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SOL (MSHA) V. FREEMAN UNITED COAL MINING
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FEDERAL MINE SAFETY & HEALTH REVIEW COMMISSION
WASHINGTON, D.C.
April 29, 1985

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

v. Docket No. LAKE 82-3

FREEMAN UNITED COAL MINING CO.

BEFORE: Backley, Acting Chairman; Lastowka and Nelson,
Commissioners

DECISION

BY THE COMMISSION:

This civil penalty case arises under the Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 801 et seq. (1982). The question presented is whether the Secretary of Labor proved a violation of 30 C.F.R. 75.301. The Commission's administrative law judge found that a violation was established and assessed a \$150 penalty. 5 FMSHRC 590, 595-96 (March 1983) (ALJ). For the reasons that follow, we reverse.

Section 75.301 provides in part:

The minimum quantity of air reaching the last open crosscut in any pair or set of developing entries and the last open crosscut in any pair or set of rooms shall be 9,000 cubic feet a minute....

During a safety and health inspection at Freeman United Coal Mining Co.'s ("Freeman") Crown No. 2 Mine, Mine Safety and Health Administration (MSHA) Inspector John D. Stritzel proceeded to the last

open crosscut between Rooms 21 and 22 in the 4th southwest section. Inspector Stritzel was accompanied by David Webb, the assistant to the mine superintendent and Freeman's inspector escort, and by Rick Reed, the miner's walkaround representative. The MSHA inspector attempted to calculate the volume of air at the crosscut.^{1/} In making such a calculation the air velocity

^{1/} The volume of air is the quantity of air flowing through a segment of an entry in a given time. Air quantity is calculated by multiplying the air velocity by the cross-sectional area of the entry. The volume of air is measured in cubic feet per minute ("cfm").

~502

must be determined. The inspector tried to use his anemometer for this determination, but could not obtain an accurate reading. He therefore decided to use a chemical smoke tube test to obtain the measurement.^{2/} The inspector divided the crosscut into four quadrants and he and Reed conducted four or five smoke cloud tests in each quadrant. The inspector measured a distance of 10 feet in length along the floor of the two lower quadrants. Reed stood at the "upstream" end of the ten foot line and squeezed the aspirator bulb to release the smoke cloud upon the inspector's command. Reed tried to position himself so that the cloud was released at the beginning of the 10 foot line. The inspector stood at the "downstream" end of the 10 foot line and timed the cloud's speed with the second hand of his wrist watch. The inspector picked a spot high on the rib, in line with the end of the ten foot distance, and when the cloud passed this spot he noted the time. The inspector averaged the times for each quadrant and then averaged the results to obtain the air velocity at the crosscut. These procedures were observed by management representative Webb. The inspector then measured the height and width of the entry, and he multiplied the height by the width to obtain the cross-sectional area of the entry. Multiplying the air velocity by the area of the entry, the inspector calculated the quantity of air reaching the last open crosscut to be 7,654.5 cfm. Because this was less than the required minimum of 9,000 cfm, he issued a citation for a violation of section 75.301.

Subsequently, the MSHA inspector lost the notes containing the figures obtained as a result of his tests, and his measurements and calculations. At the hearing he was unable to recall any of the specific figures. However, both the inspector and miner representative Reed testified regarding the general procedures they had used to conduct the smoke cloud tests. After the Secretary presented his case-in-chief, counsel for Freeman moved to vacate the citation on the basis that the test result alone, without the underlying measurements, could not establish

^{2/} The basic instruments normally used to measure air velocity are the rotating vane anemometer and the chemical smoke tube. The vane anemometer is a small windmill geared to a mechanical counter. The chemical smoke tube is a plastic or glass pipe with an aspirator bulb at one end. Smoke is generated into the mine's atmosphere by squeezing the aspirator bulb which forces air through the tube containing a smoke generating chemical. The smoke cloud moves with the air stream and the cloud is timed over a known distance laid out along the floor of the mine entry. Smoke cloud measurements are made by two individuals. In essence, one person is positioned with the

smoke tube at the "upstream" end of the timing distance and the other is positioned with a timing device at the "downstream" end of the timing distance. The smoke is released at the "upstream" position on the command of the timer, who starts timing simultaneously with the release of the smoke or when the cloud passes a preselected starting point. Timing is stopped when the cloud passes the timer. The velocity of the air is determined by calculating the number of feet the cloud has traveled, the time it has taken to cover that distance, and then converting those figures into a feet per minute measurement.

~503

the violation. The administrative law judge denied the motion, ruling that the Secretary had established prima facie that there was less than 9,000 cfm at the crosscut. In rebuttal Freeman's inspector escort, Mr. Webb, and Freeman's senior ventilation engineer attacked the test methodology employed by the inspector and the consequent accuracy of the test results. They called into question the test procedures by citing to U.S. Bureau of Mines published documents addressing the use of smoke cloud tests, generally accepted scientific principles, and by expressing opinions based upon their own mining experience.

The judge rejected Freeman's arguments. He found that the air reaching the last open crosscut "was approximately 7,654.5 cubic feet per minute." 5 FMSHRC at 593. He found it "significant ... that [Freeman] ... did not itself take a smoke test." 5 FMSHRC at 596. He concluded, [T]he test was validly taken and the results showed a violation." *Id.*

Because the precise quantity of air in a mine entry is not susceptible to perceptual determination, proof by test result is a necessary and common element in an MSHA enforcement action. Such proof, however, is not immune from challenge at a hearing, and it is the Secretary who bears the burden of establishing the violation he has alleged and of establishing the adequacy of the proof he offers. In this case, determination of air quantity required the inspector to make four types of mathematical calculations: averaging the smoke cloud test results; conversion of the average from feet per second into feet per minute; multiplication of entry height by entry width; and multiplication of the average air velocity by the area of the entry. Although there is no way to prove absolutely that computations such as these are correctly made without the underlying data, the lack of such data is not necessarily fatal per se to the finding of a violation. For example, (1) such a challenge may not be raised by the mine operator or (2) there may be sufficient additional evidence of the scientific reliability of the test methodology employed by the inspector to corroborate the result. However, where an operator contests the violation, is unable to obtain the underlying data and challenges the Secretary's failure to produce it, and where impeaching evidence of probative worth raises questions regarding the test methodology, the test result, standing alone, will not support a violation. In such circumstances, the record does not afford a basis for an analysis by which the ALJ and, ultimately, this Commission may verify the validity of the result. *Wirtz v. Baldor Electric Co.*, 337 F.2d 518, 529-30 (D.C. Cir. 1964). See also *Avnet, Inc.*, 78 FTC 1562, 1563 n. 1 (1971).

The evidence presented by Freeman in this case raised serious questions regarding the validity of the test procedures and, hence, of the accuracy of the test result. Significantly, the Secretary did not introduce any evidence regarding MSHA approved procedures for conducting smoke cloud tests or the instructions MSHA provides to its inspectors for conducting the tests. Nor did the Secretary's witnesses testify as to test procedures generally accepted in the mining industry. Thus, given the complete lack of underlying data, the questions raised by Freeman concerning the validity of the test methodology employed in this case, and the lack of evidence regarding smoke cloud test methodology

~504

advocated by MSHA or accepted by the mining industry as a whole, we conclude that in this case the judge's conclusion that the Secretary established a violation of 30 C.F.R. 75.301 is not supported by substantial evidence.^{3/}

Accordingly, the administrative law judge's conclusion that Freeman violated 30 C.F.R. 75.301 is reversed, and the citation is vacated.^{4/}

Richard V. Backley, Acting Chairman
James A. Lastowka, Commissioner
L. Clair Nelson, commissioner

^{3/} While Freeman might also have challenged the Secretary's assertions of a violation by conducting its own tests, its failure to do so did not diminish the effect of the evidence that was offered by Freeman. It is the Secretary's responsibility to investigate, allege, and prove violations.

^{4/} Pursuant to section 113(c) of the Mine Act, 30 U.S.C. 823(c), we have designated ourselves as a panel of three members to exercise the powers of the Commission.

~505

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