The issue presented here is whether a Commission administrative law judge correctly held that two violations of mandatory safety standards were "significant and substantial" within the meaning of 30 U.S.C. § 814(d)(1), section 104(d)(1) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 801 et seq. (1982) ("Mine Act"). We affirm.

The facts of the case are as follows. In August 1982, Inspector Robert Newhouse of the Department of Labor's Mine Safety and Health Administration ("MSHA") issued to U.S. Steel Mining Company ("USSM") nine citations under section 104(a) of the Mine Act. 30 U.S.C. § 814(a). The citations were issued at USSM's Cumberland Mine located in Greene County, Pennsylvania. In addition to alleging a violation of a mandatory safety standard, each of the nine citations also alleged that the cited violation was significant and substantial ("S&S").

Thereafter, the Secretary of Labor filed with this independent Commission a proposal for assessment of civil penalties for the nine alleged violations. A hearing was held during which the S&S designations in two of the citations were deleted and a third citation was vacated by the Commission administrative law judge at the Secretary's request. USSM admitted the eight remaining violations, but contested the inspector's significant and substantial findings as to six of them, and the penalty amounts proposed by the Secretary. The judge then held that the six violations were significant and substantial and he assessed penalties. 5 FMSHRC 1728 (October 1983) (ALJ).

We subsequently granted USSM's petition for review of the judge's decision, but only for two of the violations found to be significant and substantial. One of the violations before us on review (citation 2012065) was established because unmarked trailing cable plugs were found to be connecting underground mine machinery to a power center. The other violation (citation 2012074) resulted from an oxygen cylinder and an acetylene
cylinder that were left unsecured, leaning against a rib in a shuttle car roadway. The primary issue as to each violation is whether substantial evidence supports the judge's significant and substantial findings. Preliminary to our addressing the merits of the case, we briefly set forth the interpretation that we have accorded the statutory term, significant and substantial.

Section 104(d)(1) of the Mine Act provides:

If, upon any inspection of a coal or other mine, an authorized representative of the Secretary finds that there has been a violation of any mandatory health or safety standard, and if he also finds that, while the conditions created by such violation do not cause imminent danger, such violation is of such nature as could significantly and substantially contribute to the cause and effect of a coal or other mine safety or health hazard, and if he finds such violation to be caused by an unwarrantable failure of such operator to comply with such mandatory health or safety standards, he shall include such finding in any citation given to the operator under this Act....


The Commission first interpreted this statutory language in Cement Division, National Gypsum Co., 3 FMSHRC 822 (April 1981). There we held:

...[A] violation is of such a nature as could significantly and substantially contribute to the cause and effect of a mine safety or health hazard if, based on 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.

3 FMSHRC at 825 (emphasis added). In Mathies Coal Company, 6 FMSHRC 1 (January 1984), we reaffirmed the analytical approach set forth in National Gypsum, and stated:

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.

6 FMSHRC at 3-4 (footnote omitted). Accord Consolidation Coal Company, 6 FMSHRC 189, 193 (February 1984).
As to the four elements set forth in Mathies, we note that the reference to "hazard" in the second element is simply a recognition that the violation must be more than a mere technical violation—i.e., that the violation presents a measure of danger. See National Gypsum, supra, 3 FMSHRC at 827. We also note that our reference to hazard in the third element in Mathies contemplates the possibility of a subsequent event. This requires that the Secretary establish a reasonable likelihood that the hazard contributed to will result in an event in which there is an injury. The fourth element in Mathies requires that the potential injury be of a reasonably serious nature. Finally, in U.S. Steel Mining Co., Inc., PENN 82-336 (July 11, 1984), we recently reemphasized our holding in National Gypsum that the contribution of the violation to the cause and effect of a mine safety hazard is what must be significant and substantial.

Citation No. 2012065

On August 4, 1982, MSHA Inspector Newhouse issued a citation to USSM upon observing that the electrical plugs (also referred to as "disconnecting devices") for the trailing cables on a continuous mining machine and a shuttle car were not properly tagged, or otherwise identified, to correspond with the receptacles at the mine section's power center. The citation alleged a violation of 30 C.F.R. § 75.601, which provides in relevant part:

Disconnecting devices used to disconnect power from trailing cables shall be plainly marked and identified and such devices shall be equipped or designed in such a manner that it can be determined by visual observation that the power is disconnected.

At the time that the citation was issued, there were three pieces of mining equipment in the mine section—the cited continuous mining machine and shuttle car, as well as a second shuttle car. The trailing cable plug to the second shuttle car was properly identified.

In finding the violation to be significant and substantial the judge stated, "The hazard resulting from the violation is that someone could contact an energized cable thinking it was disconnected, or could inadvertently plug in the wrong cable." 5 FMSHRC at 1731. The judge reasoned that although the trailing cable plugs to the continuous mining machine and the shuttle car were "very different in size and appearance and could not be confused with one another," / the unmarked shuttle car trailing cable plug could be confused with the trailing cable of the other shuttle car that was on the section when the citation was issued. Id. In addition, the judge noted that although the power center into which the trailing cables are plugged has a keying system that physically prevents a plug from being inserted into the wrong receptacle, "the keys are often taken off the cables, and it is not known whether the keys were present on the day the citation was issued." 5 FMSHRC at 1731.

/ The trailing cable plug to the shuttle car is square, while the trailing cable plug to the continuous mining machine is round. Also, the plug to the continuous mining machine is larger.
On review, USSM does not argue that any injury occurring as a result of a trailing cable accident would not be of a reasonably serious nature. It argues only that the record does not support the judge's implicit holding that there was a reasonable likelihood of such an electrical incident and resulting injury occurring. *National Gypsum*, supra. We disagree.

The electrical hazard is presented because a miner could mistake the unmarked shuttle car trailing cable plug for the plug of another shuttle car or for a similar looking plug of a different piece of equipment and insert that plug into the power center. Inspector Newhouse described the hazard as the "[p]ossibility of somebody coming in contact with the energized cables, either through repair of a cable or whatever reason; somebody inadvertently plugging in the wrong cable." Tr. 57. The inspector described the scenario as follows:

[S]ay you have the shuttle car; say there is electrical problems with it. An electrician comes in and he is in a hurry and he gets in the cable. He just unplugs it because he has to check something. You know, somebody else may be fooling around with a fan cable, or whatever; and somebody is told to go up and put the power on. They see that cable and they plug it in. The man is in a hot circuit.

Tr. 80. In fact, a fatal accident had occurred at the Cumberland Mine in January 1979, involving trailing cables. At that time two crews of mechanics were working on two shuttle cars that were down for repairs on the same mine section. One of the mechanics was electrocuted when the crews mixed up the two trailing cables and a miner, believing that he was plugging in the repaired shuttle car cable, plugged in the cable to the other (unrepaired) shuttle car instead. The miner electrocuted was working on the bare power wires of the cable that was plugged into the power center. 2/

As to the likelihood of such an occurrence, the inspector stated, "It's very probable it could occur with the number of cables and the number of power conductors in that mine." Tr. 63 (emphasis added). 3/ Moreover, as

2/ USSM argued that the events resulting in the January 1979 fatal accident could not reoccur because of the subsequent addition to the electrical system of a device referred to as a "FEMCO" unit. Robert Bohack, a USSM safety engineer, testified that the FEMCO unit is a tamper-proof device that prevents the by-passing of the trailing cable's ground continuity system (apparently a major cause of the January 1979 fatal accident). Although Inspector Newhouse appeared to take issue with Bohack's testimony regarding the FEMCO unit, the judge made no specific finding on this point. Nevertheless, relying on the testimony of Bohack, the judge stated, "If a break occurs in a power lead, the power would be cut by the ground continuity check. However, it is possible to have a bare wire not cut, without interrupting the continuity." 5 FMSHRC at 1731.

3/ Bohack, the USSM safety engineer, also testified that "there are other plugs that are the same size as the shuttle car plug." Tr. 84.
noted previously, there were two shuttle cars on the cited mine section at the time that the citation was issued thus increasing the likelihood of a trailing cable mix-up. Inspector Newhouse indicated that it would not be unusual for two shuttle cars on the same mine section to be down for repairs at the same time. He estimated that such an event could occur about twice a month. The inspector also testified that a trailing cable mix-up could occur in the event of an emergency, such as a cable fire. In that case, the inspector stated, a miner would not have enough time to determine to which piece of machinery the unmarked trailing cable plug belonged.

USSM safety engineer Bohack testified that it was not reasonably likely that the trailing cable plug violation would result in an accident and injury. He stated, "I thought that someone would have to go out of their way to cause an injury under the circumstances. They would really have to go out of their way and I really don't see how that could have happened with the ground continuous checks on this system." Tr. 83. The operator argues that because only one of the two shuttle car plugs was unmarked, "a simple process of elimination" would enable a person to know the identity of the cables. Br. at 3. We cannot agree with this argument or with the further contention "If someone mixed up the plugs, they [sic] obviously not [have been] interested in taking elementary steps to identify what they were working with and presumably would [have] ignore[d] the tag had it been there." Br. at 4. This argument ignores the reality, demonstrated by the accident in 1979, that miners in a hurry may easily fail to verify which cable is which unless all cables are "plainly marked." 4/

In addition, Bohack did not effectively dispute the inspector's testimony that the keying system used at the mine to prevent the trailing cable plugs from being inserted into other than their assigned receptacle was relatively unreliable. Inspector Newhouse questioned the reliability of that keying system, noting that it was not uncommon for miners at the Cumberland Mine to modify the system when a receptacle is needed. He described the possibility of such an occurrence as being "highly possible" and "probable." Tr. 77. Although USSM safety engineer Bohack testified that it is "more likely" that the key will be on the plug, he also testified that "it's possible for the key to be taken off." Tr. 87. Neither the MSHA inspector nor the company safety engineer was able to recall whether the cited trailing cable plugs were equipped with keys when the citation was issued.

In sum, we conclude that the record evidence provides substantial support for the judge's finding that the trailing cable plug violation was significant and substantial.

Citation No. 2012074

MSHA Inspector Newhouse issued this citation to USSM on August 9, 1982, upon observing an unsecured oxygen cylinder and an unsecured acetylene cylinder leaning against a rib in an underground shuttle car roadway. The inspector charged a violation of 30 C.F.R. § 75.1106-4(g), a mandatory safety standard that provides:

4/ Cf. Great Western Electric Company, 5 FMSHRC 840, 842 (May 1983) (relying on skill and attentiveness of miners to prevent injury "ignores the inherent vagaries of human behavior").
Liquefied and non-liquefied compressed gas cylinders shall be located no less than 10 feet from the worksite, and where the height of the coal seam permits, they shall be placed in an upright position and chained or otherwise secured against falling. [Emphasis added.]

Each of the unsecured gas cylinders weighed approximately 120 pounds. The gas cylinders had been used in repairing a continuous mining machine during the previous, non-production, midnight shift and coal production on the day shift had not yet begun when the citation was issued.

The issues before the Commission administrative law judge as to this citation were whether the violation was S&S and the penalty to be assessed. The judge upheld the S&S designation, noting that the mine section was preparing to begin a new shift and that the compressed gas cylinders could have been knocked over by a shuttle car, or other force, and could have ruptured. In the judge's view, "the valve could be broken or the cylinders ruptured, releasing the compressed gas causing the cylinders to become as missiles." 5 FMSHRC at 1732.

The issue on review is whether the record supports the judge's implicit holding that there was a reasonable likelihood that an accident, and resulting injury, would occur involving the unsecured gas cylinders. Again, USSM does not contend that any injury occurring would not be of a reasonably serious nature. 5/ Although our task is made more difficult by the brevity of the judge's discussion of the record and the basis for his decision, we hold that substantial evidence supports the judge's significant and substantial finding.

The inspector testified that shuttle cars making a left-hand turn from the roadway where the gas cylinders were located into the nearby No. 3 entry were likely to strike and to damage the unsecured cylinders. The shuttle cars were described as being approximately 8 to 10 feet in width and 15 to 18 feet in length. The inspector testified, "By making a left-hand turn and swinging in that direction, the back end of the buggy would have been in close proximity to these tanks." Tr. 165. The inspector added that the operator of an "off standard" shuttle car might not see the cylinders because he would be on the other side of the car. In the inspector's view, whether a shuttle car operator hit the cylinders "would really depend on how conscientious your operator is, how much confusion is involved," and that such an event occurring was a "probable possibility." Tr. 174.

5/ To the extent that USSM's brief on review can be read as challenging the judge's finding of a violation, the challenge is rejected. First, the fact of a violation was conceded before the judge. 5 FMSHRC at 1728. Second, no issue as to the merits of the violation was raised in USSM's petition for review. See 30 U.S.C. § 823(d)(2)(A)(iii) (absent good cause showing, issues may not be raised for the first time on review).
According to the inspector, the gas cylinders posed two discrete hazards should they be struck by a shuttle car: breaking the neck (i.e., the valve) of the oxygen cylinder (the neck of the acetylene cylinder was recessed and did not pose this specific hazard); and puncturing the sides of either or both cylinders. The inspector testified that should either the valve be broken off the oxygen cylinder or the cylinders' sides be punctured, the unsecured, compressed gas cylinders would be transformed into missiles that could strike the miners working on the section or could strike the section's power center and cause a fire.

The USSM section foreman who accompanied Inspector Newhouse testified that when the shuttle cars made their left-hand turn from the roadway into the No. 3 entry, there would be an approximate clearance between the shuttle car and the gas cylinders of 3 to 5 feet. The operator also relies on the fact that shuttle cars were not running on the mine section at the time the citation was issued and that the cylinders were in plastic bags awaiting shipment off the section. However, the section foreman "could not definitely say" when the cylinders were expected to be transported from the area. Tr. 186. He admitted that, "They were preparing to operate on the day shift." Tr. 169.

We cannot agree that the clearance of, at best, five feet between a turning shuttle car and these unsecured cylinders is enough to disturb on review the judge's conclusion that the violation was significant and substantial. Driving habits and mining conditions are too variable. In addition, given the size of the shuttle cars that use the roadway, we are not prepared to say that the record does not support the judge's conclusion that the cylinders could have ruptured. Thus, we hold that substantial evidence of record supports the judge's holding that an incident involving the unsecured, compressed gas cylinders was reasonably likely to occur.

Accordingly we affirm the judge's significant and substantial findings as they relate to citations 2012065 and 2012074. USSM additionally argued on review that the sole appropriate penalty for a violation that is not significant and substantial is $20. See 30 C.F.R. § 100.4 ("Determination of penalty; single penalty assessment.") Although it is unnecessary to reach that issue here, we recently have rejected that same argument in U.S. Steel Mining Co., Inc., 6 FMSHRC 1148 (May 1984).
Commissioner Lawson concurring:

On the basis of the criteria set forth in my separate opinion in Cement Division, National Gypsum Co., 3 FMSHRC 822 (April 1981), I concur in finding the violations in this case to be significant and substantial within the meaning of section 104(d)(1) of the Mine Act, 30 U.S.C. § 814(d)(1).

A. E. Lawson, Commissioner

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