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SOL (MSHA) V. FMC WYOMING  
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Federal Mine Safety and Health Review Commission  
Office of Administrative Law Judges

SECRETARY OF LABOR,  
MINE SAFETY AND HEALTH  
ADMINISTRATION (MSHA),  
PETITIONER

CIVIL PENALTY PROCEEDING

Docket No. WEST 91-185-M  
A.C. No. 48-00152-05595

v.

FMC Trona

FMC WYOMING CORPORATION,  
RESPONDENT

DECISION

Appearances: Kristi Floyd, Esq., Office of the Solicitor, U.S.  
Department of Labor, Denver, Colorado,  
for Petitioner;  
Henry Chajet, Esq., James G. Zissler, Esq.,  
Washington, D.C., for Respondent.

Before: Judge Morris

The Secretary of Labor, on behalf of the Mine Safety and Health Administration ("MSHA"), charges FMC Wyoming Corporation ("FMC") with violating a safety regulation promulgated under the Federal Mine Safety and Health Act, 30 U.S.C. 801 et seq., (the "Act").

A hearing on the merits was held in Salt Lake City, Utah on March 4-5, 1992.

The parties filed post-trial briefs.

Citation No. 3633617 states:

There was a gap in excess of .004 inch in the main power inlet master control box top cover plate. Arcing would occur inside this box due to the switching on and off of the controls. Cover plates must be maintained in permissible condition to help prevent methane gas ignition/explosions. The violation occurred in number 2 room in a Joy miner panel.

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The regulation allegedly violated, 30 C.F.R. 57.22305 provides:

Equipment used in or beyond the last open crosscut and equipment used in areas where methane may enter the air current, such as pillar recovery workings, longwall faces and shortwall faces, shall be approved by MSHA under the applicable requirements of 30 CFR parts 18 through 36. Equipment shall not be operated in atmospheres containing 1.0% or more methane.

30 C.F.R. 18.31(a)(6) provides a maximum permissible clearance of .004 inch for the plane flange joint in question.

#### Issues

The issues are whether a violation occurred. If affirmative, then was the violation significant and substantial and due to the unwarrantable failure of FMC. Finally, if a violation occurred, what penalty is appropriate.

#### Summary of the Evidence

WAYNE DOUGLAS PILLING, a person experienced in safety and health, has been a federal mine inspector for more than 15 years. (Tr. 27-31).

On November 19, 1990, he wrote Citation No. 3633617 for a permissibility violation on a Joy Continuous Miner ("CM"). In particular, he cited the cable entrance box on top of the master control box in the CM operator's cabin. The continuous miner was in-by the last open crosscut.

When it is in operation, the continuous miner is located at the face. When the inspector arrived, the continuous miner had just backed out of a previous cut and was ready to start cutting a new drift. (Tr. 32, 33, 79).

The control box houses approximately nine switches which operate the cutter heads, tram motors, conveyor and main controls. These switches all produce incentive arcing which is capable of igniting methane. (Tr. 33, Ex. G-1). The top portion measures 6 by 17 inches. The enclosure itself is approximately 4200 cubic inches. (Tr. 34).

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Mr. Pilling identified the gap with an arrow on Exhibit G-1. (Tr. 37, 38).

The citation alleged FMC violated 57.22305 as well as 30 C.F.R. 18.31(a)(6) which was applicable. (Tr. 38).

The volume of the box was greater than 124 cubic inches. (Tr. 39). The allowable gap on a box of this type is .004 of an inch.

Exhibit G-2, an MSHA publication on permissibility, illustrates the plane flange joint. (Tr. 43). Mr. Pilling drew a circle on the exhibit showing where he inserted his feeler gauge. (FOOTNOTE 1) The gap accepted a .005 feeler gauge for 1.5 to 2 inches. Mr. Pilling estimated the gap was .010 of an inch. (Tr. 45, 46). He further estimated the gap was several inches in length. (Tr. 47).

Mr. Pilling explained that a permitted gap will cool any flames before they reach the outside atmosphere. Ventilation is needed to cool the heat from electrical equipment and also to dry up the moisture. (Tr. 47).

Inspector Pilling issued the citation as a significant and substantial ("S&S") violation. This is a gassy mine and the percentage of methane collected on October 31, 1990, was .190, .047, .007 and .127. (Tr. 52-54, Ex. G-3). The total methane liberated on that date was 1,539,118 cubic feet. It is considered significant if a mine liberates over one million cubic feet in 24 hours. Such an amount triggers a five day gas check.

The other main factors included the numerous ignition sources inside the master control box. The throwing of the switches creates an incentive arcing inside of the control box which can ignite methane. Mr. Pilling drew an "A" over the switches on the control box panel. (Tr. 55, 56, 65).

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The gap was on the top box but the arcing occurred in the bottom box. (Tr. 56). This is because there was an opening 5.5 inches by 11 inches between the 11 box and the master control box.(FOOTNOTE 2) (Tr. 57). In sum, if an ignition occurred in the master cable entrance box, it would propagate up through the small cable entrance box that was cited. In the inspector's opinion, it was reasonably likely that a methane gas ignition or explosion could occur. (Tr. 58, 65).

A methane readout at the time of the inspection showed 0.0 percent concentration. (Tr. 58). However, the inspector didn't consider this as a factor since the ventilation system was working. Further, the CM was idle and not cutting into undeveloped ground. The ventilation was rendering harmless any methane that might have been present. (Tr. 58, 59). The CM was equipped with a methanometer which warns the miner operator at a 1 percent methane concentration. At 1.5 percent concentration, it will deenergize the machine. (Tr. 60).

On occasions before 1990, FMC was cited for violations involving its methane monitors on the continuous miners. (Tr. 61, Ex. G-8, G-9, G-10). On these occasions FMC's two sensor units were plugged with trona. There was also fire equipment in the area but this was not a factor in issuing the citations as S&S. (Tr. 64).

If the inspector had detected an explosive level of methane, he would have written an imminent danger order. (Tr. 65).

Exhibit G-4, a document dated January 27, 1986 from MSHA's Green River, Wyoming office involved a methane gas ignition at the FMC Trona Mine at their longwall panel. (Tr. 70, 71). The ignition occurred while the company was repairing the longwall shear. They were between the chalk line and the face of the longwall section at zero level. As they were welding on the wig wheel, sparks jumped from the arc weld and ignited a small raider of methane. The ventilation system was running at the time. At the time 24,000 and 40,000 CFM were being coursed through the chalk line and face area. There was a methane monitor at the headgate and one at the tailgate about 400 feet away. (Tr. 73).

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Miner representative Erspamer told Inspector Pilling that the highest percentage of methane gas he had found was 10 percent. Mr. Thomas, a management representative with the inspection team, then told Mr. Erspamer not to talk to the inspector. (Tr. 87).

When Mr. Thomas was told by the inspector that the citation would be S&S, he replied that "This is the one we've been waiting for." (Tr. 88).

MICHAEL J. ERSPAMER, an underground miner for FMC, runs a 913 front-end loader. Mr. Erspamer has held various jobs including fire boss. (Tr. 173, 175). He described his operation of the continuous miner. (Tr. 176-180). When he was roof bolting, Mr. Erspamer had struck pockets of methane in the roof. When the pressure is released, the gas gushes out into the atmosphere, depending on the size of the pocket. (Tr. 181). When roof bolting, he would strike such pockets daily. (Tr. 182). Methane is in the oil shale above and below the trona. It enters the mine atmosphere through cracks in the floor, roof or through gas holes drilled in the roof. If the trona is a foot thick, the roof is good and it acts as a barrier to the oil shale. (Tr. 183).

FMC has eight ventilation shafts. (Tr. 184). In his 16 years at FMC Mr. Erspamer has detected methane at 1 percent "probably hundreds of times." He has detected with the same concentrations, methane between 1 percent and 1 percent. Different concentrations can be found at different locations. (Tr. 188). At FMC methane is continually liberated into the atmosphere.

FMC tries to maintain two production shifts to each maintenance shift. (Tr. 189). The preventive maintenance crew does the permissibility checks. (Tr. 193).

Mr. Erspamer accompanied Mr. Pilling on November 19, 1990. He told the inspector he had gotten methane readings as high as 10 percent. (Tr. 195). Generally, these would be in a working block with a fan in the room (Tr. 196). Some of these concentrations were in continuous miner sections. When he would find such concentrations of methane, Mr. Erspamer would restore the ventilation. He would also make daily reports to be countersigned by the shaft superintendent. (Tr. 197). Mr. Erspamer agreed you can feel the change in conditions if the face fan shuts down. (Tr. 200).

Methane is primarily contained in the oil shale above the trona. (Tr. 202). On November 19, 1990, the ventilation system

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was functioning. The system reduces the hazards of methane. The foreman uses his methane monitor on a regular basis. (Tr. 204, 205).

On November 19, 1990, Mr. Erspamer saw no standing water nor did he detect the smell of ammonia which would indicate methane was present. (Tr. 206).

When observing at the monitor on the mining machine you can detect changes in amounts of the methane levels. (Tr. 207). Everyone at FMC knows the ventilation must be maintained. (Tr. 208).

MERLE VENTERS, an MSHA electrical specialist is experienced in mining as an electrical maintenance permissibility expert. (Tr. 245-269).

The 12-C Joy described in the citation is approved by MSHA. The control box panel starts and stops the motors. Any open switches may deteriorate and allow an unintentional arc. The witness explained how arcing occurred and the types of hazards it creates. (Tr. 270, 271). The requirement that the gaps be maintained at .004 of an inch or less has been required since the 1970's. (Tr. 271, 274). It is not difficult to find such an opening. (Tr. 272). MSHA requires the .004 of an inch to prevent flame from escaping. (Tr. 273). A gap of less than .004 of an inch will not allow flame to escape to a hazardous level. If the gap is greater than .004, it will allow the flame to escape to a hazardous level.

Permissibility violations occur because the equipment is improperly assembled, was struck by a roof fall or collided with another machine. (Tr. 275, 276). Explosions have occurred because a plane joint was closed. (Tr. 277, 278).

Mr. Venters agreed that ventilating the area keeps fuel away from any arc. (Tr. 283). Coal mines that are gassy have small ignitions fairly frequently. (Tr. 284). However, Mr. Venters did not know of any ignitions in trona mines nor was he aware of any explosions or ignitions at the FMC Trona Mine. (Tr. 284, 285). A high quantity of methane does not, at all times, translate into a high percentage of methane. (Tr. 286). Boxes on the other side of the CM have the same ignition hazards as the box that was cited. There is no methane in the trona itself. (Tr. 298). It would be important to know where concentrations of methane are located in a mine. (Tr. 302, 303).

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Additional ventilation increases the dilution effect on methane and reduces the hazard. (Tr. 304). Protection against methane hazards include permissibility, good maintenance and ventilation.

The testimony of MSHA's witnesses Jerry Palmer Davidson, Jerry Lee Fuller and Ken Porter is considered, infra.

#### FMC's Evidence

JOHN HEAD, a mining engineer, is experienced in methane hazards and safety in gassy mines. (Tr. 398-407, Ex. R-4).

In January (1992) Mr. Head visited the FMC Mine to gather information. (Tr. 408-412, 427, 428).

FMC's mine is approximately six miles east/west and about five miles north/south. (Tr. 413).

In 1990 there were ten operating CM sections and two CM sections on standby in the longwall sections. (Tr. 413).

Mr. Head estimated FMC has over 100 pieces of permissible equipment. (Tr. 415). He examined a Joy miner identical to No. 8 and made a detailed examination of a typical CM section. The No. 14 panel where the contested citation was issued could not be entered as it had been sealed and was not maintained. (Tr. 416). He also took bottle samples of air. FMC preshift inspections for gas checks and the ventilation must be in place before the crew begins work. (Tr. 418). The miners take steps to reduce methane concentrations below 1 percent whenever that level is found.

In CM sections, the miner operator stays at least a foot from the top of the trona bed. (Tr. 418).

Mr. Head described the method and location where he took 10 bottle samples. (Tr. 419-421). The results he obtained were similar to MSHA's methane readings. (Tr. 420, 423). Bottle samples provide accuracy down to 1 or 2 parts per million. (Tr. 223). The results indicated readings as low as 5 PPM and as high as 25 PPM (10 parts per million is 0.0010). (Tr. 424-427).

Mr. Head found the travel roadways were in excellent shape and there was no significant cracking or roof movement. (Tr. 428). The witness further described in detail FMC's ventilation system. The three primary intake air shafts deliver slightly under 1,500,000 cubic feet of intake air, about 50 percent more



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air than required. (Tr. 431-435, 436, 439). The distribution of air throughout the system is very effective. (Tr. 439).

Drill holes close to the southern end of No. 14 panel were shown in a stratigraphic representation. (Tr. 440, 445). The representation shows the trona seam to be about 15.5 feet thick. (Tr. 442).

The shale above the trona is the area from which methane gas would be liberated if the roof is disturbed. (Tr. 444, 445). The trona seam being mined is about 13 or 14 feet thick. After being mined 5.5 feet or so of trona would remain. (Tr. 445). The thicker the trona the more stable the drifts or crosscuts. (Tr. 446). Panel 14 had a particularly good roof. (Tr. 447). After November 19, it would take an additional six or seven months to complete mining panel 14.

Mr. Head described the ventilation system for panel 14 on November 19 in relation to where Joy CM No. 8 was located. (Tr. 452).

Methane is contained in the shale members above and below the trona. Only trace amounts of methane are contained in the crystalline structure of the trona. (Tr. 455).

On his visit to the plant, Mr. Head inspected the Joy No. 8 CM. The cover plates were removed to inspect and photograph the internal parts. The witness described his findings. There was no evidence of arcing. (Tr. 456, 462).

A concentration of methane between 5 and 15 percent is hazardous and can explode. The volume of methane is almost irrelevant in terms of assessing the hazard. The ambient air in Wyoming contains 2 PPM methane or, .0002 percent. (Tr. 463).

There was no evidence in the stratigraphy that there was any degree of gas pressure exerted in the roof strata. (Tr. 464). The permissibility gap of .004 of an inch might be the thickness of a sheet of paper; .010 might be the thickness of several sheets of paper. (Tr. 466, 467).

Mr. Head described MSHA's testing procedures for boxes. (Tr. 468-470). Further, he described the cycling of temperature. (Tr. 470-472). In addition, he compared the heating and cooling cycles to a home with windows, a bonfire outside the home and the smoke produced from the bonfire. (Tr. 473-475).

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Ventilation through the main circuit and in the face dilutes the methane to harmless concentrations. (Tr. 475).

Monitoring devices included hand-held methanometers used for preshift inspections and continuous reading methane sensors on the continuous miners. (Tr. 476).

FMC has numerous elements in the training and safety policies of the mine to control methane hazards. (Tr. 476).

Interviews with the mine operator and the foreman on duty on November 19, 1990 confirmed the FMC policies were in place. (Tr. 476-478). Documents confirmed the preshift inspections showing zero methane. (Tr. 479, 480, Ex. R-5).

The monitors on the Joy No. 8 CM warn the operator at a 1 percent methane concentration and shut down the power to the machine at 1.5 percent. (Tr. 477).

The maintenance department installed a new methane monitor on No. 8 Joy CM on November 8th. The unit was recalibrated on November 15, 1990. (Tr. 477). FMC has one maintenance shift for each two production shifts. (Tr. 477).

FMC has been in operation for more than 40 years with no explosions of methane nor any injuries or fatalities resulted from explosions. (Tr. 481).

Mr. Head concluded that he would expect to find low concentrations of methane in No. 14 panel. The history indicates the methane concentration is almost always 0.0 percent and never more than 1 percent. (Tr. 481).

Elevated levels of methane occur only in other areas of the mine where specific activities occur such as cutting into the shale for an overpass or caving in a longwall section (these activities were not taking place in the 14 panel). (Tr. 481, 482).

The only other time when there had been a significant concentration of methane reported at the mine was after an extended shutdown of the ventilation system either when a panel's ventilation was shut down or after a holiday. This did not occur at 423 West, section 14 panel. In this panel there was a thick roof beam, no ground control problems, no obvious cracks and no bellying of the roof as a result of gas pressure. (Tr. 482, 483).

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There was about 26,000 CFM in the panel itself. Vent tubes and auxiliary fans were developing 5,000 to 8,000 CFM in the face. (Tr. 483).

In arriving at his conclusion Mr. Head relied on the specific characteristics of the fans in other working places. (Tr. 483).

The FMC preshift for panel 14 indicated 0.0 percent methane. Further, the inspection team found no methane nor did the CM monitors. In addition, an explosive concentration of methane could not enter the control box. (Tr. 484).

FMC's fire control policy was also considered by Mr. Head in reaching his opinion about the operator's successful program. (Tr. 485).

In Mr. Head's opinion the likelihood of a methane ignition arising from the conditions described in the citation (if mining had continued) was so unlikely as to approach zero probability. (Tr. 487).

Mr. Head agrees methane in the explosive range of 5 to 15 percent is potentially hazardous. (Tr. 491). The witness was examined as to his experience at the Morton Salt Company and the Morton Salt Mines. (Tr. 492-498).

Some roof falls have occurred at FMC. (Tr. 501).

A limited ignition could occur. (Tr. 503). However, it is unlikely that methane could be liberated in the explosive range in a CM section in the mine. (Tr. 504).

The ten methane bottle samples taken at various places including within the collar of a 15-foot vertical probe hole ranged from .0002 to .2910 (within the hole). All of the samples were below the explosive range. (Tr. 509-512).

In Mr. Head's opinion, in panel 14 the concentration in the return airway would approach .004 percent. He would be very surprised if it would be .1 or .15 percent. (Tr. 513, 514). The concentration at the face, because of the ventilation fans, would be zero. (Tr. 514).

The uncontroverted testimony of MSHA's Inspector Wayne Pilling shows: He inspected FMC's No. 8 Joy Continuous Miner inby the last open crosscut. He found the plane flange joint on the top cover plate of the master control box violated the permissibility requirement. There was a gap in excess of .004 inches. The volume of the control box enclosure containing the gap was approximately 4200 cubic inches.

FMC contends the Secretary did not meet her burden of proof because the inspector did not measure the gap to determine its size. (Tr. 127). Further, the feeler gauge had not been calibrated or measured. (Tr. 126). In sum, FMC argues the inspector failed to conduct the necessary measurements to establish the gauge was actually .005. Specifically, it so argued the Secretary failed to meet her burden of proof that an excessive gap existed. In addition, it is argued the inspector's estimate is only a guess. Finally, FMC attacks the promulgation of the regulation.

FMC has misconstrued the evidence and the scope of the regulation. The Secretary is not required to prove the gap was .005 (or greater). Rather, a violation was established when the gap accepted a .005 feeler gauge for a distance of 1.5 to 2 inches.

FMC's argument that Section 57.22305 does not require that the permissibility gaps be "maintained" is rejected. Section 57.22305 specifically adopts 30 C.F.R. Parts 18 through 36. The referenced section mandates a maximum permissible clearance of .004 for the plane flange joint in question.

The operator argues the regulation is distinctly different from the coal standard [ 75.506, 506-1(a)] and contends it should not be extrapolated to include a requirement not expressly contained therein nor promulgated through the rule making process. In sum, the operator argues that the lack of a requirement for a permissibility check in metal/nonmetal mines confirms a different intent for the standards applicable in this case.

I agree that the requirements of the coal and the metal/nonmetal regulations are different. However, the regulation here, 57.22305 must be read in conjunction with 57.22001. The latter provides in part that "(m)ines shall operate in accordance with the applicable standards in this subpart to protect persons against the hazards of methane gas . . . ." In sum, permissibility compliance is required by the Secretary's regulations.

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The regulations involved here were duly published in the Federal Register, FMC has failed to cite any authority or to allege in what manner the Secretary's actions conflict with Section 101 of the Mine Act, 30 U.S.C. 811.

On the basis of the testimony of Inspector Pilling, I conclude that FMC violated 30 C.F.R. 57.22305.

Issue: Was the violation properly classified as Significant and Substantial

Inspector Pilling expressed the opinion that the violation at the FMC Mine was S&S. John Head, testifying for FMC, expressed a contrary view.

Before reviewing the credibility issues, it is appropriate to consider the applicable case law:

A "significant and substantial" violation is described in Section 104(d)(1) of the Mine Act as a violation "of such nature as could significantly and substantially contribute to the cause and effect of a coal or other mine safety or health hazard." A violation is properly designated significant and substantial "if, based upon the particular facts surrounding the violation there exists a reasonable likelihood that the hazard contributed to will result in an injury or illness of a reasonably serious nature." Cement Division, National Gypsum Co., 3 FMSHRC 822, 825 (April 1981).

In Mathies Coal Co., 6 FMSHRC 1, 3-4 (January 1984), the Commission explained its interpretation of the term "significant and substantial" as follows:

In order to establish that a violation of a mandatory safety standard is significant and substantial under National Gypsum the Secretary of Labor must prove: (1) the underlying violation of a mandatory safety standard; (2) a discrete safety hazard--that is, a measure of danger to safety--contributed to by the violation; (3) a reasonable likelihood that the hazard contributed to will result in an injury; and (4) a reasonable likelihood that the injury in question will be of a reasonably serious nature.

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In United States Steel Mining Company, Inc., 7 FMSHRC 1125, 1129, the Commission stated further as follows:

We have explained further that the third element of the Mathies formula "requires that the Secretary establish a reasonable likelihood that the hazard contributed to will result in an event in which there is an injury." U.S. Steel Mining Co., 6 FMSHRC 1834, 1836 (August 1984). We have emphasized that, in accordance with the language of section 104(d)(1), it is the contribution of a violation to the cause and effect of a hazard that must be significant and substantial. U.S. Steel Mining Company, Inc., 6 FMSHRC 1866, 1868 (August 1984), U.S. Steel Mining Company, Inc., 6 FMSHRC 1573, 1574-75 (July 1984).

Texasgulf, Inc., 10 FMSHRC 498 (1988) is particularly informative since it involves a trona mine and the issue of whether the violation should be designated as S&S.

Inspector Pilling's views, summarized in greater detail above, are based on several critical facts:

The FMC Mine liberates over 1,000,000 cubic feet of methane in 24 hours. As such, it is a gassy mine subject to heightened inspections under Section 103(i). The CM, operating in virgin territory, has nine control switches capable of incentive arcing. Such arcing can ignite methane.

In January 1986, a methane gas ignition occurred at FMC's longwall panel. Inspector Pilling believed it was reasonably likely that a methane gas ignition or explosion could occur in the mine.

On the S&S issue, specifically as to the ventilation capability, I credit the testimony of FMC's witness John Head. His testimony, summarized above, principally focuses on the ventilation at the FMC plant. To a large degree, as noted, Mr. Head's testimony is confirmed by Inspector Pilling's testimony. Mr. Head found FMC delivers 50 percent more air than required by law. He also took 10 bottle samples for methane. The readings were as low as 5 PPM and as high as 25 PPM.

Although panel 14 had been sealed, Mr. Head calculated the ventilation in the panel.

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Basically, the ventilation diluted the methane to harmless concentrations.

FMC documents indicated there was "zero" methane at the time the citation was issued. Further, in over 40 years of operation, FMC has had no methane explosions.

In the No. 14 panel methane is almost always 0.0 percent and never more than 1 percent.

Based on Mr. Head's testimony the third element of the Mathies formulation was not established. In sum, as the Commission has stated, the formulation "requires that the Secretary establish a reasonable likelihood that the hazard contributed to will result in an event in which there is an injury." U.S. Steel Mining Co., supra. We have emphasized that, in accordance with the language of Section 104(d)(1), 30 U.S.C. 814(d)(1), it is the contribution of a violation to the cause and effect of a hazard that must be significant and substantial. Id. In addition, the evaluation of reasonable likelihood should be made in terms of "continued normal mining operations." Texasgulf, Inc., supra, 10 FMSHRC at 500.

In order for ignitions or explosions to occur, there must be a confluence of factors, including a sufficient amount of methane in the atmosphere surrounding the impermissible gaps and ignition sources. At the time the instant citation was issued, the methane levels were well below the 1.0 percent concentration necessary for an ignition.

Further, it is not reasonably likely that ignitable or explosive concentrations would have been encountered had normal operations continued. The trona(FOOTNOTE 3) roof in panel 14, after mining, would be approximately 5.5 feet thick. The roof was particularly good in panel 14.

Inspector Pilling's testimony, in many ways, confirms FMC's evidence.

Mr. Pilling has been inspecting the FMC Mine since 1977. He only knew of one ignition, namely the one as described that

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occurred during a cutting and welding process in the longwall. The welding process was not involved on November 19, 1990. (Tr. 88, 89). In fact, the ignition had no relationship to the citation of November 19. (Tr. 140). He further confirmed that no injuries have resulted from methane at the FMC Mine. (Tr. 89). Mr. Pilling considers methane a hazard, regardless of quantity and the percentage. (Tr. 96).

On the day he issued the instant citation, Mr. Pilling found the air was excellent. (Tr. 101). During his inspection, there was no indication there was going to be a ventilation breakdown. (Tr. 122). At that time of the inspection Mr. Pilling agreed it was very unlikely that methane would accumulate to an explosive level. (Tr. 123). There were no ignition sources except for those cited. (Tr. 125).

A further credibility issue arises as to whether the CM controls were capable of arcing on November 19 and whether such arcing could cause a methane explosion. (The premise presumes an explosive concentration of methane was present.)

I credit the testimony of MSHA's representatives Pilling and Venters. Mr. Pilling concluded the nine switches operating the cutter heads, tram motor conveyor and main control produce incentive arcing capable of igniting methane. (Tr. 33). Mr. Venters also discussed arcing and explained how it can occur in any switch. (Tr. 270). Arcing will ignite any methane in the box. However, if the box is not properly maintained, flame could escape and ignite methane outside the box. (Tr. 271).

I do not credit Mr. Head's expert testimony. FMC's expert explained in detail the thermal cycles required for methane to enter the control box of the miner in question and how it simply was not possible under the mining conditions in FMC. (Tr. 468-473).

As noted above, the premise of this evidence is that an explosive concentration of methane was present. Such a concentration could enter the inside of a control box through a .010 gap.

Mr. Head found no evidence of arcing when he inspected the CM. However, in view of the extensive control switches, it is likely that incendive arcing could occur.

It is appropriate to consider Secretary's views as expressed in her post-trial brief. The initial issue of whether a violation of 30 C.F.R. 57.22305 occurred has been decided in favor of the Secretary.



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The Secretary further asserts that the third element of the Mathies formula does not require the Secretary to prove that it is more probable than not that an injury will result, but rather, that the violation presents a substantial possibility of resulting in an injury. In support of her position Secretary cites Consolidated Coal Co., 13 FMSHRC 748, 750 (April 1991) and Green River Coal Co., 13 FMSHRC 1287 (August 1991).

For an S&S violation the Commission requires the Secretary to establish a "reasonable likelihood that the hazard contributed to will result in an event . . . ."

The Secretary would change the test of "reasonable likelihood" to "substantial possibility." We generally recognize that anything is possible and I reject the position urged by the Secretary since it deviates from the Commission mandate. The cases relied on support the Secretary but they are not binding on the writer since they are Judge's decisions. I believe the Commission has clearly articulated its view of S&S. "Substantial possibility" is not one of the views accepted by the Commission.

The Secretary urged that Inspector Pilling's S&S citation written November 19, 1990, is based on his extensive knowledge of FMC, the fact the mine was liberating over 1.5 million cubic feet of methane in a 24-hour period and upon his belief the CM master switch was arcing.

I agree the FMC mine was liberating over 1.5 million cubic feet of methane in a 24-hour period (considerably more than was liberated in the Texasgulf mine). I further concur that the inspector believed the master switch on the CM was arcing. However, the Inspector found no methane present in the panel nor does the evidence establish that a sufficient amount of methane would accumulate or be liberated in panel 14 to cause a hazard.

A Section 103(i) gas test confirmed the absence of methane in the return entry. (Tr. 116). FMC personnel also found zero methane. (Tr. 484).

Inspector Pilling has conducted over 8,000 tests for methane at FMC over a nine-year period and has never detected methane in the ignitable range. (Tr. 119, 120). The history shows that the concentration of methane was almost always 0 percent and never more than 1 percent. (Tr. 481).

The Secretary states the CM was about to cut into virgin trona. Such a mining procedure would release methane.

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The Secretary is in error; methane is liberated from the oil shale. Unlike coal, trona contains only trace amounts of methane. (Tr. 202, 298).

The Secretary also relies on the testimony of Michael Erspamer.

A summary of Mr. Erspamer's testimony, entered above, indicates that when roof bolting he would strike pockets of methane. In addition, there were occasions when he had detected methane of various described high concentrations, including concentrations as high as 10 percent.

I am not persuaded by Mr. Erspamer's testimony that he detected 10 percent methane on several occasions unrelated to the citation. I am not persuaded because in cross examination he identified several methanometers and acknowledged that his was incapable of reading 10.0 percent concentration. (Tr. 226).

I find Mr. Erspamer's testimony about releasing methane during roof bolting to be credible. However, there was no evidence (expert or otherwise) to establish whether the release constituted a dangerous concentration of methane. I appreciate such matters are not always subject to precise proof but the Judge's conclusions must be reasonably drawn from the facts.

In any event, Mr. Erspamer's roof-bolting activities were shown to be very limited. When asked about the extent of the roof bolting he testified:

- A. I never did permanently, but I did as a relief operator. When I was a miner operator, the roof bolter operator was qualified to run the miner, and so we'd trade off once in a while and break up the monotony by doing each other's jobs. (Tr. 180).

Mr. Erspamer also testified and I find his testimony credible that he detected concentrations of methane at 1 percent "probably hundreds of time." (Tr. 188). However, these were instances when Mr. Erspamer was firebossing. On these occasions the fans were down or overcasts were being cut. The very purpose of the fireboss inspections are to clear out the methane. (Tr. 136, 196, 216, 217, 223). Inspector Pilling believed that the high readings of methane detected were "to be expected" because they were found during pre-shift fire boss inspections. (Tr. 136).

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Witnesses Merle Venters and Jerry Davidson confirmed that "outbursts" or "inrushes" of methane do not occur at FMC. (Tr. 296, 348).

Issue: Was the violation properly classified as Significant and Substantial due to the nature of the mine

The Commission has ruled that the nature of the mine is a factor to be considered in determining whether a violation is S&S. Texasgulf, Inc. supra, 10 FMSHRC at 501.

As the Commission has also noted, the geological structure of a mine should be evaluated to reasonably evaluate future liberation of methane. Texasgulf, Inc., supra, 10 FMSHRC at 503.

JERRY PALMER DAVIDSON, a geologist experienced in mining, is employed by the Denver Ground Support Group for MSHA. (Tr. 331). Mr. Davidson is familiar with the FMC Mine as part of an MSHA ground stability investigation of all trona mines in Green River, Wyoming. (Tr. 333). The occurrence of methane was not a part of MSHA's report. (Tr. 340).

Methane is one of the volatile constituents of oil shale. (Tr. 341). Trona contains thin seams of oil shale, an eighth or quarter of an inch. During the mining process, oil shale and methane are released into the atmosphere. (Tr. 342, 343). Cracks or fissures are very common in a trona mine. (Tr. 345).

While he was in the mine Mr. Davidson observed fissures in the continuous miner areas. (Tr. 347). The fissures serve as a conduit for volatile vapors such as methane which can be in the roof. (Tr. 347).

A roof fall fractures all the strata in the fall. This produces a larger amount of whatever formation gasses existed in the roof. Methane exists with the oil shale in the FMC roof. Another source of methane is the thin seams of oil shale in the bed being mined. (Tr. 348). In addition, methane can come up from the floor. In the FMC mine it is not possible to predict when a roof fall, fracture or crack will occur. (Tr. 349).

The FMC had a roof fall in 1989 in the continuous miner section but the witness did not know the location of the fall. (Tr. 357, 358). As methane enters the atmosphere it is possible to check its concentration with gas bottles or methanometers. (Tr. 359). When methane enters the atmosphere, the concentration

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and location varies. (Tr. 360). When a continuous miner cutter head hits a fissure, whatever gas is in the fissure immediately comes into the mine atmosphere. (Tr. 360). Mr. Davidson agreed the strata differs from east of the trona mine in a general way. (Tr. 370). FMC's mine is several miles in area. (Tr. 372).

In MSHA's report (Ex. G-13, R-3) it was recommended that one to two feet of trona should be left in place. (Tr. 376, 377, Ex. R-3). Mr. Davidson was not aware of any explosions, blowouts or outbursts in the FMC Mine. (Tr. 383, 384).

Bed 17 is one of the largest trona beds being mined. There are three companies mining the bed. (Tr. 386). Exhibit G-13 is MSHA's general ground control investigation of all the trona mines in the Green River Basin. (Tr. 388, 389).

#### Evaluation

Mr. Davidson's testimony fails to establish how the geology of FMC's mine might cause a hazardous concentration of methane. There is no "confluence" as required in Texasgulf, Inc.

JERRY LEE FULLER, senior mining engineer for MSHA and a rebuttal witness, has been so employed for over 14 years. (Tr. 525). Mr. Fuller, a graduate from the Colorado School of Mines, teaches classes in ventilation. (Tr. 525).

As a ventilation expert, Mr. Fuller is familiar with methanometers mounted on continuous miners. (Tr. 537). He is also familiar with the aliphatic hydrocarbons generally associated with oil shale. The higher hydrocarbons tend to interfere with methanometers on the side of safety. (Tr 537). That is, the higher hydrocarbons will show as methane when none is present.

A roof fall in an airway will obstruct ventilation to some degree. Based on a reasonable engineering certainty a ventilation system does not always dilute, render harmless and carry away methane. (Tr. 545). The ventilation system can't ventilate every nook and cranny of the mine. It is necessary to control the ignition sources as well as ventilate as close to them as possible. The standards address two main areas: they seek to control ignition sources and ventilate to dilute hazardous gasses. (Tr. 548). The ventilation system cannot compensate for a break-down in a permissibility system. (Tr. 560). It is possible to have ignitions when a ventilation system is running because the ventilation system cannot ventilate every nook and cranny of the mine. It is possible for ignitions to occur in underground gassy trona mines even with 26,000 CFM in the area being mined.

Evaluation

Mr. Fuller does not establish a dangerous concentration of methane was reasonably likely. He appears to state that FMC's mine, as a Category III mine, liberates methane concentrations which are explosive or can become explosive when diluted. (Tr. 545, 546).

However, the record indicates Mr. Fuller was not testifying as to the FMC mine. He was rather quoting (somewhat incorrectly) MSHA's categorization regulation, 30 C.F.R. 57.22003. The regulation provides as follows:

(3) Category III applies to mines to which noncombustible ore is extracted and which liberate a concentration of methane that is explosive, or is capable of forming explosive mixtures with air, or have the potential to do so based on the history of the mine or the geological area in which the mine is located. The concentration of methane in such mines is explosive or is capable of forming explosive mixtures if mixed with air as illustrated by Table 1 below, entitled "Relation Between Quantitative Composition and Explosibility of Mixtures of Methane and Air".

KEN PORTER is the supervisor for the Electrical Power Systems Branch at MSHA's Approvals and Certification Center in Triadelphia, West Virginia. (Tr. 561). His initial responsibility was in the Field Activities Branch responsible for approving longwalls. His present duties include approving all types of electrical equipment. (Tr. 562, 563).

On December 11, 1991, he responded to a request by Inspector Pilling. (Tr. 563). MSHA has records that correspond to a model of the machine inspected by Mr. Pilling. (Tr. 565, 568).

Inspector Pilling inquired as to how the enclosures were constructed and whether the components within the enclosure were capable of igniting the methane air mixture. (Tr. 573, 574). The witness described where arcing would occur in the box. (Tr. 575). The vacuum contractor on the equipment will interrupt the 950 volt cutter motor circuits within a vacuum bottle. This reduces the arcing. (Tr. 586). Arcing would occur inside the box even if the box contained vacuum breakers. Such arcing could be caused by the seven control switches and the circuit breaker. (Tr. 598).

Evaluation

Mr. Porter's testimony did not enhance the S&S allegations as it relates to hazard concentrations of methane.

For the reasons stated above I credit Mr. Head's testimony as to the effectiveness of FMC's ventilation and the unlikelihood of a methane explosion. I further reject Inspector Pilling's opinion that the violation was S&S since his opinion conflicts with the Commission's stated criteria.

In addition, I conclude the nature of the mine and its geological structure does not support a designation that the violation was significant and substantial.

It is appropriate to compare cases upholding S&S findings: In U.S. Steep Mining Co, Inc., 6 FMSHRC 1866, 1867-69 (August 1984) a coal mine liberated over 1,000,000 cubic feet of methane in a 24-hour period. In addition, the mine had a history of methane ignitions and there were excessive accumulations of coal nearby; in United States Steel Mining Co., Inc., supra at 1128-30 (August 1985) coal mine liberates over 1,000,000 cubic feet of methane in a 24-hour period, has a history of past methane ignitions, can liberate dangerous levels of methane in a relatively short period and where ventilation is below that required; in Youghioghney & Ohio Coal Co., 9 FMSHRC 673, 677-678 an S&S designation was upheld where a coal mine was subject to inspection pursuant to Section 103(i) and sudden outburst of methane had occurred recently.

The above cases all involve a dangerous concentration of methane, a factor not established in the FMC mine and not reasonably likely.

Finally, on the authority of Texasgulf, Inc., I conclude the violation of 30 C.F.R. 57.22305 was not significant and substantial. Accordingly, the S&S allegations should be stricken.

Issue: Was the Violation Due to FMC's Unwarrantable Failure

In Emery Mining Corp., 9 FMSHRC 1997, 2004 (December 1987) and Youghioghney & Ohio Coal Company, 9 FMSHRC 2007, 2010 (December 1987). The Commission defined unwarrantable failure as aggravated conduct constituting more than ordinary negligence by a mine operator in relation to a violation of the Act." Emery examined the meaning of unwarrantable failure and referred to it in such terms as "indifference," "willful intent," "serious lack of reasonable care," and "knowing violation."

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FMC's extensive mine safety program includes a maintenance shift for every two production shifts which means a permissibility check is done each day. (Tr. 189, 192-194).

Witness John Head testified to the numerous layers of protection in place at FMC including training of personnel, excellent ventilation, methane testing by foremen, continuous monitors on the Joy miners with automatic shutoff at 1.5 percent, one maintenance shift for every two production shifts, voluntary drilling of gas holes and an effective fire prevention program in place. (Tr. 475-486).

It is true that FMC has violated this standard 49 times in the two years preceding the November 19, 1990, citation. However, prior violations must be considered against the fact that FMC has 100 pieces of permissible equipment (Tr. 415) operating over 700 production shifts per year (Tr. 189) production shifts for every maintenance shift X 365 equals 730 production shifts per year; thus conservative estimates (700 shifts X 100 pieces of equipment X 2 years) indicate FMC had 140,000 permissible equipment shifts over the two year period. Each piece of permissible equipment contains thousands of locations where a gap can exist. Thus, out of 140,000 permissible equipment shifts, 49 were cited.

A continuous miner is, no doubt, subject to hard use in the mine. However, the evidence fails to indicate that FMC was guilty of aggravated conduct. Accordingly, the allegations of unwarrantable failure should be stricken.

Issue: Should FMC's request for Declaratory Relief be granted

FMC requests declaratory relief. Specifically, the operator requests that given similar conditions, permissibility violations in continuous miner sections are not significant and substantial.

The Commission has recognized that it may grant declaratory relief in appropriate proceedings. Beaver Creek Coal Co., 11 FMSHRC 2428, 2430 (December 1989); Kaiser Coal Corp. 10 FMSHRC 1165, 1170-71 (September 1988); Climax Molybdenum Co., 2 FMSHRC 2748, 2751-52 (October 1980), aff'd sub nom., Climax Molybdenum Co. v. Secretary of Labor, 703 F.2d 447, 452 (10th Cir. 1983); see also Youghioghney & Ohio Coal Co., 7 FMSHRC 200, 203 (February 1985)("Y&O"). The sources of this authority are section 105(d) of the Act, 30 U.S.C. 815(d), empowering the Commission to "direc[t] other appropriate relief," and section 5(d) of the Administrative Procedure Act, 5 U.S.C. 554 (e)(1982)("APA"),

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which is incorporated by reference into the Mine Act, 30 U.S.C. 815(d).

I decline to grant declaratory relief. Given the dynamics of mining closely similar conditions to those found in this case are not likely to exist. In short, in granting declaratory relief the Commission would "express legal opinions on academic theoreticals which might never come to pass" American Fidelity & Casualty Co. v. Pennsylvania Threshermen & Farmers Mutual Casualty Insurance Co., 280 F.2d 453, 461 (5th Cir. 1960).

#### Civil Penalty

Section 110(i) of the Mine Act mandates the consideration of six criteria in assessing appropriate civil penalties.

In considering the statutory criteria I conclude FMC, by the size of its mine, is a large operator. The Secretary's Proposed Assessment indicates the size of FMC's mine is 1,915,560 production tons or hours worked. Accordingly, I believe the penalty assessed is appropriate in relation to the company's size.

In the absence of evidence to the contrary I conclude the penalty hereafter assessed will not affect the operator's ability to continue in business.

FMC's prior adverse history as evidenced by Exhibit G-12 indicates the company was assessed and paid 314 violations for the two years preceding November 18, 1990.

FMC was negligent. Inspector Pilling located the permissibility violation. FMC's maintenance crew should have also located it as it was readily accessible.

The gravity is high. Permissibility violations inby the last open crosscut are serious violations.

FMC demonstrated statutory good faith in abating the violative condition.

Considering all of the statutory factors, I deem that a civil penalty of \$200 is appropriate.

For the foregoing reasons I enter the following:



ORDER

1. The significant and substantial allegations are STRICKEN.
2. The unwarrantable failure allegations are STRICKEN.
3. Citation No. 3633617, as amended, is AFFIRMED.
4. A civil penalty of \$200 is ASSESSED.
5. Respondent's motion for declaratory relief is DENIED.

John J. Morris  
Administrative Law Judge

FOOTNOTES START HERE-

1. A feeler gauge was described as being a .5 inch wide and consisting of a thin, shiny material. (Tr. 46).

2. This information came from MSHA's Approval and Certification Center in Tridelfhia, West Virginia. (Tr. 57).

3. Trona only contains trace amounts of methane in the crystalline structure. (Tr. 455).