We should have good, fresh air flowing over the top of it to provide us the ability to actually cool down or to maintain a good environment for it to be in, just like anything else.” (Tr. at 467.)

Without further explanation, I see three potential reasons for the air flow check. First, it is an administrative check to see that the requirements of vent plan are being met. If this is the case, i.e., the air flow check is just to ensure the requirements of the ventilation plan are being met, without any relationship to the use of surveying equipment, then there are better people to do this than the survey crew. Second, the air flow check is to ensure that liberated methane does not accumulate in the vicinity of the surveying equipment. I see two difficulties with this if it is the reason for the check. Methane could be liberated outby the surveying and thus flowing right past the equipment. More important, there are two methane detectors in the vicinity of the surveying equipment which are a more reliable way to determine if there is methane present and to keep the surveying equipment out of explosive levels of methane. Finally, if air flow check is to ensure that coal dust, in the air, in the vicinity of the surveying equipment, does not reach explosive levels, having air flow that meets the requirement of the ventilation plan, is likely to accomplish that goal. However, determining that the air flow is a particular volume does not provide a benefit sufficiently strong to offset the additional exposure resulting from the extra time needed to measure and calculate the air flow each time the equipment is moved. This is because, as discussed below, the surveying equipment cannot and will not effectively operate in coal dust at an explosive level, so any ignition potential relating to the electronic coal dust does not come into play.

Furthermore, as discussed at the hearing, the electronic surveying equipment, if allowed, would frequently be used at an intersection, a place for which obtaining an air flow reading may not be possible. Even John Arrington, one of the MSHA witnesses agreed that taking a reading in an intersection may not be possible.

Q. Now if I'm surveying inby the last open crosscut, I'm going to be in an intersection. Right?

A. That's correct.

Q. And if I'm at an intersection, I don't have those boundaries we just talked about if I'm taking an airflow reading?

A. That's correct.

Q. And I'm supposed to take this air reading at the location where I am surveying. Right?

A. That's what it says, yes.

Q. So I may not be able to calculate the area if I'm standing in an intersection?

A. That's correct.

(Tr. at 442.)

Mr. Arrington also raised some concerns about the requirement that an air flow measurement be taken in the return air prior to use of the electronic surveying equipment there. When asked about the Assistant Secretary's condition that an air flow reading be taken at the location of the equipment to verify "that the air movement is at least equal to that required by the vent plan," (Tr. at 414) Mr. Arrington stated, particularly as it applies to the testing in the return air, "The condition, I think is something that he may have put in there not thinking deep enough into it." (Tr. at 416, see also Tr. at 205.)

This specific proposal has a number of problems. First, the condition cannot be met at an intersection because measuring the air flow, frequently, cannot be accomplished. Second, even an MSHA witness thought there had not been enough thought put into the requirement regarding air flow. I find this requirement as presented is not appropriate.

However, I do find that having appropriate airflow when surveying is important. Therefore, I include the following in the order:

When using non-permissible electronic surveying equipment inby the last open crosscut, within 150 feet of the pillar workings or longwall face, or in the return, the surveyor must confirm by measurement or by inquiry of the person in charge of the section, that the air quantity on the section, on that shift, in the last open crosscut or coming to the longwall face is the quantity that is required by the mine's ventilation plan.

#### **b. Float Coal Dust**

MSHA proposes that the non-permissible electronic surveying "shall not be used where float coal dust is in suspension." I find this somewhat vague and ambiguous. There is no measurement of what is allowed. Therefore, I interpret this to be that MSHA wants no use of the equipment when there is ANY float coal dust in suspension. MSHA indicated that such a condition, i.e. "that non-permissible equipment shall not be used where float coal dust is in suspension, . . . [is] a standard provision that" MSHA puts modifications that are "granted for non-permissible diagnostic equipment." (Tr. at 425-26.) Unlike other pieces of non-permissible electronic equipment that are allowed to operate inby the last open cross cut, within 150 feet of a working surface or in return air, using non-permissible electronic surveying equipment is a visual operation and the visibility restrictions resulting from float coal dust make it impossible to survey even at dust levels significantly below the explosive level.

Because no device has been identified, in the record, that can determine if float coal dust is in suspension and the amount of such suspended float coal dust, I presume that MSHA is allowing for a visual determination regarding the presence of float coal dust. I agree that is the appropriate way to make the determination. However, amounts of coal dust well below the explosive level should not hinder operations. The explosive amount of float coal dust is eight ounces per cubic yard. (Tr. 354-55.) That has been described in layman's terms as "if you had a light bulb in front of you, that you wouldn't be able to see it -- a lit light bulb, you wouldn't be able to see it approximately four feet in front of you if you were in an explosive concentration

of dust.” (Tr. at 285.) A surveyor would not be able to accomplish anything in such a visibility. (Tr. at 285-86.) Even at lower levels of float coal dust in the air, surveying becomes impossible.

A couple of reasons. First is if there’s very much dust at all, you can’t see the target. And if you can’t see the target, you can’t survey. Now you might see something that approximates the target.

But one thing that you have to have through the scope is a clean, crisp image of the plumb bob or the string or the target that you are looking at. The particles of dust, be it coal or rock dust or anything else, rain or fog, will defuse the picture and you don’t get a clear picture of what you have.

Secondly, total stations rely on a light beam to allow you to do your measurements. And with the light beam going out from the instrument reflecting off something and coming back to the instrument, it makes two trips, a trip out and a trip back to the instrument. And if there are any particles in the air, be it fog, be it rain, be it coal dust, be it rock dust, it severely cuts the ability to get that return beam and to get the measurement.

(Tr. at 355-56.)

Therefore, I find the condition that “Non-permissible equipment shall not be used where float coal dust is in suspension” is vague and ambiguous. Furthermore, the use of electronic surveying equipment in conditions containing float coal is self-regulating in that the visibility needed to survey disappears long before the float coal dust reaches its explosive level. Therefore, I do not include this condition as part of my order.

### **c. Ceasing Production During Surveying**

The Assistant Secretary seeks a condition that prior to operating non-permissible electronic surveying equipment, “All mining in the section shall cease.”

“*Working section.* All areas of the coal mine from the loading point of the section to and including the working faces.” 30. C.F.R. § 75.2. As Mr. Arrington testified “MSHA’s definition of a section is anything inby the loading point in the upper end of that panel that they’re working on. From the tail piece up to the face is the working section.” (Tr. at 426.) When asked to define the section in non-mining terms, he indicated that a section is approximately “500 feet by 150, 170 feet wide.” (Tr. at 427.)

This area is measurably larger than “inby the last open crosscut or within 150 feet of the working face.” At the hearing, Mr. Arrington’s testimony did not comport with the position of the Assistant Secretary. He indicated that anytime the surveyors were surveying in the working section, coal production must stop. Specifically, I inquired:

Q. [W]e’re not talking just the last inby. We’re talking 500 and some odd feet out.

A. Yes, they can't produce coal. They only produce coal with a type of mining equipment they can dig the coal out, whether it be a continuous miner, a cutting machine that cuts it and the loading machine loads it out, they have to stop producing coal.

Q. Any time the surveyors want to get within that area, that section which we now have discussed is 500 feet long approximately.

A. For that development panel, yes.

(Tr. at 427-28.)

There is testimony that indicates surveying is never done at the active face.

"The instrument is set up outby and we would not be surveying in an area, in direct line area where mining is being conducted." (Tr. at 102.) Even on the continuous miner "The surveying instrument is always set up outby the active face." (Tr. at 103.) Taylon Earl, one of the surveyors, was asked:

Q. Do you survey where they're mining?

A. No.

Q. Do you go into the other entry?

A. Yeah. Yes.

Q. Well, do you wait for them to stop mining to go back into the other entry where they have been mining to go back in and survey that?

A. If they're mining in one entry, then we set sights in the other. We will set sights while they're still mining.

(Tr. at 138.) Keith Bigelow, current mine engineer at Sufco and former Chief Surveyor there, testified: "We survey in a different entry, as opposed to the entry they're mining in." (Tr. at 186.) David Spillman, technical service manager at Dugout Canyon, who through his nearly 40 year career has been "either directly surveying, and/or been responsible for surveying," (Tr. at 193,) testified:

Q. [D]o you have two splits of air that you're operating in?

A. Yes.

Q. Now let me ask you this: If you're cutting with the continuous miner would you be in one split or the other?

A. Yes.

Q. As your surveyors go in to survey, which split do they survey in?

A. The one without the miner.

Q. Okay. So they are on essentially a separate airflow from the miner?

A. Correct.

Q. So would they be getting any dust or anything that the miner generates? Where would it be going?

A. It would be going to that split's return. The surveyors in the other split, they would not see any dust from the miner.

Q. Okay. Now on your sections on this particular section, if I'm running the miner on say, the left hand side in the left split, can I as a surveyor go downwind, so to speak, of that and survey where I would be exposed to dust from the miner?

A. No.

Q. Why is that?

A. It wouldn't be good practice to be in the dust. You couldn't see.

\* \* \*

Q. So if I'm surveying there, I'm not ever going to survey where I'm getting dust from the miner?

A. Correct.

(Tr. at 203.)

Therefore, unless surveying is right at the face, there is no need to cease production. No evidence was presented justifying this requirement to cease production in the section. I adopt the position articulated in the investigative report that surveying should not take place at the longwall or a working face during production. (JX-2 at 6.) Therefore, I find that:

Non-permissible electronic surveying equipment may not be used along the longwall face during operations of the longwall shearer or inby the last open crosscut in the entry where the continuous miner is actively extracting coal from the face.

## VI. COAL DUST EXPLOSIBILITY METER (CDEM)

The CDEM, which gives instantaneous results in real time, represents a new way for miners and operators to assess the relative hazard of coal dust accumulations in their mines and the effectiveness of their rock dusting practices. . . . The intention of the device is to assist mine operators in complying with the Mine Safety and Health Administration final rule 30 CFR 75.403, requiring that the incombustible content of combined coal dust, rock dust, and other dust be at least 80% in underground areas of bituminous coal mines.

National Institute for Occupational Safety and Health Information Circular 9529 at 1. (MX-2).

The Assistant Secretary includes a condition for use of non-permissible electronic surveying equipment that states:

Immediately before using the non-permissible electronic surveying equipment in or inby the last open crosscut or in the return, [Canyon Fuel and Mountain Coal] shall ensure compliance with 30 C.F.R. § 75.403 by using a permissible coal dust explosibility meter (CDEM) or equivalent method to test the mixed coal dust in the immediate area where the electronic equipment is to be used.

The Assistant Secretary included this condition because of his concern for “the potential for explosive amounts of coal dust to become rapidly suspended.” *Rosebud* at 40. He continues “I am therefore requiring that before using non-permissible electronic surveying equipment in or inby the last open crosscut or in return air, Rosebud ensure its compliance with the requirements of 30 C.F.R. § 75.403 to maintain a minimum of 80 percent incombustible content of mixed dusts in the section consistent with the required measurements.” *Id.* The problem is that the CDEM does not do what the Assistant Secretary wants it to do. He discusses how before this device, getting the results of dust samples could take two or three weeks while the CDEM “allows real-time measurement of coal and rock dust explosibility.” *Id.* at 40-41. In essence, he wants the CDEM to replace the laboratory analysis. However, the product overview from the device Operations Manual makes it clear that it does not replace the laboratory analysis nor does it give a “measurement of coal and rock dust explosibility.”

The CDEM-1000 is not intended to be used as an analytical instrument. It is also not intended to replace the current MSHA laboratory low temperature ashing (LTA) analysis of coal mine dust samples for incombustible content. The instrument provides an indication of percent rock dust only and does not measure the total incombustible content of the coal dust mixture since it does not measure the inherent incombustible ash and moisture content of the mixture. MX-5 at 14 (page 6 of the Operations Manual (OM)).<sup>8</sup>

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<sup>8</sup> Contrary to my instructions in the Prehearing Order, these pages are not individually numbered. Therefore, in exhibit MX-5, in addition to identifying the number of the page had the exhibit

No expert testified about the CDEM. While there was some testimony about the CDEM during the hearing, no witness had experience using one in a mine. The record contains extensive documentation regarding the CDEM. I relied on that information to conclude that the CDEM was not designed or intended to be used for the purpose the Assistant Secretary imposes in his conditions.

As MSHA discussed in issuing the final rule on Maintenance of Incombustible Content of Rock Dust in Underground Coal Mines, 76 Fed.Reg. 35968, June 21, 2011:

The CDEM is not intended to replace the current MSHA laboratory analysis of coal mine dust samples for incombustible content, but to serve as a supplemental device for enhancing mine safety through improved rock dusting practices.

76 Fed.Reg at 35973.

I believe there is a role for a CDEM in coal mines, but it is not to analyze information instantaneously to make operate/shutdown decisions or for use in making violation determinations.<sup>9</sup>

The CDEM-1000 is intended to be used by mine operators, safety officials and regulators as a screening tool to help manage daily rock dusting operations and to help mitigate the explosion hazard potential by identifying inadequate rock dusting applications. The CDEM-1000 can also be used as an effective tool by mine operators to help determine a more efficient balance between coal dust and rock dust levels.

(MX-5 at 1).

NIOSH implies the CDEM is comparable to methane and other gas detectors (MX-4). A review of the documents in the record demonstrates that it is not. Various documents discuss “instantaneous results,” “instant feedback,” and “Instantaneous explosibility indication” (MX-2 at Executive Summary; MX-4; MX-5 at 1). A review of the literature in the record gives me the distinct impression that the use of these terms is “puffing” at best. If the CDEM was as simple to operate, and as accurate as methane detectors, my view would be different. However, the CDEM requires calibration before its first use and every 200 samples thereafter, it also requires calibration every time the rock dust changes. (MX-5 at 2.) More important, however, there is a multi-step process to get the results from the CDEM. This includes gathering, “cone and

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contained page numbers, I am identifying the page from the Operations Manual (OM) when citing to a page from the Operations Manual, when appropriate.

<sup>9</sup> It is worth noting that MSHA inspectors do not carry CDEMs with them when they inspect mines. Perhaps if MSHA had more confidence in the use of the CDEM in this spot inspection role, requiring the mine operators to use it would be more understandable.

cutting”, and drying the sample, entering the ambient methane level into the meter, cleaning the cup and lens, loading the sample into the cup through a funnel, pressing the sample cup onto the optical probe and holding firmly in place while the meter is testing the sample. Then and only then you obtain the “instantaneous results.” However, the operations manual also contains warnings that if the operator improperly collects, prepares or dries the sample, improperly measures or inputs the methane level, or fails to calibrate the CDEM “with the actual rock dust used” in the mine, the CDEM can give inaccurate results. (MX-5 at 11, OM at 4.)

For the reasons discussed above, I do not find that the requirement of testing with a CDEM prior to powering on the electronic surveying equipment improves the level of safety of the miners. In fact, I find that the requirement to test the coal mine dust with the CDEM prior to surveying will result in a diminution of safety to the miners because it requires their presence underground for a measurably longer period of time, subjecting them to the hazards of the coal mine, including equipment moving through the passageways. Therefore, I do not include a condition requiring the survey crew to use a CDEM to test coal mine dust “immediately before using the non-permissible electronic surveying equipment in or inby the last open crosscut or in the return.”

However, because coal dust is a hazard that can be minimized by rock-dusting, prior to use of the non-permissible electronic surveying equipment, the survey crew must check that the area in which the equipment is being used has been rock-dusted. Therefore, I include the following conditions in the order:

Prior to setting up and energizing non-permissible electronic surveying equipment in or inby the last open crosscut, within 150 feet of pillar workings, or in the return, the surveyor(s) shall conduct a visual examination of the immediate area for evidence that the areas appear to be sufficiently rock-dusted and for the presence of accumulated float coal dust. If the rock-dusting appears insufficient or the presence of accumulated coal dust is observed, the equipment may not be energized until sufficient rock dust has been applied and/or the accumulations of coal dust have been cleaned-up. If non-permissible electronic surveying equipment is to be used in an unrock-dusted area within 40 feet of a working face where a continuous miner is used to extract coal, the area is to be rock-dusted prior to energizing the electronic surveying equipment.

All areas to be surveyed must be pre-shifted according to 30 C.F.R. § 75.360 prior to surveying. If the area was not pre-shifted, a supplemental examination according to 30 C.F.R. § 75.361 must be performed before any non-certified person enters the area. If the area has been examined according to 30 C.F.R. § 75.360 or 30 C.F.R. § 75.361, additional examination is not required.

## **VII. OTHER CONDITIONS**

There was little discussion on the following conditions during the hearing. I have looked at these conditions in light of the two-step *Cyprus Emerald* test and find that these conditions “promote the same safety goals as the original standard with no less than the same degree of success.” Furthermore, with the exception of minor economic impact resulting from these conditions, I find no adverse effects from these conditions. Therefore, the conditions also meet the second step of the *Cyprus Emerald* test which is that “the benefits of modification [must] outweigh or neutralize any potential adverse effects” when viewed in terms of overall miner safety. I adopt the following conditions, although I have made occasional wording modifications from the proposals presented by the parties.

### **a. Training**

Canyon Fuel and MSHA agree that there is a need to train the surveying crews in the specifics of the terms and conditions of this decision and order. The proposals of the parties are essentially the same. Because I do not find the requirement that the survey crews receive training on the terms and conditions of this order prior to using non-permissible surveying equipment as allowed by this order to be unreasonable, I include this condition in the order. I also find the requirement to complete the MSHA Certificate of Training (Form 5000-23) beneficial in that it memorializes the training. The condition on training is as follows:

Personnel engaged in the use of surveying equipment shall be properly trained to recognize the hazards and limitations associated with the use of surveying equipment in areas where methane could be present.

All members of the surveying crew shall receive specific training on the terms and conditions of this decision and order before using non-permissible electronic equipment in or inby the last open crosscut, in the return, or within 150 feet of the longwall face or pillar workings. A record of the training shall be kept with the other training records.

Within 60 days after the Proposed Decision and Order becomes final, Canyon Fuel shall submit proposed revisions for its approved 30 C.F.R. Part 48 training plan to the Coal Mine Safety and Health District Manager. These proposed revisions shall specify initial and refresher training regarding the terms and conditions stated in this Decision and Order. When training is conducted on the terms and conditions in this decision and order, an MSHA Certificate of Training (Form 5000-23) shall be completed. Comments shall be included on the Certificate of Training indicating that it was surveyor training.

### **b. Age of the equipment**

During the hearing Canyon Fuel stated that it was “not going to make a big issue” out of the requirement that equipment be retired and replaced on a schedule. Because I understand that older equipment has more potential to malfunction and seals are more likely to deteriorate over

time, I find it appropriate to include the replacement requirement as a condition for the use of non-permissible electronic surveying equipment.

Canyon Fuel shall replace or retire from service any electronic surveying instrument that was acquired prior to December 31, 2001 within one year of this Order becoming final. Canyon Fuel shall replace or retire from service any electronic surveying instrument that was acquired between January 1, 2002 and December 31, 2007 within two years of this Order becoming final. Within three years of the date that this Order becomes final, Canyon Fuel shall replace or retire from service any theodolite that was acquired more than five years prior to the date that this Order became final or any total station or the other electronic surveying equipment identified in this order acquired more than ten years prior to the day that this Order became final. After five years, Canyon Fuel will maintain a cycle of purchasing new electronic surveying equipment whereby theodolites will be no older than five years from date of manufacture and total stations and other electronic surveying equipment will be no older than 10 years from date of manufacture.

#### **c. Contractors**

Canyon Fuel did not raise any objections to mandating the same conditions apply to contractors working in a mine. I find such a condition reasonable and include it in the order.

Canyon Fuel is responsible for seeing that all surveying contractors hired by Canyon Fuel are using relatively new electronic equipment, i.e. theodolites no older than five years from date of manufacture and total stations no older than 10 years of manufacture. The conditions of use in this decision and order shall apply to all non-permissible electronic surveying equipment used in or inby the last open crosscut, in a return, or within 150 feet of pillar workings or longwall faces regardless of whether the equipment is used by Canyon Fuel or by an independent contractor.

#### **d. Posting the Decision**

Finally, I agree that the Decision and Order must be posted so that all interested employees have the opportunity to read it.

Canyon Fuel shall post Decision and Order in unobstructed locations on the bulletin boards and/or in other conspicuous places where notices to miners are ordinarily posted, at all the mines for which this Decision and Order applies, for a period of not less than 60 consecutive days.

### **ORDER**

For the reasons discussed above, the Petition for modification is GRANTED. Canyon Fuel and Mountain Coal may use non-permissible electronic surveying equipment in or inby the

last open crosscut, within 150 feet of pillar workings or longwall face, or in the return subject to the following conditions:

1. Non-permissible electronic surveying equipment shall only be used until equivalent permissible electronic surveying equipment is available. The equipment allowed under this order is low voltage or battery-powered non-permissible surveying equipment, portable battery operated miner transits, total station surveying equipment, electronic distance meters and electronic data collectors. All non-permissible electronic surveying equipment shall have an IP 66 or higher rating.

2. Canyon Fuel will maintain a logbook for electronic surveying equipment. The logbooks will be kept in the mine office where the equipment is located. The log book will contain the date of manufacture and/or purchase of each particular piece of electronic surveying equipment. The logbook shall be made available to MSHA upon request.

3. All non-permissible electronic surveying equipment to be used in or inby the last open crosscut, within 150 feet of pillar workings or longwall face, or in the return shall be examined by the person to operate the equipment prior to taking the equipment underground to ensure the equipment is being maintained in a safe operating condition. These checks shall include:

- i. check the instrument for any physical damage and the integrity of the case;
- ii. remove the battery and inspect for corrosion;
- iii. inspect the contact points to ensure a secure connection to the battery;
- iv. reinsert the battery and power up and shut down to ensure proper connections; and
- v. check the battery compartment cover or battery attachment to ensure that it is securely fastened.

The results of this inspection will be recorded in the logbook.

4. The equipment shall be examined at least weekly by a qualified person as defined in 30 C.F.R. § 75.153; the examination results shall be recorded weekly in the equipment's log book. Inspection entries in the logbook may be expunged after one year.

5. Canyon Fuel is to ensure that all non-permissible electronic surveying equipment is serviced according to the manufacturer's recommendations. Dates of service will be recorded in the equipment's log book and shall include a description of the work performed.

6. The non-permissible surveying equipment, that will be used in or inby the last open crosscut, within 150 feet of pillar workings or the longwall face or in the return, shall not be put into service until MSHA has initially inspected the equipment and determined that it is in compliance with all the terms and conditions of this order.

7. Non-permissible surveying equipment shall not be used if methane is detected in concentrations at or above 1.0 percent methane. When 1.0 percent or more of methane is detected while the non-permissible surveying equipment is being used, the equipment shall be de-energized immediately and the non-permissible electronic equipment withdrawn outby the

last open crosscut or further than 150 feet from pillar workings or longwall faces, or out of the return. Prior to returning inby the last open crosscut, within 150 feet from pillar workings or longwall face, or into the return all requirements of 30 C.F.R. § 75.323 must be complied with.

8. As an additional safety check, prior to setting up and energizing non-permissible electronic surveying equipment in or inby the last open crosscut, within 150 feet of pillar workings, or in the return, the surveyor(s) shall conduct a visual examination of the immediate area for evidence that the areas appear to be sufficiently rock-dusted and for the presence of accumulated float coal dust. If the rock-dusting appears insufficient or the presence of accumulated coal dust is observed, the equipment may not be energized until sufficient rock dust has been applied and/or the accumulations of coal dust have been cleaned-up. If non-permissible electronic surveying equipment is to be used in an unrock-dusted area within 40 feet of a working face where a continuous miner is used to extract coal, the area is to be rock-dusted prior to energizing the electronic surveying equipment.

9. All hand-held methane detectors shall be MSHA-approved and maintained in permissible and proper operating condition as defined by 30 C.F.R. § 75.320. All methane detectors must provide visual and audible warnings when methane is detected at or above 1.0 percent.

10. Prior to energizing any of the non-permissible surveying equipment in or inby the last open crosscut or within 150 feet of pillar workings or longwall faces, or in the return, methane tests must be made no more than eight inches from the roof or floor at the location of the equipment.

11. All areas to be surveyed must be pre-shifted according to 30 C.F.R. § 75.360 prior to surveying. If the area was not pre-shifted, a supplemental examination according to 30 C.F.R. § 75.361 must be performed before any non-certified person enters the area. If the area has been examined according to 30 C.F.R. § 75.360 or 30 C.F.R. § 75.361, additional examination is not required.

12. A qualified person as defined in existing 30 C.F.R. § 75.151 shall continuously monitor for methane immediately before and during the use of non-permissible surveying equipment in or inby the last open crosscut, within 150 feet of pillar workings or longwall faces or in the return. A second person in the surveying crew, if there are two people in the crew, must also continuously monitor for methane. That person must either be a qualified person as defined in 30 C.F.R. § 75.151 or be in the process of being trained to be a qualified person but has yet to “make such tests for a period of 6 months” as required by 30 C.F.R. § 75.151. Upon completion of the 6 month training period the second person on the survey crew must become qualified in order to continue on the survey crew. If the surveying crew consists of one person, rather than two, such person shall monitor for methane with two separate devices.

13. Batteries contained in the surveying equipment must be “changed out” or “charged” in intake air outby the last open crosscut, out of the return and more than 150 feet away from pillar workings or the longwall face. Replacement batteries for the electronic surveying equipment shall be carried only in the compartment provided for a spare battery in the electronic equipment carrying case. On each entry into the mine, all batteries for the electronic surveying equipment must be fully charged.

14. When using non-permissible electronic surveying equipment inby the last open crosscut, within 150 feet of the pillar workings or longwall face, or in the return, the surveyor must confirm by measurement or by inquiry of the person in charge of the section, that the air quantity on the section, on that shift, in the last open crosscut or coming to the longwall face is the quantity that is required by the mine's ventilation plan.

15. Non-permissible electronic surveying equipment may not be used along the longwall face during operations of the longwall shearer or inby the last open crosscut in the entry where the continuous miner is actively extracting coal from the face.

16. Personnel engaged in the use of surveying equipment shall be properly trained to recognize the hazards and limitations associated with the use of surveying equipment in areas where methane could be present.

17. All members of the surveying crew shall receive specific training on the terms and conditions of this decision and order before using non-permissible electronic equipment in or inby the last open crosscut, in the return, or within 150 feet of the longwall face or pillar workings. A record of the training shall be kept with the other training records.

18. Within 60 days after the Proposed Decision and Order becomes final, Canyon Fuel shall submit proposed revisions for its approved 30 C.F.R. Part 48 training plan to the Coal Mine Safety and Health District Manager. These proposed revisions shall specify initial and refresher training regarding the terms and conditions stated in this Decision and Order. When training is conducted on the terms and conditions in this decision and order, an MSHA Certificate of Training (Form 5000-23) shall be completed. Comments shall be included on the Certificate of Training indicating that it was surveyor training.

19. Canyon Fuel shall replace or retire from service any electronic surveying instrument that was acquired prior to December 31, 2001 within one year of this Order becoming final. Canyon Fuel shall replace or retire from service any electronic surveying instrument that was acquired between January 1, 2002 and December 31, 2007 within two years of this Order becoming final. Within three years of the date that this Order becomes final, Canyon Fuel shall replace or retire from service any theodolite that was acquired more than five years prior to the date that this Order became final or any total station or the other electronic surveying equipment identified in this order acquired more than ten years prior to the day that this Order became final. After five years, Canyon Fuel will maintain a cycle of purchasing new electronic surveying equipment whereby theodolites will be no older than five years from date of manufacture and total stations and other electronic surveying equipment will be no older than 10 years from date of manufacture.

20. Canyon Fuel is responsible for seeing that all surveying contractors hired by Canyon Fuel are using relatively new electronic equipment, i.e. theodolites no older than five years from date of manufacture and total stations and other electronic surveying equipment no older than 10 years of manufacture. The conditions of use in this decision and order shall apply to all non-permissible electronic surveying equipment used in or inby the last open crosscut, in a return, or

within 150 feet of pillar workings or longwall faces regardless of whether the equipment is used by Canyon Fuel or by an independent contractor.

21. Canyon Fuel shall post Decision and Order in unobstructed locations on the bulletin boards and/or in other conspicuous places where notices to miners are ordinarily posted, at all the mines for which this Decision and Order applies, for a period of not less than 60 consecutive days.

**SO ORDERED.**

**STEPHEN M. REILLY**  
Administrative Law Judge

**NOTICE OF APPEAL RIGHTS:** To appeal, you must file a Notice of Appeal ("Notice") with the Assistant Secretary of Labor for Mine Safety and Health within thirty (30) days after service of the "Initial Decision" of the Administrative Law Judge. *See* 30 C.F.R. § 44.33(a). The Assistant Secretary's address is: Assistant Secretary for Mine Safety and Health, U.S. Department of Labor, Room 2322 TT#2, 200 Constitution Avenue, NW, Washington, DC 20210. Once an appeal is filed, all inquiries and correspondence should be directed to the Assistant Secretary.

At the time you file the Notice with the Assistant Secretary, you must serve it on all parties. *See* 30 C.F.R. §§ 44.6 and 44.33(a). If a party is represented by an attorney, then service must be made on the attorney. *See* 30 C.F.R. § 44.6(c).

If no Notice is timely filed, then the administrative law judge's "Initial Decision" becomes the final decision of the Secretary of Labor. *See* 30 C.F.R. § 44.32(a).