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Federal Mine Safety and Health Review Commission (F.M.S.H.R.C.)
Office of Administrative Law Judges

CLIMAX MOLYBDENUM COMPANY,
APPLICANT

Application for Review

Docket No. DENV 78-581-M

v.

Order No. 333638

August 31, 1978

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

Climax Mine

RESPONDENT

DECISION

Apperances: William F. Schoeberlein, Esq., Charles W. Newcom, Esq.,
Dawson, Nagel, Sherman & Howard, Denver, Colorado; and
W. Michael Hackett, Esq., and James F. Engelking, Esq.,
Climax Molybdenum Company, Golden, Colorado, for the
Applicant
Stephen P. Kramer, Esq., Office of the Solicitor, U.S.
Department of Labor, for the Respondent

Before: Judge Cook

I. Procedural Background

On September 29, 1978, Climax Molybdenum Company (Climax)
filed an application for review pursuant to section
107(e)(1)(FOOTNOTE 1) of the Federal Mine Safety and Health Act of 1977,
30 U.S.C. 817(e)(1) (1978) (1977 Mine Act).

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The application seeks review of an imminent danger withdrawal order issued by a Federal mine inspector under section 107(a)(FOOTNOTE 2) of the Act. The application for review states as follows:

COMES NOW Climax Molybdenum Company, a division of AMAX Inc. (hereafter "Climax"), by and through its attorneys, pursuant to Section 107(e) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C. 817(e), and hereby makes application for review of Order Number 333638, issued on August 31, 1978, a copy of which is attached hereto. Climax respectfully requests that a hearing be held in Denver, Colorado. At that hearing, Climax intends to contest the merits of the above-referenced order. Climax respectfully requests that said order be vacated and declared void because there was no imminent danger in that there was no condition or practice in existence which could reasonably be expected to cause death or serious physical harm before such condition or practice could be abated.

An answer was filed by the Mine Safety and Health Administration (MSHA) on October 12, 1978. The answer states as follows:

The Secretary of Labor (Secretary) by undersigned counsel admits to the issuance of withdrawal order No. 333638 and states that it was properly issued pursuant to Section 107(a) of the Federal Mine Safety and Health Act of 1977.

The Secretary also denies all other allegations made by the applicant not herein specifically admitted to be true.

Wherefore, the Secretary requests that the relief requested by climax be denied and that withdrawal order no. 333638 be affirmed.

Certificates of service attached to both pleadings indicated that service had been made upon Local No. 1823, International Brotherhood of

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Electrical Workers and Local No. 2-24410, Oil Chemical and Atomic Workers International Union. No answer was filed by either organization.

Orders were issued on November 7, 1978, and November 20, 1978, granting Climax's motions requesting extensions of time for the commencement of discovery.

Various notices of hearing were issued as well as an order for continuance pursuant to a motion by the Applicant. The hearings were conducted between November 28, 1978, and November 29, 1978, and between January 30, 1979, and February 1, 1979, in Denver, Colorado.(FOOTNOTE 3) Representatives of Climax and MSHA were present and participated. No persons acted as representatives of the miners at the hearing.(FOOTNOTE 4)

At the conclusion of the hearing on February 1, 1979, a schedule for the submission of posthearing briefs was agreed upon. However, difficulties experienced by counsel necessitated a revision of this schedule. MSHA and Climax submitted their posthearing briefs on March 23, 1979, and April 2, 1979, respectively. On April 6, 1979, Climax submitted an errata correcting certain typographical errors in its posthearing brief. Climax submitted its reply brief on April 16, 1979. MSHA did not submit a reply brief.

II. Issue

The issue presented is whether the imminent danger order of withdrawal was properly issued under section 107(a) of the Act.

Did the conditions which existed as to the starter leg wire to the slusher at 615-14 while the slusher was energized in the Climax Mine at about 12:42 p.m., on August 31, 1978, constitute an "imminent danger."

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III. Evidence Contained in the Record

A. Stipulation

During the course of the hearing, the parties stipulated that in order for a slusher machine to be operable, it would have to be bolted into the rock as well as sitting in a concrete pad (Tr. II at 114).

B. Witnesses

MSHA called as its witnesses Dennis Martinez, an employee of Climax; James Enderby and Frederick Joseph Freilino, MSHA inspectors.

Climax called as its witnesses Walter Joseph Florence, Jr., an industrial hygiene technician at the Climax Mine; James S. Keith, Climax's director of health and safety; George E. Pupera, electrical superintendent at the Climax Mine; John Reddington, an electrician on the 600 level of the Climax Mine; and Harden Williams, the underground electrical foreman at the Climax Mine.

C. Exhibits

1. MSHA introduced the following exhibits into evidence:

M-1 is a copy of Order No. 333638, issued by inspector James Enderby on August 31, 1978, pursuant to section 107(a) of the 1977 Mine Act.

M-2 is a modification of M-1.

M-3 is a map of the 600 level of the Climax Mine.

M-4 is a sketch, prepared by an MSHA artist, of the area around the 615-14 slusher as it appeared on August 31, 1978.

M-5 is a cross-sectional sketch of the 615-14 slusher dash.

M-10 is a drawing produced during the hearing by witness Dennis Martinez.

M-10-A is Mr. Martinez' redrawing of M-10.

M-11 contains copies of notes written by witness Walter Joseph Florence on August 31, 1978.

M-12 is a drawing of the electrical system drawn during the hearing by witness Frederick Joseph Freilino.

M-13 is a photograph taken by Inspector Enderby on December 13, 1978.

M-14 is a photograph taken by Inspector Enderby on December 13, 1978.

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M-15 is a photograph taken by Inspector Enderby on December 13, 1978.

M-16 is a photograph taken by Inspector Enderby on December 13, 1978.

M-17 is a photograph taken by Inspector Enderby on December 13, 1978.

M-18 is a copy of an extract from the "American National Standard Guide for AC Motor Protection," ANSI/IEEE C37.96-1976.

M-19 is a copy of an extract from Title 30 of the Code of Federal Regulations.

M-20 is a copy of an extract from the IEEE "Recommended Practice for Grounding of Industrial and Commercial Power Systems," ANSI C114.1-1973/IEEE Standard 142-1972, also called the "Green Book."

M-21 is a copy of the front page of the IEEE "Guide for Safety in Substation Grounding," IEEE Standard 80-1976.

M-22 is a copy of an extract from the IEEE "Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems," IEEE Standard 242-1975, also called the "Buff Book."

M-23 is a copy of an extract from the IEEE "Recommended Practice for Electric Power Distribution for Industrial Plants," IEEE Standard 141-1976, also called the "Red Book."

M-24 is a copy of an extract from the "American Electrician's Handbook," 9th edition.

M-25 is a copy of an extract from "Industrial Power Systems Handbook," [D. Beeman, editor] (McGraw-Hill Book Company, Inc., 1955).

M-26 is a copy of the front page from the "Electrical Protection Handbook."

M-27 is a copy of a page from a book published by the Bureau of Mines, U.S. Department of the Interior, dated June 30, 1972, with reference to metal and nonmetal mines.

M-28 is a copy of a memorandum dated March 11, 1976, from the Assistant Administrator for Metal and Nonmetal Mine Health and Safety of the Mining Enforcement and Safety Administration, U.S. Department of the Interior, to district and subdistrict managers, metal and nonmetal mine safety and health.

M-29 is a copy of an extract from the "National Electrical Code" (1978), admitted into evidence for the purpose of illustrating types of cable jackets and material classification numbers.

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M-30 is a chart containing a circuit breaker current characteristic curve reflecting the maximum/minimum allowable tripping time for circuit breaker types EB, EHB and Mark 75 Type HFB.

M-31 is a chart similar to M-30 for the following circuit breaker types: QUICKLAG Types HQP, QC, QPH, QBH, QCH, and Type BAB Standard Frames; MARK 75 Frames HBA, QHC and QHP.

M-32 is a copy of an extract from "Inspection and Test of Electrical Equipment."

M-34 is a copy of an extract from the IEEE "Recommended Practice for Emergency and Standby Power Systems," IEEE Standard 446-1974, also called the "Orange Book."

2. Climax introduced the following exhibits into evidence:

0-1 is a copy of Inspector Enderby's deposition taken on November 21, 1978.

0-1-A is a copy of the cover letter that accompanied 0-1.

0-2 is a manufacturer's photograph of a slusher machine similar to the machine that was in 615-14.

0-2-A is a photocopy of 0-2.

0-2-B is a photocopy of 0-2.

0-3 is a nomenclature chart for 150-horsepower slushers.

0-4 is a section of cable containing the defect cited by Inspector Enderby on August 31, 1978.

0-5 is a section of cable.

0-6 is a three-page reproduction from Inspector Enderby's notes.

0-7 is a brochure.

0-8 is a brochure.

0-9 is a schematic drawing showing the electrical key to a slusher installation from a main substation.

0-11 is a copy of Article 90 of the 1978 version of the "National Electrical Code."

0-12 is a copy of the Applicant's requests for admissions, production of documents and interrogatories.

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0-13 is a copy of MSHA's response to 0-12.

0-14-A is a copy of an extract from the IEEE "Recommended Practice for Protection and Coordination of Industrial and Commercial Power System," IEEE Standard 242-1975.

0-14-B is a copy of an extract from the IEEE "Recommended Practice for Grounding of Industrial and Commercial Power Systems," ANSI C114.1-1973/IEEE Standard 142-1972.

D. Posthearing Receipt of Exhibits into Evidence

On February 27, 1979, Climax filed a motion with respect to the submission of additional documents. This motion states the following:

COMES NOW Climax Molybdenum Company, a division of AMAX Inc. (hereinafter "Climax"), by and through its attorneys, pursuant to the Interim Procedural Rules of the Federal Mine Safety and Health Review Commission, 29 C.F.R. 2700.13, and moves for the admission of Exhibits 0-14(A) and 0-14(B). Climax further states that it has no exhibits to be introduced as 0-10 in connection with the taking of photographs by inspectors.

In support thereof, Climax would state as follows:

1. Although Counsel for Climax has yet to receive Respondent's response to its request for production of documents and interrogatories, Climax understands from conversations with counsel for Respondent that no documents dealing with the issue of taking of photographs are in existence. Accordingly, no documents will be proposed for admission under Exhibit

0-10.

2. At the time of the hearing it was agreed that Climax would have until and including February 27 to submit any additional documents bearing on issues of the applicability of the National Electrical Code to underground mines. Additionally, as a part of those exhibits Climax has included as it was discussed at the hearing, certain pages of those documents which were used in Mr. Freilino's cross-examination.

3. 0-14(A) consists of pages 25 and 233 of the "Buff Book." Exhibit 0-14(B) consists of pages, 13, 14, 49, 58 and 59 of the "Green Book."

WHEREFORE Climax moves for the introduction [sic] and admission of Exhibits 0-14(A) and 0-14(B) for the purpose of showing the inapplicability of the National Electrical Code

to underground mines and for purposes of placing in the record pages of publications which were ready in [sic] the record by Mr. Freilino on his cross-examination.

At the hearing, it was agreed that objections to the admission into evidence of the above-noted exhibits would be set forth in the posthearing briefs (Tr. II at 446-457). No objections are set forth in MSHA's posthearing brief.

Accordingly, Climax's motion for the introduction and admission of Exhibits 0-14-A and 0-14-B for the above-stated purpose is GRANTED, and the exhibits are hereby RECEIVED in evidence.

Exhibits M-13 through M-17 are photographs of the slusher at 615-14. These photographs were taken by MSHA inspector James Enderby on December 13, 1978, at a time when he was at the mine lawfully during the course of his inspection duties. MSHA seeks to have these exhibits received into evidence, while Climax interposes strenuous objections to their admission (Tr. II at 238, 240, 270-274, 446-457; MSHA's Posthearing Brief at pp. 8-9; Climax's Posthearing Brief at pp. 22-24).

Climax notes that the issue presented is not whether the photographs are accurate representations of what the inspector observed at the time they were taken. Instead, Climax phrases the issue as "whether photographs or other evidence obtained after litigation on a citation or order is begun can properly be admitted when those photographs are not obtained in compliance with the Discovery Rules" (Climax's Posthearing Brief at p. 22). In support of its position, Climax argues:

Climax has no right of access to either interview inspectors or obtain copies of inspector's notes outside of the context of the Discovery Rule. MSHA must be required to follow those rules also and the only suitable means for requiring that is to exclude from evidence all documents, photographs, or similar materials which are obtained outside the bounds of the Commission's Discovery Rules. This is not to say that MSHA inspectors should be prohibited from returning from the scene of alleged violations after a citation has been issued is [sic] a part of determining whether abatement has been accomplished. It is to say however that if that matter is in litigation that any photographs or statements taken by an inspector after the application for review has been filed or any documents which are obtained by inspector requests after litigation has been initiated should not be admitted into evidence unless those documents are obtained through the Discovery processes provided for in the Rules. To rule otherwise would establish an unfair and arbitrary scheme which cannot be sustained, particularly in view of the presence of the Discovery Rules. Climax is obligated to

comply with the Commission's Rules and MSHA must comply with them as well. It would clearly be inappropriate to give MSHA this unfair advantage in administrative litigation.

No effort was made to comply with the Discovery Rules in taking the photographs. Because litigation was pending and those rules were not complied with, and further because in addition Climax was given no opportunity to have either a knowledgeable electrician or its attorneys involved in the taking of the photographs, Exhibits M-14 [sic] through M-17 inclusive should not be admitted into evidence.

(Climax's Posthearing Brief at pp. 23-24).

MSHA's counter-arguments state, in pertinent part, as follows:

* * * * *

2. There has been no showing that the Applicant has been in any way prejudiced by the introduction of these photographs, which are offered solely as an aid to the court in perceiving the work area of the mine involved.

3. The talking [sic] of photographs [sic] does not involve an attempt to question applicant's agents without the presence of counsel.

* * * * *

5. At the time the photographs were taken, MSHA personnel were present in the mine lawfully during the course of normal inspection duties.

Climax's objection presents a question of first impression. Climax has not cited any points and authorities in support of its position so as to provide the Judge with guidance in addressing this novel question. However, it does present a meritorious question which can be addressed with reference to existing law on the use of photographic evidence. Due consideration must be given to both the conduct complained of and the nature of the evidence and its proffered use in determining whether it is admissible.

Under the Commission's Interim Procedural Rules, in effect at all times relevant to this proceeding, "[a]ny relevant evidence may be received at the discretion of the Judge. The Judge may exclude evidence which he finds to be unreliable or unduly repetitious." 29 CFR 2700.50 (Interim Rules).

The use of photographic evidence in judicial proceedings is discussed in McCormick, Handbook of the Law of Evidence, 214 at 530-531 (2nd ed., E. Cleary, 1972), as follows:

The principle upon which photographs are most commonly admitted into evidence is the same as that underlying the admission of illustrative drawings, maps and diagrams. Under this theory, a photograph is viewed merely as a graphic portrayal of oral testimony, and becomes admissible only when a witness has testified that it is a correct and accurate representation of relevant facts personally observed by the witness. Accordingly, under this theory, the witness who lays the foundation need not be the photographer nor need he know anything of the time, conditions, or mechanisms of the taking. Instead he need only know about the facts represented or the scene or objects photographed, and once this knowledge is shown he can say whether the photograph correctly and accurately portrays these facts. Once the photograph is thus verified it is admissible as a graphic portrayal of the verifying witness' testimony into which it is incorporated by reference. [Footnotes omitted.]

Under the principles cited in the above-quoted passage, a photograph serves merely as a graphic portrayal of a witness' oral testimony, into which the photograph is incorporated by reference. Unlike evidence submitted under an exception to the hearsay rule, a photograph is not introduced ordinarily as independent proof of the truth of the matters asserted therein.

The subject photographs were offered as graphic aids in interpreting what Inspector Enderby and Mr. Martinez observed on August 31, 1978 (Tr. II at 239-240). To the extent that they set forth an accurate graphic portrayal of the conditions observed by the witnesses on August 31, 1978, they are relevant to the subject matter of this proceeding within the meaning of 29 CFR 2700.50 (Interim Rules).

There is no indication in the record that Inspector Enderby interrogated or attempted to interrogate Climax's agents on December 13, 1978, in connection with the subject matter of this proceeding. As the photographs merely relate back to conditions already observed on August 31, 1978, I am unable to characterize the circumstances surrounding their taking as an interrogation of the Applicant's agents.

30 CFR 2700.46 of the Commission's Interim Procedural Rules provided in part that: "For good cause shown, the Judge may order a party to produce and permit inspection, copying or photographing of designated documents or objects relevant to the proceeding." MSHA accordingly should have followed this rule. However, we are now faced with an accomplished fact and a consideration of whether evidence which would be helpful to the ultimate determination of the case should now be received in evidence. It could be argued that MSHA's request for admission of the pictures in evidence is in effect a motion for ratification of the act of obtaining discovery by photographing of objects.

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It does not appear that the Applicant will be prejudiced by the admission of the pictures, while on the other hand they are very helpful in understanding the issues in this case.

Accordingly, the Applicant's objection is OVERRULED and Exhibits M-13 through M-17 are hereby RECEIVED in evidence.

During the course of the hearing, Climax interposed objections to the admission into evidence of Exhibit Nos. M-18 through M-28. It was agreed that objections to the receipt of the documents would be argued in the briefs (Tr. II at 446-457). In addition, it was agreed that MSHA would be granted until February 20, 1979, to file any additional subparts to those exhibits, and that MSHA would be granted until such date to file a copy of parts of the "Orange Book" as Exhibit M-34 (Tr. II at 453-454).

On February 22, 1979, MSHA filed a motion to admit and substitute exhibits. This motion stated, in part, as follows:

Now comes the Mine Safety and Health Administration, MSHA, through its undersigned attorneys and files this motion to:

1. Admit attached exhibit M-34 (orange book).
2. Substitute the attached copy of exhibit M-24 for the one submitted at hearing.
3. Substitute the attached copies of exhibits M-20, M-22, and M-23 for those submitted at hearing.

The grounds for this motion are that the record was expressly left open for the receipt of these documents. In addition, substitution of exhibit M-24 is necessary in that the copy submitted at hearing is partially illegible due to xeroxing.

Please note that although the NEC is not specifically mentioned in M-34, the emphasized paragraph references publications which do reference the NEC.

In its posthearing brief, Climax states, in part, as follows:

Climax has no objection to the admission of exhibit no. 18 [sic] through M-28, inclusive, and M-34, for the limited purpose of dealing with the issue of whether the National Electrical Code is or is not applicable to underground mines. As noted in Part III, Climax maintains that the Code is not applicable to underground mines. Those

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exhibits only reenforce that position. They reference the Code but never as being applied wholesale, or in pertinent part here, in underground metal-nonmetal mines. (Climax's Posthearing Brief at p. 24).

Climax's brief interposes no objection to the substitution of copies of Exhibits M-20, M-22, M-23, and M-24.

Accordingly, MSHA's motion to admit and substitute exhibits is GRANTED. IT IS THEREFORE ORDERED that the copies of Exhibits M-20, M-22, M-23, and M-24, which were submitted in conjunction with the motion, be, and hereby are, SUBSTITUTED for the copies of those exhibits marked for identification during the hearing. IT IS FURTHER ORDERED that Exhibits M-18 through M-28 and Exhibit M-34 be, and hereby are, RECEIVED in evidence.

During the hearing, MSHA reserved its right to object to the receipt into evidence of Exhibits O-12 and O-13. It was agreed that any objections would be argued in the briefs (Tr. II at 448-452).

In support of its motion to admit these documents into evidence, Climax states: "With respect to Exhibits O-13 and O-14, [sic], those exhibits should be admitted. It is hornbook law that interrogations [sic] and answers are validly used for impeachment purposes. 8 Wright & Miller, Federal Practice & Procedure, Civil, 2180, p. 573 (1970)" (Climax's Posthearing Brief at p. 24).

MSHA's posthearing brief interposes no objections to the receipt of these documents in evidence.

Accordingly, IT IS ORDERED that Exhibits O-12 and O-13 be, and hereby are, RECEIVED in evidence.

IV. Opinion and Findings of Fact

A. The Applicability of the National Electrical Code to Underground Metal and Nonmetal Mines

A question is presented as to whether the National Electrical Code (NEC), portions of which are incorporated by reference into other privately-published associated publications (Exhs. M-18, M-20, M-21, M-22, M-23, M-24, M-25, M-26, M-34, O-14-A, O-14-B), sets forth an industry standard for the grounding of electrical systems in underground areas of metal and nonmetal mines. MSHA argues that the question should be answered in the affirmative (MSHA's Posthearing Brief at p. 9), while Climax argues that it should be answered in the negative (Climax's Posthearing Brief at pp. 20-22; Climax's Reply Brief at p. 7). For the reasons set forth below, I conclude that the NEC does not specifically set forth the governing industry standard for the grounding of electrical systems in the underground areas of metal and nonmetal mines.

It should be pointed out that, in view of the foundation for the decision in this case, as set forth later, the determination of this question has no effect upon the outcome; however, despite this, the issue has been analyzed.

The resolution of this inquiry requires a two-pronged analysis making reference to both the appropriate provisions of the Code of Federal Regulations (Code) and the appropriate provisions of the NEC (Exh. O-11) and associated works.

According to Inspector Freilino, the NEC requirements for adequate grounding would have required the starter leg wire to have a third conductor, i.e., a ground conductor (Tr. I at 263-264, 361). This requirement would have been deemed fulfilled by MSHA by either the presence of a third wire inside the cable or, alternatively, by the presence of a third wire somehow attached to the cable (Tr. I at 263-264, 329). The inspector opined that Exhibit O-4, a segment of the subject starter leg wire, was not in compliance because it had only two cables (Tr. I at 263). Specifically, he testified that Exhibit O-4, by itself, could not properly ground the equipment (Tr. I at 327). The inspector further testified that his opinion was based on the grounding requirements set forth in sections 1250-42 and 1250-59 of the NEC (Tr. I at 285-287).

The scope of the NEC is set forth in Article 90 of that publication which states, in pertinent part, as follows:

90-2. Scope.

(a) Covered. This Code covers:

(1) Electric conductors and equipment installed within or on public and private buildings or other structures, including mobile homes and recreational vehicles; and other premises such as yards, carnival, parking and other lots, and industrial substations.

(2) Conductors that connect the installations to a supply of electricity.

(3) Other outside conductors on the premises.

(b) Not Covered. This Code does not cover:

(1) Installations in ships, watercraft, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles.

(2) Installations underground in mines.

(3) Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communication purposes.

(4) Installations of communication equipment under the exclusive control of communication utilities, located outdoors or in building spaces used exclusively for such installations.

(5) Installations under the exclusive control of electric utilities for the purpose of communication, or metering; or for the generation, control, transformation, transmission, and distribution of electric energy located in buildings used exclusively by utilities for such purposes or located outdoors on property owned or leased by the utility or on public highways, streets, roads, etc., or outdoors by established rights on private property.

(Exh. 0-11).

As revealed in the above-quoted passage, section 90-2(b)(2) excludes installations in underground mines from the NEC's coverage. However, in spite of this disclaimer, MSHA electrical inspector Frederick Freilino testified as an expert that the NEC grounding provisions were applicable to underground metal and nonmetal mines (Tr. I at 276-277). Also, he referred to other publications as incorporating by reference select provisions of the NEC (e.g., Exhs. M-18, M-20, M-21, M-22, M-23, M-24, M-26, M-34, O-14-A, O-14-B; Tr. I at 276-282), which he described as applicable to underground mines because they apply to "all power distribution systems regardless of their use" (Tr. I at 281).

I am unable to accept the inspector's opinion in this matter because his testimony differs from both the tenor of the exhibits upon which he relied and the very language of the NEC. None of these exhibits sustain the assertion that the NEC is specifically applicable to underground mines. Those documents incorporate select NEC provisions only in the context of commercial and industrial applications that are well within the scope of section 90-2(a) of the NEC (Exh. 0-11). Accordingly, it cannot be found that the NEC and the associated exhibits establish the standards for adequate electrical grounding systems for the underground metal and nonmetal mining industry.

A review of the appropriate provisions of the Code of Federal Regulations (Code) fails to disclose a wholesale incorporation by reference of the NEC. Part 57 of Title 30 of the Code sets forth the health and safety standards for underground metal and nonmetal mines. Electrical matters are addressed in 30 CFR 57.12. References to the NEC can be found at a few places therein. These sections are applicable to both the underground and surface installations of underground mines. 30 CFR 57.1. Neither section specifically mentions the NEC in

connection with grounding.

By way of illustration, Inspector Freilino testified that if given the opportunity to observe a slusher installation at the Climax Mine with a starter leg wire containing two conductor cables such as Exhibit 0-4, he would consider the operator in violation of 30 CFR 57.12-25 (FOOTNOTE 5) (Tr. I at 270-271). This section of the Code embodies a mandatory standard requiring all metal enclosing or encasing electrical circuits, except as relates to battery-operated equipment, to be grounded or provided with equivalent protection. The inspector described the allegedly applicable NEC requirements (Tr. I at 286-287), and opined that the failure to adhere to those requirements renders a grounding system inadequate within the meaning of 30 CFR 57.12-25 (Tr. I at 270-289).

At this point, it is important to bear in mind the limited purpose for which the inspector's testimony has significance. It is not being used to determine whether the condition or practice cited in the imminent danger order of withdrawal constitutes a violation of 30 CFR 57.12-25. Whether the cited condition or practice fits the technical definition of a codified violation is not an issue in a proceeding to review an imminent danger withdrawal order. Freeman Coal Mining Corporation, 2 IBMA 197, 80 I.D. 610, 1973-1974 OSHD par. 16,567 (1973). His testimony merely reflects the opinion of an expert in the field of electrical matters in underground metal and nonmetal mines as to which provision of the Code requires adequate grounding and as to why adequate grounding should be evaluated under that section with reference to the NEC. Although this determination presents a question of law, the inspector's opinion gives some guidance as to how experts in his field view the practical difficulties encountered in determining whether a given grounding system is adequate.

A review of the various standards codified under 30 CFR 57.12 leads to the conclusion that those provisions of the NEC addressing the grounding of electrical systems have not been incorporated into the Code, and hence are not specifically applicable to underground metal and nonmetal mines. The fact that portions of the NEC are both mentioned by and incorporated into certain provisions of 30 CFR 57.12 indicates that the drafters were aware of the NEC and its various provisions. The fact that their informed judgment led them to include portions of it in certain contexts compels the conclusion that the failure to incorporate its provisions in other contexts resulted from a conscious determination that no specific requirements as to the unmentioned provision were to apply.

Exhibits M-27 and M-28 do not support the proposition that the inspectors have been directed to apply the NEC grounding standards in assessing the adequacy of grounding systems. Exhibit M-27 makes reference to it only

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in connection with section 12-1 of Part 57, the Code standard which states that "[c]ircuits shall be protected against excessive overload by fuses or circuit breakers of the correct type and capacity."

Exhibit M-28 is a more complex document. Its references to 30 CFR 57.12-20 and 57.12-25 are significant in the instant case. With respect to 30 CFR 57.12-20, it cautions that "[r]eferences for application of insulating mats or platforms should not be deemed an exemption by not conforming with established rules of the "National Electrical Code.'" However, its discussion of 30 CFR 57.12-25 makes no affirmative reference to the NEC, but merely states that "[a]ll grounding shall conform to accepted electrical standards and codes." It is unclear whether this statement reflects an intent on the administrator's part to apply the NEC or not as relates to grounding. A permissible interpretation of it would be that all grounding shall conform to accepted electrical standards and codes applicable to underground mining. As noted previously, the NEC specifically exempts from its coverage electrical installations underground in mines. Accordingly, Exhibit M-28 cannot be construed as specifically requiring the application of the NEC in such case.

Accordingly, for the reasons set forth above, I conclude that the NEC is not specifically applicable to grounding requirements for installations underground in metal and nonmetal mines.

B. The Imminent Danger

MSHA inspector James Enderby visited the Climax Mine at approximately 6:45 a.m. on August 31, 1978, to do asbestos fiber sampling in one of the slusher dashes on the 600 level of the mine (Tr. I at 81, 107-108). The inspector proceeded to the 615-14 slusher dash, arriving there at approximately 8:20 a.m. (Tr. I at 118). Mr. Dennis Martinez, the union representative, Mr. Andy Burkhart, the slusher operator, and Mr. Walter Florence, Climax's industrial hygiene technician, accompanied him (Tr. I at 118). At approximately 12:40 p.m., Mr. Martinez observed the slusher's starter leg wire, a cable running from the starter switch on the rib across to and between the driveguard and the main part of the slusher. The cable ran over the driveshafts located between the driveguard and the main part of the slusher (Tr. I at 45-47; Exhs. M-4, M-10, M-10-A).

According to Mr. Martinez, the cable was touching the motor driveshaft and was resting on a "lightly rounded" edge of the driveshaft (Tr. I at 47, 50-51, 69). This driveshaft was turning when the motor was in operation (Tr. I at 51). Mr. Martinez described the cable as having what appeared to be a cut or groove worn in it. He concluded that this defect had been caused by the cable being in contact with the rotating driveshaft (Tr. I at 48, 53-54). His observations led him to conclude that the cable was unsafe because he thought that he could see something white on the cable, which indicated to him that the insulation was almost ready to wear through (Tr. I at 54, 69).

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Mr. Martinez testified that he first observed the cable when the last car of the muck train had been approximately half filled by the slusher (Tr. I at 57-58). He thereupon attempted to attract the inspector's attention (Tr. I at 59-63). However, the high noise level prevented the inspector from immediately understanding what Mr. Martinez' signal related to (Tr. I at 62-64). Consequently, the slusher was not turned off until the last car on the muck train had been filled (Tr. I at 63, 147-148).

Immediately after the slusher was switched off, Inspector Enderby turned around to see what Mr. Martinez wanted (Tr. I at 148-149). The inspector testified that Mr. Martinez told him that the cable appeared to have a "hole" in it (Tr. I at 149). The inspector looked between the driveguard and the slusher body from the draw hole side of the slusher, but was unable to see the worn spot (Tr. I at 149). Mr. Martinez then picked up the cable, turned it over and laid it atop the driveguard to show the inspector the worn spot (Tr. I at 149-150). The inspector testified that he got to within approximately 12 to 15 inches of the subject portion of the cable and that he thought he saw a bare wire (Tr. I at 150). He described what he observed as "a cut or worn section with a slightly black spot inside the filler, which is on the underside of the outer insulation jacket" (Tr. I at 150). The inspector stated that the perceived possibility of electrocution would have prevented him from placing his hand on the bare spot (Tr. I at 252). Thereafter, the inspector informed Mr. Florence that he was going to issue an order closing the dash until the wire was fixed (Tr. I at 155). The order was issued at 12:42 p.m. (Exh. M-1). He returned to the area at approximately 1:32 p.m. and observed the electrician finish wrapping the outer jacket of the cable with electrical tape (Tr. I at 158-159). The order was abated at 2 p.m. (Exh. M-1).

The question presented is whether the subject order of withdrawal was validly issued. The controlling issue is whether the condition cited by Inspector Enderby constituted an imminent danger within the meaning of section 107 of the 1977 Mine Act, as that term is defined by section 3(j) of the Act.

Section 3(j) of the 1977 Mine Act defines an imminent danger as "the existence of any condition or practice in a coal or other mine which could reasonably be expected to cause death or serious physical harm before such condition or practice can be abated."

Both the Interior Board of Mine Operations Appeals (Board) and the Federal courts had occasion to address the term "imminent danger" in a series of decisions arising under the Federal Coal Mine Health and Safety Act of 1969 (1969 Coal Act). In *Freeman Coal Mining Company*, 2 IBMA 197, 80 I.D. 610, 1973-1974 OSHD par. 16,567 (1973), the Board interpreted it as follows:

It bears repeating that the statutory definition of the term "imminent danger" is "the existence of any condition or practice in a coal mine which could reasonably be expected

to cause death or serious physical harm before such condition or practice can be abated." The word "reasonably" necessarily means that the test of imminence is objective and that the inspector's subjective opinion need not be taken at face value. It also suggests that each case must be decided on its own peculiar facts. The question in every case is essentially the proximity of the peril to life and limb. Put another way: would a reasonable man, given a qualified inspector's education and experience, conclude that the facts indicate an impending accident or disaster, threatening to kill or to cause serious physical harm, likely to occur at any moment, but not necessarily immediately? The uncertainty must be of a nature that would induce a reasonable man to estimate that, if normal operations designed to extract coal in the disputed area proceeded, it is at least just as probable as not that the feared accident or disaster would occur before elimination of the danger.

This decision was subsequently affirmed by the United States Court of Appeals for the Seventh Circuit. *Freeman Coal Mining Company v. Interior Board of Mine Operations Appeals*, 504 F.2d 741 (7th Cir. 1974).

In *Old Ben Coal Corporation v. Interior Board of Mine Operations Appeals*, 523 F.2d 25 (7th Cir. 1975), the Petitioner, Old Ben, argued that the term "imminent danger" was intended to apply only to situations presenting an actual, immediate danger. The court declined to adopt this interpretation, noting that in *Freeman*, supra, it had "rejected the contention that 'imminent danger' was intended to apply only to situations involving immediate danger." 523 F.2d at 33.

In rejecting the Petitioner's contention that the test for "imminent danger" should be limited to a "reasonable likelihood" of danger, the court noted that a similar contention had been considered and rejected by the United States Court of Appeals for the Fourth Circuit in *Eastern Associated Coal Corporation v. Interior Board of Mine Operations Appeals*, 491 F.2d 277, 278 (4th Cir. 1974), aff'g *Eastern Associated Coal Corporation*, 2 IBMA 128, 136, 80 I.D. 400, 1971-1973 OSHD par. 16,187 (1973). The court observed that Eastern had argued in the Fourth Circuit that a "danger is imminent only if there is a reasonable likelihood that it will result in injury before it can be abated." 523 F.2d at 33. The Old Ben court quoted with approval the following passage from the Fourth Circuit's opinion:

The Secretary determined, and we think correctly, that "an imminent danger exists when the condition or practice observed could reasonably be expected to cause death or serious physical harm to a miner if normal mining operations were permitted to proceed in the area before the dangerous condition is eliminated."
[Emphasis in original.]

Administrative Law Judge Fauver was presented recently with an opportunity to address the subject of imminent danger withdrawal orders issued

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pursuant to the Federal Mine Safety and Health Act of 1977. Consolidation Coal Company, Docket No. MORG 78-355 (February 28, 1979). Although the language of the 1977 Mine Act is the same as the language of the 1969 Coal Act as relates to the subject of "imminent danger," the legislative history of the 1977 Mine Act disavows any intent on the part of Congress that the Commission adhere to that portion of the Board's requirement in Freeman, supra, that "it is at least as probable as not that the feared accident or disaster would occur before elimination of the danger." The Senate Committee Report states:

The Committee disavows any notion that imminent danger can be defined in terms of a percentage of probability that an accident will happen; rather the concept of imminent danger requires an examination of the potential of the risk to cause serious physical harm at any time. It is the Committee's view that the authority under this section is essential to the protection of miners and should be construed expansively by inspectors and the Commission.

S. Rep. No. 95-181, 95th Cong., 1st. Sess. (1977), reprinted in LEGISLATIVE HISTORY OF THE FEDERAL MINE SAFETY AND HEALTH ACT OF 1977 at 626 (1978).

Additionally, the legislative history makes it equally clear that the "imminent danger withdrawal order is designed to afford miners immediate protection in those situations where a condition or practice in a mine could reasonably be expected to cause death or serious physical harm before such condition or practice can be abated." S. Rep. No. 95-181, 95th Cong., 1st. Sess. (1977), reprinted in LEGISLATIVE HISTORY OF THE FEDERAL MINE SAFETY AND HEALTH ACT OF 1977 at 626 (1978) (emphasis added). The fact that such orders are intended to provide miners with immediate protection under the above-described conditions, indicates that the benefit of any doubt should be resolved in favor of withdrawal. See, District 6, United Mine Workers of America v. United States Department of the Interior Board of Mine Operations Appeals, 562 F.2d 1260, 1267 (D.C. Cir. 1977).

In a review proceeding involving an imminent danger withdrawal order, MSHA is under an obligation to go forward with the evidence and make out a prima facie case. Thereafter, under the rules of procedure in effect when this proceeding was commenced and at the time of the hearing, the ultimate burden of proof was placed on the operator to overcome MSHA's case by a preponderance of the evidence with respect to each element of proof in dispute, except as relates to a violation of law. Zeigler Coal Company, 4 IBMA 88, 82 I.D. 111, 1974-1975 OSHD par. 19,478 (1975); Old Ben Coal Corporation, 523 F.2d 25, 39-40 (7th Cir. 1975). Accordingly, the ultimate burden of proof with respect to the lack of imminence in the danger was upon the operator in this review proceeding.

It is my opinion that such rule of law is applicable to the ultimate determination of this case. However, beyond this, MSHA

has not only presented a prima facie case, but it has also preponderated over the evidence of the Applicant.

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Exhibit 0-9 is a schematic drawing of the electrical system for a typical slusher at the Climax Mine installed after 1971 or 1972 (Tr. II at 61, 125, 131). Mr. Pupera indicated that the electrical system shown in Exhibit 0-9 was the same as the electrical system on the 615-14 slusher, although he was not completely certain (Tr. II at 131-132). Since Mr. Williams testified that the 615-14 slusher was installed in late 1976 or early 1977 (Tr. II at 221), I find that it is more probable than not that they are the same.

The slusher had a 150-horsepower motor (Tr. I at 262, Exh. 0-9). Inspector Freilino testified that he believed the slusher installations were 460 or 480, three-phase, 60-cycle AC (Tr. I at 322, 350). (FOOTNOTE 6) The slusher motor was provided with electricity through a 2-0 cable containing three interspersed No. 6 ground wires. These ground wires are connected to the frame of the slusher and back to the grounding conductors that run through the drift of the mine. This grounding conductor runs through the drift of the mine and returns to the substation power source and is connected to the grounding point of the entire power system (Tr. II at 60, 70-71; Exh. 0-9). Power was provided from a 480-volt substation located 1,000 feet down the drift from 615-14 (Tr. II at 63-64). According to Inspector Freilino, these 150-horsepower slusher installations have motor speeds of 900 rpms (Tr. I at 261-262).

The starter leg wire runs from a switch on the mine wall to the transformer in the switch vault (Exh. M-4, 0-9). This switch operates a coil or an electric magnet, described as the motor control relay, which supplies power to the slusher motor (Tr. I at 265, 316). The starter leg wire carries approximately 120 volts (Tr. II at 208). The control circuit has a 15-amp circuit breaker located in one wire coming from the secondary to the transformer (Tr. II at 67, 91, 177, 217, Exh. 0-9). There are two 600-volt, 3-amp fuses in the wires to the H-480 volt transformer (Tr. II at 67, 92). These fuses were in each leg of the wire coming from the phase conductors on the primary side of the transformer (Tr. II at 67). This transformer reduces the voltage entering the control circuit from 480 volts to 120 volts (Exh. 0-9). Grounding is provided by a bare, external No. 4 copper wire running from the slusher frame back to the switch vault and from the slusher frame to the slusher starter switch (Exh. 0-9; Tr. II at 60, 64, 68).

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The starter leg wire (red line on Exhibit O-9) was a No. 12, two-conductor, CV-type, SO cord (Tr. II at 217, 373). It was described as being a 20-amp cable (Tr. II at 217). Mr. Williams testified that the outer jacket was composed of neophrene and that he believed the inner insulation was composed of a butyl-type rubber (Tr. II at 217). Mr. Pupera testified that the cable's inner and outer insulation were flame-retardant (Tr. II at 105). Mr. Williams stated that since the inner insulation was 600-volt insulation, it would be three sixty-fourths of an inch thick (Tr. II at 371).

The outer jacket is comprised of considerably stronger material than the inner insulation (Tr. I at 342). Accordingly, the inner insulation is damaged more easily than the outer jacket (Tr. II at 119).

Mr. John Reddington, the electrician who abated the condition cited by Inspector Enderby, inspected the ground connections visually after the order was issued (Tr. II at 159). He found the ground wires both intact and tight in the lugs. They were described as tight on both the frame and the toggle switch (Tr. II at 157-159). He inspected the No. 4 ground wire and found it properly attached to the motor frame (Tr. II at 158). The No. 6 ground wires and the 2-0 cable were properly attached (Tr. II at 158-159).

Mr. Martinez testified that when he first observed the starter leg wire, it was in contact with a flange located on the motor driveshaft (Tr. II at 295-298, 303-308; Point A on Exh. M-13). The cable was being supported by the 90-degree edge of the flange (Tr. II at 295-298; Point A on Exh. M-13). The best available evidence indicates that the flange rotated with the driveshaft (Tr. I at 50-51; 68; Tr. II at 298, 301-302). The driveshaft rotated at approximately 875 to 900 rpms (Tr. I at 261-262; Tr. II at 211-212). Mr. Williams testified in behalf of the Applicant that, assuming the wire was in the position indicated on Exhibit M-13 with the driveshaft turning, it would have taken the cable (Exh. O-4) 4 to 6 weeks of continuous contact with the flange to develop the amount of wear present (Tr. II at 368-369). Similarly, he testified that it would have taken an additional 3 weeks for the cable to wear through the remainder of the inner and outer insulation and expose a bare conductor (Tr. II at 365-370). Additionally, he indicated that the presence of oil or lubricants would decrease the rate of wear (Tr. II at 367-368). According to Mr. Williams, oil does not have an immediate deteriorating effect on the outer jacket of the SO-type cable. He did not know whether the inner insulation of such cable is oil resistant (Tr. II at 374-375). Contrary to the position of the Applicant's witnesses, Mr. Freilino, on behalf of MSHA, was of the opinion that the insulation on the wire could wear through at any time (Tr. I at 345).

In view of the actual condition of the cut in the wire, the claims of Applicant's witnesses that the wire would not constantly remain in the same place on the shaft, and also in view of the requirement of the Applicant that the slusher

operator check the electrical cable, ground wires and insulated conductors for damage, to report any damage to the electrician, it seems incredible that the cutting of the wire took place over a long period of time without detection sooner.

The inspector thought that the inner conductors were bare, and issued the order of withdrawal in accordance with this belief (Tr. I at 150, 152, 187; Exh. M-1). However, after examining the cable at the hearing, he admitted that bare conductors were not exposed (Tr. I at 250). The outer jacket had been worn through and part of the inner insulation had been worn (Tr. I at 295; Exh. O-4). Accordingly, the question of imminent danger must be evaluated with reference to the actual condition of the cable on August 31, 1978, in determining whether a reasonable man, given a qualified inspector's education and experience, would objectively estimate that if normal mining operations in the disputed area continued, the feared accident or disaster would occur before elimination of the danger. In the instant case, this requires an evaluation of both the electrocution hazard and the fire hazard.

The testimony of three expert witnesses, Inspector Freilino, Mr. Pupera, and Mr. Williams, provides the most probative evidence of the electrocution hazard.

The first consideration is the two-part grounding system described above. The first part of the system entails the bare No. 4 copper wire used to ground the 120-volt control circuit, while the second part refers to the three No. 6 wires used to ground the slusher. With respect to the former, Inspector Freilino characterized it as inadequate because it failed to comply with the NEC requirements. Therefore, in assessing his answers to various hypothetical questions in which he was asked to assume that the grounding on the control circuit was either inadequate or adequate, it must be borne in mind that the inspector defines the term "adequate," at the very least, as a grounding system in compliance with the NEC, while defining an "inadequate" system as one that is not in compliance with the NEC. Mr. Pupera, on the other hand, viewed the control circuit grounding system as adequate. In his opinion, the location of the wire did not create a problem by way of increasing the impedance to the ground (Tr. II at 69-70). In this regard, it should be borne in mind that the basic purpose of a ground wire is to provide the lowest possible impedance for the flow of fault current (Tr. II at 69-70). (FOOTNOTE 7)

With respect to the three No. 6 wires used to ground the slusher, the record reveals that they were interspersed throughout the 2-0 cable that provided power to the slusher motor. Assuming that Inspector Freilino adequately described all of the relevant NEC grounding requirements, then this system is adequate even under the NEC's allegedly more stringent provisions. Therefore, in assessing his answers to hypothetical questions, it must be assumed that this portion of the grounding system was viewed as adequate by the inspector. These factors have been taken into consideration in assessing the various hypothetical questions addressed to the witnesses. They are too numerous to repeat. The portions material to the resolution of this matter have been taken into account in the passages appearing below.

The fact that the inner insulation had not been completely worn through so as to expose a bare conductor does not preclude the existence of a shock or fire hazard. One of the key factors is the dielectric strength of the insulation. Inspector Freilino described the concept of dielectric strength as "the insulating ability of a material that can be determined through laboratory test, and it is usually assigned a value of so many volts per thousandths of an inch" (Tr. II at 398). A fault condition exists whenever current flows through a circuit in an undirected or unintentional path (Tr. II at 398). In order "to get into" a fault condition, the dielectric strength would have to be lower than the voltage passing through the circuit (Tr. II at 399). Once the dielectric strength is less than the voltage being carried in the cable, the insulation breakdown is almost instantaneous (Tr. II at 401-402). The wire need not be bare, but merely reduced to the point where the insulation would be insufficient to restrain the 120 volts from leaking through to the grounded object (Tr. II at 398). At this point, the cable would become, in effect, a bare conductor even though some insulation remained. At this point, a person could receive a shock from touching the worn area (Tr. II at 402). The same holds true for the fire hazard (Tr. I at 293-294).

At one point in his testimony, Mr. Pupera testified that no shock hazard would be present if the insulation had worn off and a bare conductor made contact with either the slusher motor frame or the driveshaft. He attributed this to the grounding system on the slusher which would trip the circuit breaker on the secondary of the control transformer (Tr. II at 90). Mr. Pupera stated that the 15-amp circuit breaker on the 120-volt starter leg wire would trip in approximately 1/120th of a second. This would occur if the bare conductor made contact with either point as long as the circuit was solidly grounded to the slusher frame, i.e., in "good contact" with the slusher frame (Tr. II at 91, 138-139). Mr. Pupera stated that if the circuit breaker failed to trip under the ground fault condition, one or both of the 3-amp fuses on the lines to the 480-volt transformer would blow open and deenergize the circuit (Tr. II at 92).

As for the grounding protection, he testified that if a bare conductor made contact with one of the two above-mentioned points, the ground would provide a low impedance path back to the

power source lower than the human body's impedance (Tr. II at 92). Mr. Pupera claimed that no shock hazard would be present for a person touching the slusher frame (Tr. II at 93).

He further testified that if none of the ground wires were attached to the slusher motor frame, the operator would not be exposed to a shock hazard if a bare wire made contact with the frame. He attributed this to the manner in which the slushers were installed, resulting in a low impedance in connection with the earth itself. According to Mr. Pupera, the earth becomes another grounding conductor back to the power source. He even described this earth connection as far more reliable than the ground wires (Tr. II at 94). To the best of his recollection, tests of the earth connection in the 615-14 slusher showed an impedance of 2.5 ohms (Tr. II at 94). He classified this figure as much lower than the human body's resistance (Tr. II at 98). He felt that the slusher operator's resistance would be well in the hundreds of thousands of ohms because he is required to wear rubber gloves and boots (Tr. II at 98).

However, he later admitted that an individual not wearing gloves or boots could receive a shock if he made contact with a bare wire on the starter circuit. The extent of the injury sustained would depend upon the amount of current flowing through the body. He acknowledged that under the proper conditions, a lethal injury could occur (Tr. II at 139-140). This would occur if the bare wire was not in contact with the slusher because there would be no fault current flowing (Tr. II at 140).

A review of the testimony reveals that the amount of current, in terms of amperes, that can reasonably be expected to pass through the human body can be calculated with reference to Ohm's Law. According to Mr. William's, Ohm's Law states that amperage equals voltage divided by resistance (Tr. II at 235; Climax's Posthearing Brief at p. 14). Inspector Freilino testified as to the relationship between milliamps and physical injury. Muscular contraction starts at approximately 10 milliamps. Ventricular fibrillation could occur at 50 to 75 milliamps. The heart stops beating at approximately 100 milliamps (Tr. II at 410). According to the inspector, one would not reasonably anticipate serious injury below the 10 milliamp range (Tr. II at 414-415). He testified that prolonged exposure to 10 milliamps can produce permanent damage to internal organs (Tr. II at 411). The average resistance of the human body, according to the published standard for the average resistance hand-to-hand across the chest cavity, is 1,000 ohms (Tr. II at 412). Accordingly, application of the Ohm's Law formula reveals that 120 volts divided by 1,000 ohms yields .12 amps or 120 milliamps. This figure is well within the lethal range. As stated above the Applicant's expert, Mr. Pupera, stated that with the proper conditions a person touching a bare 120 volt wire could sustain a lethal shock (Tr. 139-140).

In summary, an individual touching a bare 120-volt wire that was not in contact with the metal portion of the slusher could, under the proper conditions, receive a fatal shock. A fault condition can occur when the dielectric strength of the cable is lower than the voltage passing through the circuit, and this can be induced by a reduction of the insulation. This results in an insulation breakdown that is virtually instantaneous, with the

insulated cable assuming the properties of a bare wire, and with the same attendant shock hazards. The condition of the wire, viewed in

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conjunction with the possibility of .12 amps passing through the body, reveals that a danger was present. The fact that a person wearing dry boots in good condition would not receive a shock (Tr. II at 425-428) is not controlling. The record clearly establishes that the presence of water sprays rendered the area damp (Tr. I at 185-186).

Climax has not established that the danger was not imminent. The testimony adduced with respect to the tripping time of circuit breakers is insufficient to sustain this burden. Also MSHA, by a preponderance of the evidence has established that an imminent danger existed. This is especially true in light of Mr. Pupera's above-mentioned testimony (Tr. II at 139-140). The tripping of this breaker would be dependent upon the creation of a ground fault condition which would not occur until the wire was touched by human hands if the damaged spot was facing upward. Thus, a fatal injury could be sustained. Additionally, I find it highly improbable that this cable would have remained in continuous contact with the metal portions of the slusher. This is based upon two sets of observations. First, the cable (Exh. 0-4) contains a second, similar groove, although it has not penetrated beneath the outer jacket. The mere presence of the second groove indicates that the cable was moved at some point in time and further indicates that the cable would probably be moved again in the ordinary course of mining. Second, the slusher operator would have to move the cable in order to properly examine it in the fashion dictated by the company (Tr. II at 117).

Most of the evidence adduced by Climax addresses the probability of occurrence. As indicated by the legislative history of the 1977 Mine Act, the probability of occurrence is not a controlling factor in determining the validity of an imminent danger order.

The condition of the wire was such that not only was the outer jacket of the cable worn through but some of the inner insulation was also worn. Exactly how much could not be determined by the visual examination which an inspector could make under the circumstances here. Therefore, a high potential of risk of serious physical harm existed. Accordingly, a reasonable man, given a qualified inspector's education and experience would objectively estimate that if normal mining operations in the disputed area continued, a serious shock or electrocution could occur before elimination of the danger.

Accordingly, it is found that the electrocution hazard presented an imminent danger within the meaning of the 1977 Mine Act.

In this regard it must be remembered that the legislative history of the 1977 Mine Act, as well as recent decisions of the Federal courts, have evolved to the point where the benefit of any doubt must be cast in favor of withdrawal.

As referred to previously in this decision, the legislative history of the 1977 Mine Act indicates that imminent danger is

not to be "defined in

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terms of a percentage of probability that an accident will happen; rather the concept of imminent danger requires an examination of the potential of the risk to cause serious physical harm at anytime."

The legislative history further indicates that "the authority under this section is essential to the protection of the miners and should be construed expansively by inspectors and the Commission." The legislative history goes on to point out that an: "imminent danger withdrawal order is designed to afford miners immediate protection in those situations where a condition or practice in a mine could reasonably be expected to cause death or serious physical harm before such condition or practice can be abated." S. Rep. No. 95-181, 95th Cong., 1st. Sess. (1977) supra.

Finally one Federal court recently stated that: "[t]he safety of the miner is the single most crucial motivation behind the [1969 Coal Act]." The court went on to state that the congressional hearings, the first section of the statute and judicial review "support the clear intent of Congress that coal mines, or areas of coal mines, in which imminent danger was found to exist must be evacuated at once, with the benefit of any doubt cut in favor of withdrawal." District 6, United Mine Workers of America v. United States Department of the Interior Board of Mine Operations Appeals, supra.

As relates to the purported fire hazard, Inspector Enderby testified that exposed inner insulation creates a fire hazard if it is not fire-retardant (Tr. I at 211). According to the inspector, electrical energy or heat from the conductors inside the insulation would be the source of the fire (Tr. I at 212).

At one point in his testimony on November 29, 1978, Inspector Freilino set forth his opinions with respect to the potential fire hazard, in which he assumed that the starter leg wire was ungrounded (Tr. I at 293-294). His testimony on January 31, 1979, reflected that he had observed approximately 12 slusher installations on the Storke level. He testified that there are points on the machines requiring lubrication, and that he had seen some areas on shafts containing a small amount of grease. Foreign matter, such as grease, oil or moisture, entering the cable through a hole in the jacket will increase deterioration and eventually cause an internal short between the conductors. In response to a question designed to determine how such conditions could create a fire, he stated that an arcing condition would occur before the cable actually failed and tripped the breaker (Tr. II at 352-353). However, it is unclear whether this circumstance relates solely to an ungrounded starter leg wire or whether it relates to a cable grounded by a bare No. 4 copper wire. Considering all surrounding factors it cannot be found that MSHA has established a prima facie case of an imminent danger as relates to the fire hazard.

V. Conclusions of Law

1. The Applicant, Climax Molybdenum Company and its Climax Mine are subject to the provisions of the Federal Mine Safety and Health Act of 1977.

and the courts may not grant temporary relief from the issuance of any order under subsection (a)."

~FOOTNOTE_TWO

2 Section 107(a) provides:

"If, upon any inspection or investigation of a coal or other mine which is subject to this Act, an authorized representative of the Secretary finds that an imminent danger exists, such representative shall determine the extent of the area of such mine throughout which the danger exists, and issue an order requiring the operator of such mine to cause all persons, except those referred to in section 104(c), to be withdrawn from, and to be prohibited from entering, such area until an authorized representative of the Secretary determines that such imminent danger and the conditions or practices which caused such imminent danger no longer exist. The issuance of an order under this subsection shall not preclude the issuance of a citation under section 104 or the proposing of a penalty under section 110."

~FOOTNOTE_THREE

3 The transcript consists of two parts. Part I records the proceedings of November 28 and November 29, 1978, while Part II records the proceedings of January 30, 31 and February 1, 1979. Part I and Part II are not consecutively numbered. Accordingly, references to the transcript in this decision will make reference to both the page on which the cited information is contained and the part of the transcript containing that page. For example, a citation to page 308 of Part I of the transcript will be made as follows: (Tr. I at 308). A series of references to the transcript will be made as follows: (Tr. I at 51, 79, 97-102, 311-319; Tr. II at 63, 87, 108-115).

~FOOTNOTE_FOUR

4 Mr. Edward Farley, president of Local No. 2-24410, Oil, Chemical and Atomic Workers' International Union was present at the hearing on November 28, 1978. Mr. John L. Reddington, a member of Local No. 1823, International Brotherhood of Electrical Workers was present at the hearing on January 30, 1979. Aside from Mr. Reddington's status as a witness, both men acted as union observers during the hearing. They did not attend as advocates for their respective unions (Tr. I, 4-6; Tr. II 2-5).

~FOOTNOTE_FIVE

5 30 CFR 57.12-25 provides: "Mandatory. All metal enclosing or encasing electrical circuits shall be grounded or provided with equivalent protection. This requirement does not apply to battery-operated equipment."

~FOOTNOTE_SIX

6 The precise voltage of the slusher motor is not clearly revealed by the record. The best available evidence indicates that its voltage lies between 440 and 480 volts (Tr. I at 322; Tr. II at 66-67, 92, Exh. 0-9). Exhibit 0-9 reveals that power was transmitted from the 480 volt substation to the slusher motor along cables denominated at one point as 440 volt power cables.

Presumably, this means that the slusher motor operates on 440 volts, although neither Exhibit 0-9 nor the testimony of the witnesses reveal the significance, if any, arising from connecting the slusher to the 480 volt substation via a 440 volt cable. In view of the other evidence contained in the record, this ambiguity does not affect the ultimate disposition of this case.

~FOOTNOTE_SEVEN

7 According to Mr. Pupera, a grounding system is basically for the purpose of returning current to its power source. There are two types of grounding systems--an equipment ground and a system ground. Equipment grounding is installed to protect personnel from shock hazards. This is accomplished by providing a path of very low resistance in comparison to the human body, since current will follow the path of least resistance. If the grounding system is properly set up, electricity will take the path through the grounding system rather than through the human body because the resistance within the grounding system will be lower than the resistance of the human body (Tr. II at 58-59). According to Mr. Pupera, the electrical systems on the slushers are equipment-grounded and are connected to the system ground (Tr. II at 59).