

FEDERAL MINE SAFETY AND HEALTH REVIEW COMMISSION

1244 SPEER BOULEVARD #280
DENVER, CO 80204-3582
303-844-3577/FAX 303-844-5268

September 24, 1998

SECRETARY OF LABOR,	:	CIVIL PENALTY PROCEEDING
MINE SAFETY AND HEALTH	:	
ADMINISTRATION (MSHA),	:	Docket No. WEST 94-645-M
Petitioner	:	A.C. No. 02-00152-05503 WJ6
	:	
v.	:	
	:	
DYNATEC MINING CORPORATION,	:	Magma/Superior Mine
Respondent	:	

DECISION

Appearances: Edward H. Fitch, IV, Esq., Office of the Solicitor, U.S. Department of Labor, Arlington, Virginia, for Petitioner;
C. Gregory Ruffennach, Esq., Durango, Colorado, for Respondent.

Before: Judge Manning

This case is before me on a petition for assessment of penalty filed by the Secretary of Labor, acting through the Mine Safety and Health Administration (AMSHA), against Dynatec Mining Corporation (ADynatec) pursuant to sections 105 and 110 of the Federal Mine Safety and Health Act of 1977, 30 U.S.C. ' ' 815 and 820 (the AMine Act). The petition alleges 14 violations of the Secretary's safety standards. A hearing was held in Denver, Colorado. The parties presented testimony and documentary evidence, and filed post-hearing briefs.

I. FINDINGS OF FACT

A. Background

The citation and orders contested in this proceeding were issued by MSHA following a fatal accident at the Magma/Superior Mine on August 10, 1993. This mine was an underground copper mine in Gila County, Arizona. The mine is no longer in operation. The accident occurred when a wooden structure that had been constructed inside the 865 Raise collapsed killing four miners who were in the raise. The mine operator was Magma Copper Company (AMagma Copper) and Dynatec was the independent contractor who constructed the raise and the wooden structure within the raise. The Secretary issued citations against both Magma Copper and

Dynatec. This proceeding involves one section 104(d)(1) citation and 13 section 104(d)(1) orders of withdrawal. The Secretary proposed a civil penalty of \$700,000 for the alleged violations.

In 1996, an indirect subsidiary of Broken Hill Proprietary Company Limited merged into Magma Copper. As a result of this merger, Magma Copper became BHP Copper, Inc. (BHP Copper). On July 17, 1998, BHP Copper, the United States Attorney for the District of Arizona, the Secretary of Labor, and the State of Arizona executed a Global Settlement Agreement (the Global Settlement), which resolved all of the issues between the parties related to the investigation of the accident by the United States and the State of Arizona. Under the Global Settlement, BHP Copper agreed to plead guilty to two misdemeanor counts under section 110(d) of the Act and to pay criminal penalties for these counts. BHP Copper agreed to pay civil penalties under section 110(a) of the Act in the amount of \$800,000. BHP Copper also agreed to pay certain sums to the State of Arizona. On July 17, 1998, a United States Magistrate Judge of the U. S. District Court for the District of Arizona approved the settlement of the criminal matters. By order dated July 23, 1998, I approved the settlement of the civil proceedings brought against Magma Copper under section 110(a) of the Mine Act.

B. The Raise

A raise is a vertical or inclined opening driven upward from a level in a mine to connect with one or more levels above. *A Dictionary of Mining, Mineral, and Related Terms*, 893 (1968). The 865 Raise (the Raise) was about 364 feet high and connected the 4000 track level with the 3763, 3700, and 3636 levels. The raise was about 10 degrees from the vertical and was angled towards the footwall.¹ The excavation for the raise was constructed to provide an opening of at least 10 feet by 20 feet. The raise was designed to serve several functions. First, it was to be an ore pass through which blasted ore-bearing rock (generally called Muck) would be dumped. This muck would be dumped down the raise to the 4000 track level for transportation to the mill. Second, the raise was to serve as a secondary escapeway. This escapeway (generally called the Manway) could be used to evacuate miners in the event of an emergency and could also be used to gain access to various parts of the raise. A drawing of the raise from Joint Exhibit A is attached to this decision as Illustration No. 1.

In order for the raise to serve as an ore pass and a manway, Magma Copper designed a rectangular wooden structure to be installed in the raise. This wooden structure contained two compartments, which were framed with ten by ten inch timber and were separated by armored cribbing. The ore pass compartment had inside dimensions of about six by eight feet. The manway compartment was about six by six feet and contained water and air lines, a ventilation pipe, a timber slide, and a series of ladders with landings. Two drawings showing the support timber of the wooden structure from Joint Exhibit B are attached to this decision as Illustration Nos. 2 and 3.

¹ A footwall is that part of the country rock which is below the ore deposit.

The wooden structure within the raise (the Araise structure®) was designed by engineers employed by Magma Copper. The timbers used to construct the raise structure were precut by Magma Copper. Dynatec drilled and blasted the raise and built the raise structure in one operation. That is, as drilling proceeded upward from the 4000 level, the raise structure was built to within a few feet of the face to provide a work platform upon which to drill the next round.

The raise structure was built in segments. Each segment is rectangular in shape and the support structure consists of side-by-side interconnected sets constructed with ten- by ten-inch timber cut to Magma's specifications. The support structure is shown in Illustrations 2 and 3 attached to this decision. In essence, the outside of the structure is framed with the ten by ten timber and the inside is lined with timber. The ore pass compartment was lined with 6- by 8-inch armored cribs. These cribs were armored with angle iron plates to contain the broken muck within the ore pass. The manway compartment was enclosed with 3-inch wooden lagging nailed outside the timber framework.

Nails, screws, and mechanical fasteners were not used to secure the framework for the raise structure. Instead, daps and tenons were present at the joints of the framework. Magma Copper relied on gravity and blocking between the framework and the rock walls of the raise to keep the structure together. Magma Copper believed that the host rock in the raise would tend to squeeze the raise structure thereby keeping it in place. The lagging along the outside of the framework for the manway was nailed into place. The cribbing used for the ore pass compartment was installed using a Abirdcage® design. Vertical steel channels were nailed to the framework on all four sides of the ore pass. The flanges on these steel channels were one-half inch deep. As the raise structure was constructed, 6- by 8-inch armored cribs were slid into the channels, one on top of another, until that section was full. The next horizontal timber frame was then placed above the last crib. The process was then repeated as the next segment was constructed on top of the previous segment. A drawing showing the construction of a birdcage from Joint Exhibit A is attached to this decision as Illustration No. 4.

As the raise structure was built, blocking was installed at each segment where the vertical and horizontal members of the framework were joined. The raise structure was framed at intervals of seven feet four inches and each frame is called a set. The sets are consecutively numbered from the bottom to the top. This blocking at each set prevented the raise structure from moving outward horizontally and kept the vertical posts in line. Rectangular 12-inch wooden blocks were placed against timber joints and wedges were used between the host rock and the blocks to tighten the blocking into place. The blocking was designed to help support the walls of the raise and to prevent these walls from crushing the raise structure in the event of movement. The number of blocks used depended upon the space between the framework and the host rock.

As each segment of the raise structure was built, the raise itself was drilled and blasted. Boards placed on top of the most recently constructed segment provided a work platform for the next round of drilling and blasting. Rock from each blast would fall between the framework of the raise structure and the host rock. This material is generally referred to as backfill.

The raise structure was not anchored into the rock wall of the raise at any location between the 4000 track level and the 3763 level, except at the feeder immediately above the track level. Such anchors are generally called bearing sets and are designed to transfer the weight of the raise structure above the bearing set to the surrounding host rock. There were no bearing sets for a distance of about 200 feet. Approximately 28 segments of the raise structure were constructed between the feeder and the 3763 level without bearing sets.

C. A Brief History of the Raise

Magma Copper solicited bids to construct the raise, the raise structure, and other facilities in December 1992. Four independent contractors, including Dynatec, submitted proposals. The scope of the work was set out in drawings and specifications developed by personnel at Magma Copper. Dynatec was awarded the contract later that month. The contract stated that Magma Copper would provide all construction materials and consumable supplies, utilities, technical and surveying services, and other services and facilities. Dynatec was to provide all labor and supervision, tools and equipment, and a safety and training program for its employees. Magma Copper supplied the drawings and specifications for the project. Dynatec proposed alternative methods of constructing the raise structure. Magma Copper rejected Dynatec's proposed alternatives and the raise structure was constructed in accordance with Magma Copper's design specifications.

In June 1993, Dynatec completed construction of the raise from the 4000 level up to the 3763 level. Starting in late June, Magma Copper began dumping muck from the 3763 level down the ore pass. Dynatec continued to drive the raise from the 3736 level up to the 3636 and also used the ore pass. In June and July, Magma Copper pulled ore from the bottom of the ore pass about once a shift. In late June and early July, material would sometimes become hung up near the feeder chute at the 4000 level. Explosives were sometimes used to free the hangup. Between, July 11 and July 28, there were apparently no hangups in the ore pass. This case involves that portion of the raise between the 4000 and 3763 levels.

On July 29, 1993, a Magma Copper loader operator dumped 30 to 50 loads of sandfill down the ore pass. Sandfill is a slurry consisting of cement and sand. Ore was not pulled from the ore pass during that shift. Starting on July 30, the ore pass was blasted to clear hangups on a regular basis. Magma Copper personnel determined that the sandfill had hardened near set 11 in the ore pass and that this hardened sandfill was responsible for the continuing hangups the raise was experiencing.

On August 3, Magma Copper made a concerted effort to blast the cemented sandfill out of the ore pass. This area of the ore pass was blasted about four times on the B shift on August 3. After the area was blasted, Magma Copper employees discovered that the ten-inch timber between the ore pass and the manway (the divider plate) was broken at set 8.

Two Dynatec employees, including Project Superintendent Mark Spaulding, inspected the raise and found two cribs missing between the ore pass and the manway at set 20, muck in the

manway at that location, and a cracked divider at set 8. They determined that the raise structure had settled about eight to ten inches from its original installation. The settlement was not uniform across the raise structure. Magma Copper's Team Leader for the raise project, Matthew Kannegaard, was notified. He told the Dynatec employees that some settlement was to be expected.

As a result of the damage, Magma Copper closed the raise on August 4. Magma Copper provided Dynatec with a list of nine items that needed to be repaired. These items included: removing the sandfill from the ore pass, cleaning down the manway, stabilizing the broken divider plate at set No. 8, repairing all broken ladders in the manway, spraying shotcrete in sets 20 and 21, and installing spreaders on all short manway wall plates. (Joint Ex. 115).

On August 6, at a going away breakfast for Dynatec supervisor Ronald Spry, Spaulding told Kannegaard that it was important that Magma Copper stop blasting and overloading the raise. (Tr. 728). Mr. Spaulding suggested that Dynatec install a sand grout backfill between the raise structure and the country rock to stabilize the structure. Spaulding understood that Magma Copper would no longer blast hangups in the raise except when absolutely necessary. Air lances and sledge hammers would be used to free hangups whenever possible.

Dynatec employees entered the raise structure from the 3763 level and used explosives to remove the sandfill material that was blocking the ore pass. Dynatec then completed most of the repairs set forth in Mr. Kannegaard's memo. On the evening shift of August 9, Magma Copper began using the ore pass for production.

On the evening shift on August 10, muck was pulled from the bottom of the raise. A hangup was reported at set No. 8. Magma Copper employees attempted to use an air lance to free the hangup. When that was not successful, Magma Copper employees prepared to blast the hangup. The ore pass was blasted, but it became hung up again a short time later. Preparations were made to blast the ore pass a second time. Bill Wilson, the Dynatec raise superintendent that replaced Mr. Spry, removed all Dynatec employees from the raise structure at that point because he did not believe that such blasting was safe. (Tr. 739). Four Magma Copper miners entered the raise from the 4000 level to set up the blast and the raise structure failed at about 9:45 p.m.

D. The Accident

The exact sequence of events that occurred on the night of August 10, 1993, is not known. It appears that a dividing wall between the manway and the ore pass in the 865 raise gave way allowing muck that was in the ore pass to fall down the manway. Magma Copper employees dumped a considerable amount of muck into the ore pass on August 10 with the result that it was full of ore at the time of the accident. No muck was pulled from the ore pass during the day shift on August 10. Muck was pulled during the evening shift for only a short period because of the presence of the hangup at about set 8. Allowing an ore pass to fill up with muck contributes to the formation of hangups. The weight of muck that accumulates in an ore pass puts a significant amount of stress on the raise structure.

It is clear that the dividing wall separating the ore pass and the manway failed. In all likelihood the armored cribbing dislodged from the birdcages in one or more sets. The failure of the dividing wall allowed muck in the ore pass to spill down the manway. The falling muck, cribbing, and other dislodged material from the raise structure killed the four Magma Copper miners who were in the manway.

II. DISCUSSION WITH FURTHER FINDINGS AND CONCLUSIONS OF LAW

A. Summary of the Parties= Positions

1. Secretary of Labor

MSHA's accident investigation team determined that Magma Copper failed to use prudent engineering practices in the design of the raise for a number of reasons. MSHA determined that the raise structure was inappropriate and inadequate for the ground in which it was built because Magma Copper failed to conduct a structural analysis of the design of the raise structure. Magma Copper failed to incorporate an adequate number of bearing sets to support the foreseeable loads on the raise structure. MSHA also believes that Magma Copper should have incorporated mechanical fasteners in the raise structure to prevent joint separation. The Secretary contends that these and other design failures contributed to the collapse of the raise structure.

MSHA also determined that Magma Copper misused the raise structure by allowing the ore pass to become completely full of muck before pulling the muck at the track level. It believes that this repetitive loading and unloading loosened the blocking behind the raise structure, allowing outward movement of the vertical timbers. MSHA also believes that the raise structure was damaged from improper hang-up blasting, which accelerated the collapse of the settled structure.

MSHA believes that the raise structure was in a state of imminent danger from August 3 until its failure on August 10. On August 3, various individuals observed that the raise structure had settled at least eight inches, that timbers had moved, and that cribbing between the ore pass and the manway had become dislodged from the birdcages. MSHA believes that blocking behind the raise structure was loose and that some blocks had fallen, which allowed the raise structure to spread outward. Because the cribbing was secured solely by the birdcages, outward movement of the timbers in the raise structure would allow cribbing to become loose and unable to hold back the weight of the muck in the ore pass.

The Secretary contends that Dynatec is also responsible for the failure of the raise structure. She argues Dynatec failed to use prudent engineering practices when it constructed the raise. She contends that Dynatec failed to determine whether the blocking and backfilling that it installed was adequate to control the ground and stabilize the structure. The Secretary maintains that, after the raise structure settled, Dynatec failed to adequately address the problem. It also failed to adequately inspect and evaluate the condition of the raise on August 3 and 4 to ensure

that all structural problems were addressed. MSHA believes that the repairs completed by Dynatec were superficial and did not address the structural problems.

The Secretary charged Dynatec with violating four mandatory safety standards. She contends that the evidence developed during MSHA's investigation and presented at the hearing demonstrates that Dynatec failed to achieve compliance with all four mandatory standards. The Secretary argues that Dynatec continued to direct its employees to work on the raise after August 3 on cosmetic and inadequate repairs so that the raise could be put back into production. She maintains that Dynatec chose to ignore the substantive structural defects that it knew existed in the raise. She states that whenever Dynatec presented Magma Copper with alternative construction or repair methods, it demonstrated its awareness of the structural problems with the raise. As a consequence, she argues that Dynatec cannot escape liability on the basis that it merely did what it was told to do by Magma Copper. The Secretary maintains that Dynatec had an independent duty to ensure that the raise was safe and to comply with the Secretary's safety standards. The Secretary believes that Dynatec's on-site supervisors were aware that the raise structure was on the verge of collapse after August 3, and that Magma Copper was misusing the raise, yet they continued to direct Dynatec's employees to work on the raise.

The Secretary contends that the failure of Magma Copper and Dynatec to address the settlement of the raise before allowing the raise to be used for production resulted in the failure of the raise structure a day after it was put back into use and only 43 days after Magma Copper began to dump muck into the ore pass. Given the condition of the raise and the way in which it was used, there was no question that the raise structure would fail; it was only a matter of time.

2. Dynatec Mining Corporation

Dynatec argues that the raise structure was not on the verge of collapse after August 3. It contends that the materials handling crew of Magma Copper, which cumulatively had less than four years of mining experience, allowed muck to accumulate in the ore pass thereby creating hangups. This same crew then used explosives in an attempt to remove the hangup. Dynatec contends that Magma Copper employees seriously misused the raise in the month preceding the accident and this misuse caused the failure of the raise structure.

Dynatec also points to the conclusions drawn by MSHA's technical support personnel and MSHA's independent consulting structural engineer. The consulting engineer concluded that the accident occurred as the result of an improper and incomplete structural design of the raise structure. (Joint Ex. 140 at 3). Dynatec argues that Magma Copper's design was not strong enough for the use to which it was actually put. Magma Copper used the raise beyond its design capacity. When Dynatec suggested that the raise structure be constructed using a different method to include bearing sets to make it stronger, Magma Copper rejected all of Dynatec's suggestions.

When the raise settled in early August, Dynatec states that it suggested to Magma Copper management that the raise structure be strengthened and improved. These suggestions were not

implemented by Magma Copper. It argues that these suggested repairs would have improved the raise structure's design capacity. When Magma Copper returned the raise to service prior to the completion of the permanent repairs suggested by Dynatec, Dynatec recommended limitations on use that, if followed, would have prevented the raise from being used beyond its design capacity. Magma Copper assigned inexperienced miners to work in the raise and the miners allowed the ore pass to be filled to capacity. Dynatec employees advised Magma Copper management on a number of occasions that in so doing it was misusing the raise. Dynatec also advised Magma Copper that it should not use explosives to free the resulting hangups.

Dynatec contends that the Secretary's attempt to penalize Dynatec for the four fatalities is unreasonable. Dynatec maintains that the Secretary failed to prove that it violated any of the four cited safety standards. Dynatec argues that its evidence establishes that it was not responsible for the accident and that the Secretary's decision to proceed against it is unwarranted.

B. General Considerations

Two fundamental concepts must be kept in mind when analyzing the issues in this case. First, the Commission and the courts have uniformly held that the Mine Act is a strict liability statute. *See, e.g. Asarco v. FMSHRC*, 868 F.2d 1195 (10th Cir. 1989). "[W]hen a violation of a mandatory safety standard occurs in a mine, the operator is automatically assessed a civil penalty." *Id.* at 1197. The negligence of the operator and the degree of the hazard created by the violation are taken into consideration in assessing a civil penalty under section 110(i). 30 U.S.C. ' 820(i).

On the other hand, the fact that a fatal accident occurs at a mine does not establish that the mine operator violated a safety standard. Conditions in a mine are dynamic and can quickly change. An accident may occur despite the fact that an operator is taking all reasonable precautions to prevent accidents and is complying with all of the Secretary's safety and health standards. In order to establish a violation of a safety standard, the Secretary cannot rely solely on the fact that an accident occurred, but must prove that the operator did not comply with the requirements of the safety standard.

C. General Discussion of the Events Leading up to the Accident

At the hearing and in their briefs, the parties devoted much of their attention to the events that preceded the accident, likely causes of the accident, and Dynatec's actions during this period. The parties focused less on the individual citation and orders than is typical in a civil penalty proceeding. I have analyzed these issues and enter findings of fact on these issues as set forth below. My focus is on the events that transpired on and after August 3, 1993, the date that Dynatec discovered that the raise had settled. My findings on these issues bear directly on my findings with respect to the citation and orders. I incorporate my findings below into the specific findings I made for each alleged violation.

I credit the evidence presented by the Secretary and Dynatec that the raise structure was not designed to withstand the loads and pressures to which it was subjected during its operation.

The ore pass was blasted on numerous occasions to remove hangups and the sandfill, and the ore pass was repeatedly filled and emptied of muck. This use of the raise structure precipitated the settlement and damage that was observed on August 3-4. If the ore pass had simply been used to transport muck in such a way that muck was loaded onto trains immediately after it was dumped down the ore pass, it is unlikely that the raise structure would have settled or failed. But the raise was not used solely as a transportation device. Magma Copper frequently used the ore pass to store the muck until it could be transported out of the mine. It was not unusual for the production crew to dump muck down the ore pass at a faster rate than the train crew could load it onto trains. The raise structure was not capable of sustaining these loads, especially when a hangup developed. Hangups were more common if fresh muck was dumped on top of muck that was already in the ore pass. If muck is subsequently drawn from the bottom, a suspended load remains in the ore pass that places tremendous lateral and vertical pressure on the raise structure. As stated above, Magma Copper frequently used explosives to remove hangups. Such blasting, if not properly done, could also place great pressure on the raise structure.

It is important to understand that this raise, including the raise structure, was built based on conceptual drawings. There were no engineering studies or calculations performed to assure that the raise structure was capable of withstanding the loads and pressures that would be placed upon it. It is frequently the practice in the metal mining industry for structures to be built without the kind of engineering studies that would be required for a public building or a bridge, for example. Because this raise structure was unique in its size and height, I find that a reasonably prudent mine operator would have put more thought and effort into determining if the design would hold up to the task. Based on the evidence presented at the hearing, I find that the raise structure was not properly designed to be used as an ore pass and manway as it was actually used by Magma Copper. I credit the testimony and report of James Van Liere, a consulting engineer retained by the Department of Labor, in this regard. He concluded that procedures and methods employing the standards of care, judgment, expertise, and experience normally associated with the design of major structures [were not] used in the design of this structure. (Joint Ex. 140 p. 3).

The experts retained by Dynatec reached similar conclusions. For example, Peter J. Stork, a structural engineer retained by Dynatec, stated in his report that the design of the 865 raise was deficient, in that the design vertical load capacity of the timber structure was inadequate to support the gravity loads that would be imposed on the ore compartment walls under hang-up conditions, muck storage conditions, or even the dead load of the empty raise alone. (Joint Ex. D p. 7).

I find that Dynatec constructed the raise and raise structure in accordance with the plans submitted by Magma Copper. I find that Dynatec's method of constructing the raise and the condition of the raise, including the raise structure, conformed to Magma Copper's designs in all material respects. I find that up until the time that the raise settled in early August, Dynatec's performance did not violate the safety standards cited by the Secretary or the spirit of the Mine Act. I reject the Secretary's argument that Dynatec failed to use prudent engineering practices

when it constructed the raise.² The remainder of my decision focuses on the events that occurred after Dynatec determined that the raise structure had settled eight to ten inches.

On August 3 and 4, Dynatec recognized that the raise had settled and was in need of repair. Ronald Spry, Dynatec's raise superintendent, testified that he first saw the settlement on August 3. (Tr. 623). He calculated that the raise had settled about eight to ten inches based on gaps he saw at various sets. The ore pass side of the manway had settled relative to the opposite end. That is, the ore pass settled and the end wall on the manway side stayed in approximately the same position. (Tr. 312, 750). Mr. Spry has extensive experience building raises and he testified that he had never seen a raise take that much settlement without breaking something. (Tr. 624). He also testified that this raise was the largest that he had ever worked on in terms of the size of the excavation. (Tr. 672). Mr. Spry knew that the raise was distressed.

John C. Folinsbee, a consulting mining engineer who testified on behalf of Dynatec, was experienced in the construction and use of raises. He testified that he had never worked in such a large raise or a raise with the same design. (Tr. 957). He had never seen a raise that used birdcages to secure cribbing around an ore pass, but he believes that it was a reasonable concept. (Tr. 958). He testified that the raise was under stress after it settled on or about August 3. He further testified that the raise structure was compromised by the settlement and there was no way that minor repairs would take it back to the condition that it was used -- as it was intended from the beginning. (Tr. 943). He went on to state that after this settlement, it was obvious to everyone and should have been obvious to everyone right up to the top of Magma's management that some *extraordinary steps* should have been taken at that time. (Tr. 981) (emphasis added).

Dynatec inspected the raise several times as did Mr. Kannegaard on behalf of Magma Copper. As discussed above, it was determined that the raise should be closed. Magma Copper provided Dynatec with a list of items that it wanted corrected before the raise was put back into production. The items were described orally and a formal memorandum was drafted. (Joint Ex. 115). It is not disputed that these items did not address the settlement problem. For

² For example, the Secretary presented evidence that Dynatec should have used hardwood instead of Douglas Fir for wedges when blocking the raise or that it should have made sure that there were no open spaces between the lagging of the raise structure and the walls of the raise. The Secretary's safety standards do not contain such requirements and are not standard practice at western metal mines. Moreover, such issues are largely irrelevant to the issues raised by the citations and orders.

example, Mr. Spry testified the repair items on the list would not fix the problems created by the settlement and that the settlement problems could only be addressed by rebuilding the raise structure. (Tr. 665). Mr. Stork testified that the listed repairs did not address the basic design deficiency of the raise structure. (Tr. 821; Joint Ex. D p. 9). Mr. Folinsbee stated that the repairs were inadequate to restore the raise to full use. (Tr. 980).

The Secretary contends that the raise structure was in the state of imminent danger³ between August 3 and August 10 as a result of the settlement and that no miners should have been in the raise except those specified in section 107(a) of the Mine Act. I disagree with the Secretary's analysis. The imminent danger provisions of section 107(a) only come into play when an MSHA inspector issues an imminent danger order. Neither Magma Copper nor Dynatec was required to comply with the requirements of sections 107(a) or 104(c). In addition, I credit the testimony of Dynatec's witnesses that it was reasonably safe to go into the raise from the top to remove the hangup and, once it was removed, to be in the raise to perform the minor tasks set forth on Magma Copper's list of repairs. Many of the items were necessary prerequisites to rebuilding or refurbishing the raise structure in any event, such as cleaning down the manway and repairing the ladders. Miners working in the raise structure were placed in danger only after the raise was returned to production.

I credit the testimony of Mr. Van Liere that the raise was on the verge of failure³ after the settlement of August 3. (Tr. 269). This concept is different from imminent danger. Mr. Van Liere testified that until the settlement, the blocking that had been installed was probably effective in keeping the raise structure together. (Tr. 267). The blocking should have been able to withstand some expected settlement, but the settlement that occurred on or about August 3 was substantial. Because lagging was present along the outside walls of the manway, the blocking could not be observed. As a consequence, Dynatec did not know whether the blocking was still intact or whether some of the blocking had fallen away or was otherwise rendered ineffective. (Tr. 268). If the blocking was loose at the center posts, the cribbing in the birdcages might also become loose as the center posts moved outward. It is important to remember that the only lateral force keeping the framework of the raise structure together was provided by the blocking. If the blocking failed, the raise structure could reasonably be expected to fail because the restraint provided by the birdcages at the hanging wall³ would be decreased. *Id.* I find Mr. Van Liere's testimony particularly persuasive as to possible events that could have occurred after the August 3 settlement to cause the raise structure to fail.

Mr. Van Liere stated that no one knows how many sets of blocking were still in contact with the center posts³ but that he believes that they were probably still reasonably intact.³ (Tr. 269). He stated that the raise structure was on the verge of failure because it would not have taken much to precipitate a failure. (Tr. 269-70, 295). If an event caused the blocking restraining the center post to fall out at a particular set, the center post could kick out, the cribbing could come loose from the birdcages, and any muck in the ore pass would cascade down the manway.

³ The center posts are the vertical posts that frame the center of the raise structure and are often referred to as the divider posts.

(Tr. 270). Reloading the ore pass with muck was an event that could trigger a failure of the raise structure. (Tr. 318). Thus, the raise structure was reasonably stable on the days following August 3, but a single ordinary event, such as loading the ore pass, could cause the structure to fail. Mr. Folinsbee's testimony is not inconsistent with Mr. Van Liere's analysis. (Tr. 988).

It is Dynatec's position that it was reasonable for it to perform the minor repairs set forth in Kannegaard's memo and then release the raise back to Magma Copper for what it terms "limited service." It believes that as long as the ore pass was not loaded with muck and blasting was not performed, it was safe to return the raise to production after the Kannegaard repairs were completed. I disagree. As stated above, I credit Mr. Van Liere's testimony that the raise was on the verge of failure and that the structure could fail as a result of a seemingly ordinary event once it was returned to production. More importantly, I find that it was highly unreasonable for Dynatec management to believe that the raise could be used in the manner that Dynatec expected. It was virtually impossible for anyone to ensure that the ore pass would not become loaded with muck. Mr. Folinsbee testified that it was his understanding that it would take about two to three hours for the production crew to fill the ore pass from set 8 to the 3763 intermediate level. (Tr. 940). Thus, if the production crew was working and, for one reason or another, the crew running the trains at the track level could not keep up with the production crew, it would not take long for the ore pass to become full or nearly full again. Indeed, Mr. Spaulding stated that this is exactly what happened. The production crew was filling the raise with muck and the "trimmers weren't keeping up with the mucker." (Tr. 741). "Muck built up in the raise to where they had another blockage." *Id.* I find that this was a reasonably foreseeable event. The Secretary labels Dynatec's limited service concept a "fantasy." (S. Br. 23). I agree.

Dynatec's concept of limited service is illogical in the context of a producing mine and is inconsistent with Magma Copper's previous use of the raise. Magma Copper officials made clear their impatience to return the raise to production as soon as possible. It was unrealistic to think that they would limit their use of the raise in the manner argued by Dynatec. In addition, even if such an attempt were made, it was likely that the train crew would get behind and the ore pass would become full enough to pose a hazard. To summarize, it was foreseeable that the raise would be loaded in the near future, that a hangup would develop and, given the inexperience of the Magma Copper crew, that attempts would be made to blast in the ore pass.

Dynatec contends that because the mine and the raise were owned by Magma Copper, it had no choice but to allow Magma Copper to use the raise and it had to rely upon Magma Copper's statements that it would not fill the ore pass or blast in the ore pass until a more permanent solution to the settlement problem was completed.⁴ I agree that Magma Copper owned and controlled the ore pass and it agreed in informal discussions that it would not, as Mr. Spaulding put it, "misuse" the raise. (Tr. 728). Dynatec, however, was an expert in the

⁴ Magma Copper indicated that they would allow Dynatec to place a sand grout backfill between the raise structure and the rock walls of the raise to stabilize the structure. This work was to be done on the weekends at some undetermined time in the future and, if completed, would have allowed full use of the raise without further settlement or failure.

construction of raises. Its local managers knew that the raise had been damaged and that the repairs mandated by Magma Copper did not correct the fundamental problems. It also appears that they did not hold the skill and ability of Mr. Kannegaard, Magma Copper's manager for this project, in high regard.⁵ (Tr. 768). Based on the record developed in this case, I find that Dynatec's managers knew or should have known that loading the raise or blasting in the raise had the potential to result in a failure of a significant part of the raise structure and that such an event would be life threatening to workers in the manway.

Although Dynatec's managers expressed their general concerns to Magma Copper's managers at a luncheon for Mr. Spry, Dynatec did not communicate to the mine manager or anyone else that human life was at risk if the ore pass were loaded again. Dynatec's concerns about the raise were cast in terms of the longevity of the raise. (Tr. 727). Thus, it appears that the discussions between Magma Copper and Dynatec focused on making the raise structure last longer rather than ensuring that the lives of miners were not put at risk. It appears that Kannegaard did not fully comprehend the risks posed by the raise structure after it settled. (*See for example*, Joint Exs. 68 and 115).

D. Alleged Violations of 30 C.F.R. ' 57.3360

On May 10, 1994, MSHA inspector Tyrone Goodspeed issued Citation No. 4410466 and Order No. 4410467 alleging violations of 30 C.F.R. ' 57.3360. The safety standard provides, in pertinent part:

When ground support is necessary, the support system shall be designed, installed, and maintained to control the ground in places where persons work or travel in performing their assigned tasks. Damaged, loosened, or dislodged timber used for ground support which creates a hazard to persons shall be repaired or replaced prior to any work or travel in the affected area.

I find that the raise was a ground support structure. Because the ground at the mine was generally thought to be squeezing ground, a support structure was needed to keep the raise open and available for use. The timbers of the raise structure were designed to perform this support

⁵ Mr. Spaulding testified that Mr. Kannegaard did not consider the settlement of eight to ten inches to be significant. Kannegaard apparently told Spaulding that the settlement was not "too bad" and that the raise structure could settle by a full set, seven and one-half feet, before any problems would arise. (Tr. 720, 767; Joint Ex. 112, 8/3).

function. Accordingly, the provisions of this safety standard applied to the raise structure through the application of the first sentence of section 57.3360.

1. Order No. 4410467

This order alleges, in pertinent part:

Necessary ground support in the area of the 865 Raise was not installed to control the ground in places where miners work or travel. During the period 3/93 - 8/93, management failed to determine that support, such as backfilling and blocking, was adequate to control the ground and ground support structure which contributed to the lateral movement of structure members. Movement of these structural members caused armored cribbing to be dislodged between the manway and ore pass compartment allowing ore and armored cribbing pieces to fall into the manway compartment. This violation contributed to the failure of the raise on 8/10/93 which resulted in the death of four miners.

a. Arguments

The Secretary argues that, by agreeing to construct the raise, Dynatec assumed responsibility to install the ground support structure in such a way as to control the ground in the raise to protect miners in the raise from falling ground and from the structure itself. She argues that its duties under this standard are separate and independent from its contractual obligations to Magma Copper. The Secretary believes that it is not critical that the ground that fell was muck inside the ore pass, as opposed to ground from the host rock. She states that the order is based on the fact that the raise structure failed and, as determined by MSHA during its investigation, that the installation of this structure was inadequate under the requirements of section 57.3360. Specifically, Dynatec failed to determine, at the time it constructed the raise, whether the backfill and blocking were adequate to control the ground and stabilize the raise structure.

The Secretary contends that the backfill used behind the raise structure was totally inadequate. Dynatec used flyrock from blasting. She maintains that backfill was missing from large areas behind the raise structure and was not uniform in its placement. The Secretary believes that Dynatec did not take any precautions to ensure that the flyrock was adequate to serve as backfill. The Secretary also contends that blocking was inadequate and sloppily installed. The Secretary believes that the backfill and blocking problems were exacerbated by the overbreak caused by inadequately planned and executed blasting performed by Dynatec miners when developing the raise. Simply put, the raise was too large for the raise structure with the result that extensive blocking was required. The Secretary believes that the quantity of flyrock was inadequate to fill the large space between the raise and raise structure. The Secretary contends that Dynatec failed to design and use a professional drill blast plan with the result that the excavation was too large to accommodate the pre-cut timbers.

Dynatec contends that the raise structure controlled the ground. It points to the fact that there is no evidence that the ground outside the raise structure failed, fell, or contributed in any

way to the accident. The ground never breached the lagging of the raise structure. Dynatec contends that the Secretary is attempting to stretch the safety standard beyond its intended meaning to include the muck in the ore pass. It argues that such a construction is contrary to the plain language of the safety standard. The standard requires the control of ground. The material transported through the ore pass was muck, not ground. Second, it contends that the Secretary's interpretation in this case is inconsistent with her interpretation in other cases. The failure of a ground support structure is not the same as the failure of the ground. Moreover, Dynatec contends that MSHA's interpretation of section 57.3360 does not provide mine operators with fair notice of what is required.

Dynatec also maintains that the Secretary failed to establish a violation, even if MSHA's interpretation is adopted. Dynatec contends that raise structure controlled the muck inside the ore pass until Magma Copper used the ore pass beyond its capacity and then further damaged the structure with the improper use of explosives. As a consequence, the Secretary's unfounded allegations concerning construction defects of the raise structure are irrelevant. The failure of the raise structure is directly attributable to the damage caused by Magma Copper's poor mining practices, not Dynatec's installation. In addition, the Secretary's allegations regarding the construction of the raise are not relevant because, as the Secretary argues, the safety standard is a performance-oriented standard. That is, the method of achieving compliance is immaterial. Finally, the Secretary failed to prove that the raise was inadequate as constructed. Dynatec argues that its evidence established that the blocking and backfill were consistent with good raise practice.

b. Discussion and Analysis

This case presents unique issues that have never been considered before. In a typical case under this safety standard there is a fall of ground, usually the roof, or conditions are present that convince an MSHA inspector that the ground will fall if it is not supported. In such cases, the issue is whether the mine operator had in place a ground control system to control the ground. In this case, a nearly vertical raise is involved. There is no evidence that the rock walls of the raise failed or were ready to fail, rather it appears that there was an internal failure within the raise structure itself. Dynatec contends that because the ground did not fail and was not ready to fail, there can be no violation.

I reject the Secretary's argument that the muck within the ore pass was ground and that Dynatec violated the standard because the raise structure failed to control such ground. Muck is ore-bearing rock that has been mined; muck is not ground as that term is used in the safety standard. Muck is rock or ore broken in the process of mining. *A Dictionary of Mining, Mineral, and Related Terms*, 732 (1968). The term ground in the safety standard is directed towards the rock that remains in the earth after an area has been excavated. Ground is any specific part of a mineral deposit, or the rock in which a mineral deposit occurs. *Id.* at 514. The standard is designed to protect miners from rock that has *not* been mined. I find that broken rock that is being transported from one place in the mine to another is not ground and is not covered

by the plain language of the standard. I credit the testimony presented by Dynatec on this issue. (See, for example, Tr. 628, 741-42, 951).

I also find that the Secretary's interpretation is not entitled to the deference that is usually accorded to the Secretary's interpretation of her safety standards. The legislative history of the Mine Act states that "the Secretary's interpretations of the law and regulations shall be given weight by both the Commission and the courts." S. Rep. No. 181, 95th Cong., 1st Sess. 49 (1977), reprinted in Senate Subcommittee on Labor, Committee on Human Resources, 95th Cong., 2nd Sess., *Legislative History of the Federal Mine Safety and Health Act of 1977* at 637 (1978). The Secretary's interpretation "serves a permissible regulatory function" in that the Secretary has the authority to protect miners from the hazards presented by mined ore. *General Electric Co. V EPA*, 53 F.3d 1324, 1327 (D.C. Cir 1995)(citations omitted); *Buffalo Crushed Stone, Inc.*, 19 FMSHRC 231, 234 (February 1997). The Secretary's interpretation, however, is not "logically consistent with the language of the regulation." *Id.*

Finally, I find that the Secretary did not provide mine operators with sufficient notice of the requirements of the standard. Safety standards must afford reasonable notice of what is required. In order to afford adequate notice and pass constitutional muster, a mandatory safety standard cannot be "so incomplete, vague, indefinite, or uncertain that [persons] of common intelligence must necessarily guess at its meaning and differ as to its application." *Ideal Cement Co.*, 12 FMSHRC 2409, 2416 (November 1990)(citation omitted). A standard must "give a person of ordinary intelligence a reasonable opportunity to know what is prohibited, so that he may act accordingly." *Lanham Coal Co.*, 13 FMSHRC 1341, 1343 (September 1991).

When faced with a challenge that a safety standard failed to provide adequate notice of prohibited or required conduct, the Commission has applied an objective standard, *i.e.*, the reasonably prudent person test. The Commission recently summarized this test as "whether a reasonably prudent person familiar with the mining industry and the protective purposes of the standard would have recognized the specific prohibition or requirement of the standard."

Id. (citations omitted). "The Secretary, as enforcer of the Act, has the responsibility to state with ascertainable certainty what is meant by the standard he has promulgated." *Diamond Roofing Co. V. OSHRC*, 528 F.2d 645, 649 (5th Cir. 1976). In this instance, I find that a reasonably prudent person would not have recognized that section 57.3360 applies to muck contained in an ore pass within a raise.

It is important to understand that the raise structure served several important functions. First, as stated above, it acted as ground support for the raise. Second, it functioned as a transportation system for the ore-bearing rock. Third, it was used by Magma Copper to temporarily hold or store the ore-bearing rock. Finally, it functioned as a manway. As discussed below, the Secretary established that the raise structure was poorly designed to serve all four

of these functions. That is, many of the design components were inadequate given the four functions it was to serve. The divider wall between the manway and ore pass was particularly inadequate given the fact that the ore pass was often full of muck and blasting was used to remove hangups. The differential settlement of the structure allowed the cribbing between the manway and ore pass to break loose from the birdcages. Although it is possible that some of the blocking fell away as the structure settled and that some areas between the structure and the rock walls of the raise were not filled with fly rock, these facts do not establish that the rock walls of the raise were not being controlled. The Secretary did not establish that the ground, rock walls of the raise, posed a hazard to miners, either at the time the raise was constructed or after the raise structure settled on or about August 3.

Magma Copper anticipated that the raise would be subject to squeezing ground. The raise structure was designed to withstand these forces and elements of its design took these forces into consideration. Some witnesses contend that, in fact, the raise structure was not subjected to squeezing ground and that this fact played a part in the failure of the raise. Whether that is true or not, the Secretary did not establish that the raise structure as installed by Dynatec failed to adequately support the rock walls of the raise. For the reasons set forth above, Order No. 4410467 is **VACATED**.

2. Citation No. 4410466

This citation alleges, in pertinent part:

Ground support in the area of the 865 raise was not maintained to control the ground in places where miners work or travel. Management failed to properly repair or replace the cribbing and timber in the raise which was progressively damaged, loosened, or dislodged as a result of poor mining practices. This violation contributed to the failure of the raise on 8/10/93....

a. Arguments

In this citation, the Secretary charges that Dynatec violated the maintenance requirements of the safety standard. The Secretary contends that Dynatec's repeated practice of working on the raise structure after it settled on August 3 to make repairs that were not related to the structural integrity of the raise structure constituted a violation of the maintenance requirements of section 57.3360. She contends that the raise structure was in a state of imminent danger after August 3, 1993, and repairs not related to eliminating the imminent danger should not have been made. Dynatec's Spry and Spaulding measured about eight inches of settlement in the raise structure and believed that the timber joints had been crushed. The fact that Dynatec managers discussed the safety of the raise structure with Magma Copper managers and suggested that the structure be rebuilt or substantially modified demonstrates that Dynatec knew that the raise structure was in danger of collapse. The Secretary contends that Dynatec completed the cosmetic repairs as directed by Magma Copper because Magma Copper wanted to return the raise to

production as quickly as possible. The Secretary argues that the cosmetic repairs performed by Dynatec between August 3 and 9 were insufficient to restore the raise to a suitable condition to be put back into full operation.

Dynatec makes many of the same arguments here as it did with respect to Order No. 4410467, above. After Dynatec repaired the ore pass, the ore pass performed without incident until it was used beyond its as-repaired capacity and was subjected to blasting by Magma Copper, in contradiction of recommendations made by Dynatec. In the alternative, it contends that it did not violate the third sentence of the standard because its employees did not work in the raise except to make repairs and it is not properly charged with the alleged inadequacies of the repairs. Dynatec further maintains that the cribbing and timber in the divider wall were not used for ground support but were used to separate the ore pass from the manway. Finally, it contends that the Secretary did not establish that the repairs it made failed to eliminate hazards to persons. Dynatec believes that the citation should be vacated.

b. Discussion and Analysis

Although this citation is similar to Order No. 4410467, discussed above, a separate analysis is required. This citation specifically relates to Dynatec's conduct after the raise structure settled. This citation concerns the maintenance of the raise structure after Magma Copper attempted to remove the sandfill from the ore pass with explosives as opposed to the construction and use of the raise up until that time. In addition, the citation requires an analysis of the requirements of the third sentence of the safety standard, as well as the second sentence. The third sentence requires that damaged, loosened, or dislodged timber used for ground support be repaired or replaced if it creates a hazard to persons. I conclude that it is appropriate to read the second and third sentences of the standard together because the citation concerns maintenance of the raise structure after the settlement. When read together, these sentences make clear that a mine operator is not only required to provide ground support in areas where it is necessary, but it must repair or replace ground support timber if it becomes damaged, loosened, or dislodged so that the ground support system itself does not present a hazard to miners.

As I stated above, I find that the muck in the ore pass was not "ground" as that term is used in the safety standard and a failure of a mine operator to adequately control the muck in a raise would not constitute a violation of section 57.3360. In addition, I find that the Secretary failed to establish that the rock walls of the raise were not being controlled by the raise structure after the raise structure settled. The Secretary's witnesses make clear that the failure of the raise structure may well have been precipitated by the dislocation of blocking at one location. The dislocation of blocking at one or two locations in the raise would not necessarily have any significant impact on the ability of the raise structure to support the rock walls of the raise itself. Thus, it was not proven that the raise structure failed to support or control the rock walls of the raise. Due to the nature of the accident, it is not known whether blocking was dislocated or the extent of any dislocation as a result of the settlement. The same is true of the backfill. There is simply no way to determine whether there were large voids behind the raise structure or whether

the presence of any voids undermined the raise structure's ability to control the rock walls of the raise. The Secretary bears the burden of proof on this issue.

Nevertheless, the standard also requires an operator to repair or replace ground support timber if it becomes damaged, loosened, or dislodged so that the ground support structure does not present a hazard to miners. I find that the Secretary established a violation. As discussed above, after the raise structure settled on or about August 3, the structure was on the verge of failure. Any normal event such as loading the raise with muck had the potential to cause a massive failure within the structure. I find that the Secretary established that the repairs made by Dynatec did not address the structural problems in the raise structure.

I reject Dynatec's argument that the standard does not apply because its employees were only in the raise to perform the repairs. Magma Copper made the determination to complete only limited repairs in the raise structure before it was returned to production. Nevertheless, Dynatec had expertise in raise construction and its managers knew or should have known that the repairs that were made did not address the structural problems of the raise. Dynatec did not advise Magma Copper that returning the raise to production before the raise structure was rehabilitated created a significant hazard to miners working in the area. Instead, Dynatec informally discussed the raise structure with Magma Copper managers at a luncheon and the discussion was framed in terms of longevity of the raise structure not the significant hazards presented by the structure. It is important to note that it was the perception of Dynatec managers that the lead raise manager at Magma Copper, Mr. Kannegaard, did not believe that settlement of the raise structure presented a problem unless it settled seven feet or more. When Mr. Spaulding told Steve Lautenschlaeger, the mine manager for Magma Copper, that the raise structure needed extensive rehabilitation, Mr. Lautenschlaeger responded that he had spent enough money on the raise. (Tr. 727; Joint Ex. 147). Mr. Spaulding did not suggest to Mr. Lautenschlaeger that the raise was unsafe to use. (Tr. 727).

It was incumbent on Dynatec, the raise construction expert, to take all reasonable steps to ensure that the raise structure was safe because Magma Copper's managers did not possess the skill or knowledge to assess the danger. It is clear that Magma Copper perceived Dynatec's concerns in economic terms rather than in safety terms. Dynatec knew that "extraordinary steps" were required but it did not take these steps or advise Magma Copper that these steps were necessary for the safety of miners. As stated above, it was foreseeable that the raise would become loaded with muck within a relatively short period of time and Dynatec knew that loading the raise would put the structure at risk for failure.

It is also important to understand that there was no real agreement that the raise structure would be rehabilitated in the near future. There had been some preliminary discussions that Dynatec would be asked to pour a sand grout compound between the structure and the walls of the raise over several weekends at an undetermined time in the future. While this repair would have stabilized the raise structure, there was no agreement between Dynatec and Magma Copper that this would be done. Thus, on August 9 Dynatec did not know how or when more permanent repairs would be made.

I do not accept the argument of Dynatec that I should parse the various components of the raise structure and determine that the cribbing and timber in the divider wall between the manway and ore pass were not part of the ground support structure. The entire raise structure served the multiple functions described above. The component parts of the divider wall played a part in the ground support structure.

c. Significant and Substantial Allegation

An S&S violation is described in section 104(d)(1) of the Mine Act as a violation of such nature as could significantly and substantially contribute to the cause and effect of a ... mine safety or health hazard. A violation is properly designated S&S if based upon the particular facts surrounding that violation, there exists a reasonable likelihood that the hazard contributed to will result in an injury or illness of a reasonably serious nature. *National Gypsum Co.*, 3 FMSHRC 822, 825 (April 1981). In *Mathies Coal Co.*, 6 FMSHRC 1, 3-4 (January 1984), the Commission set out a four-part test for analyzing S&S issues. Evaluation of the criteria is made assuming a continued normal mining operations. *U.S. Steel Mining Co.*, 6 FMSHRC 1573, 1574 (July 1984). The question of whether a particular violation is S&S must be based on the particular facts surrounding the violation. *Texasgulf, Inc.*, 10 FMSHRC 498 (April 1988).

In order to establish that a violation is S&S, the Secretary must establish: (1) the underlying violation of the safety standard; (2) a discrete safety hazard, 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.

I find that the Secretary established all four elements of the Commission's S&S test. There was a violation of the standard and the violation contributed to a discrete safety hazard. Under the third element, the Secretary must establish that it is reasonably likely that the hazard contributed to by the violation will result in an injury, but is not required to show that it is more probable than not that an injury will result from the violation. *U.S. Steel Mining Co.*, 18 FMSHRC 862, 865 (June 1996). I find that an injury was reasonably likely given the facts described above. The raise structure was inadequate and it had been seriously compromised. It was reasonably likely that without rehabilitating the raise structure, a substantial failure of the structure would occur resulting in an injury of a reasonably serious nature.

d. Unwarrantable Failure Allegation

The Commission held that unwarrantable failure is aggravated conduct constituting more than ordinary negligence. *Emery Mining Corp.*, 9 FMSHRC 1997, 2004 (December 1987). Unwarrantable failure is characterized by such conduct as Reckless disregard, Aintentional misconduct, Aindifference, or a Aserious lack of reasonable care. *Id.* at 2003-04; *Rochester & Pittsburgh Coal Co.*, 13 FMSHRC 189, 193-94 (February 1991). The Commission stated that Aa number of factors are relevant in determining whether a violation is the result of an operator's unwarrantable failure, such as the extensiveness of the violation, the length of time that the

violative condition has existed, the operator's efforts to eliminate the violative condition, and whether an operator has been placed on notice that greater efforts are necessary for compliance. @ *Mullins and Sons Coal Co., Inc.*, 16 FMSHRC 192, 195 (February 1994)(citation omitted).

Dynatec argues that this violation was not a result of its unwarrantable failure to comply with the standard because it was reasonable for [it] to rely on its extensive mining experience in examining the 865 raise after Magma had misused and damaged it. @ (Dyn. Br. 67). Dynatec maintains that A[a]lthough the repairs were temporary and stopgap in nature, the repairs were reasonable in that they eliminated the possibility of divider wall failure, readied the 865 raise for permanent repair, and made the 865 raise safe for the transfer of ore. @ *Id.* at 68.

As stated above, the repairs made by Dynatec did not address the structural and settlement problems in the raise structure. It knew that the raise structure presented a serious safety hazard to miners in the raise if the ore pass was loaded or blasting occurred in the raise. It failed to warn Magma Copper managers of the severity of this hazard. Magma Copper's managers apparently did not understand the implications of the events of August 3 and 4 and allowed the raise to be returned to production following minor repairs. Dynatec did not take appropriate actions to ensure that extraordinary steps were taken to rehabilitate the raise before it was returned to production and miners were allowed to work in the raise. I find that Dynatec's conduct demonstrates a serious lack of reasonable care. Dynatec's efforts to eliminate the violative condition were insufficient and it knew that greater efforts were necessary to ensure the safety of miners under the standard. The violation was the result of Dynatec's unwarrantable failure to comply with the safety standard.

E. Alleged Violation of 30 C.F.R. ' 57.11001

On May 10, 1994, MSHA inspector Tyrone Goodspeed issued Order No. 4410468 alleging violations of 30 C.F.R. ' 57.11001. The safety standard provides:

Safe means of access shall be provided and maintained to all working places.

This order alleges, in pertinent part:

A safe means of access was not provided and maintained to working places between the 3700 and 4000 levels in the 865 raise during the period 8/4-10/93. This violation contributed to the severity of the accident involving the failure of the raise on 8/10/93 which resulted in the death of four miners.

Management engaged in aggravated conduct constituting more than ordinary negligence in that: (1) structural conditions in the raise were hazardous; (2) ladders had not been secured; (3) timber, blocking, and cribbing had shifted; (4) armored cribbing was

dislodged and damaged in at least two areas between the ore pass and manway compartment; and (5) ore and armored cribbing pieces had fallen into the manway compartment.

Miners regularly traveled the manway compartment during this period to perform structural repairs and for access to other mine levels. Management allowed these safe access hazards to exist and permitted the continued use of the manway during this period.

1. Arguments

The Secretary contends that Dynatec allowed its miners to work and travel in the manway to complete the repairs authorized by Magma Copper in violation of the safety standard. It knew that the raise structure was badly damaged and yet allowed its miners to work on matters unrelated to the root causes of the settlement of the structure. Dynatec failed to provide safe access for its employees in the raise between August 3 and August 10.

Dynatec states that the Secretary did not establish that the conditions set forth in the order made it unsafe to work or travel in the manway. Dynatec's evidence established that the repairs were performed in a manner that provided safe access. The manway was cleaned of spilled ore prior to any other work being performed. Dynatec reinforced the timber along the divider wall at set 8. Although the load that had hung up in the ore pass presented a hazard, there was no imminent danger. Timbers were not moving and the load had been substantially reduced. Dynatec removed the hazard by removing the hangup over the sandfill on August 4 and removing the sand fill on August 6. In addition, Dynatec contends that the other repairs improved the integrity of the structure. It also repaired the ladders that were damaged during the settlement. Dynatec further argues that a reasonably prudent person familiar with the mining industry and the protective purposes of the standard would not recognize that the cited safety standard prohibits the abatement of hazardous conditions.

2. Discussion and Analysis

I agree with Dynatec that the Secretary failed to establish that an imminent danger existed after the raise structure settled. First, the term "imminent danger" is a legal concept that gives rise to certain obligations when an MSHA inspector issues an order under section 107(a) of the Mine Act. Second, imminent danger is defined as a condition in a mine "which could reasonably be expected to cause death or serious physical harm before such condition ... can be abated." I find that the Secretary failed to establish that an imminent danger existed on August 3-8, 1993. I credit the evidence presented by Dynatec in this regard.

As stated above, I find that the raise structure was on the verge of failure after the settlement because, if the raise was returned to production, a normal event such as the loading of the ore pass with muck presented a significant risk of failure. I find that Dynatec performed the

repairs in a safe manner and a safe means of access was provided and maintained to the working places within the manway. For example, cleaning down the manway, repairing the ladders, and repairing damaged timber did not present a hazard to Dynatec employees. Many of the tasks were a prerequisite to the rehabilitation of the raise structure.

Dynatec employees continued to use the manway, however, after the raise was returned to production. The manway did not provide safe access to working places after Magma Copper began dumping muck into the ore pass. Dynatec's management was aware of the hazards but did not warn its employees to keep out of the ore pass. As the expert in raise construction, Dynatec failed to adequately warn Magma Copper that the manway did not provide safe access after August 9 when the raise was returned to production. On the evening of August 10, Dynatec supervisor William G. Wilson ordered all Dynatec employees from the manway because he was concerned about the hangup blasting that Magma Copper employees were about to perform. This act saved the lives of Dynatec employees. It also illustrates that Dynatec knew of the hazards. Dynatec knew that the manway did not provide safe access to the working places in the raise structure after the ore pass became hung up with muck, especially if blasting was planned.

Based on the evidence presented in this case, I find that the Secretary established a violation of the safety standard during August 9 and 10. The manway did not provide safe access to working places once the raise was returned to production. Dynatec's failure to remove its employees during this period and provide sufficient warning to Magma Copper constitutes a violation. Much of the language in the order describing the violation relates to the Secretary's contention that Dynatec violated the standard when it was making the repairs to the raise structure between August 4 and August 8. Nevertheless, the order also covers Dynatec's conduct in permitting the continued use of the manway after the repairs were made.

3. Significant and Substantial Allegation

I find that the violation was S&S. As discussed above, the Secretary established the first two elements of the Commission's S&S test. I find that an injury was reasonably likely given the facts described above. The raise structure was on the verge of failure and once the raise was returned to production it was reasonably likely that part of the raise would fail thereby killing or seriously injuring any miners in the manway. As stated with respect to the previous citation, it was reasonably likely that without rehabilitating the raise structure, a substantial failure of the structure would occur resulting in an injury of a reasonably serious nature.

4. Unwarrantable Failure Allegation

I find that the violation was the result of Dynatec's unwarrantable failure. Dynatec's conduct after the hangup developed demonstrates a serious lack of reasonable care. Although Dynatec removed its own employees from the manway after Magma Copper employees began blasting the ore pass on the evening of August 10, it had allowed its miners to work in the raise structure earlier that day after the hangup developed. It also failed to suitably warn Magma

Coppers inexperienced employees that they were endangering their lives by continuing to work in the raise structure below the hangup.

F. Alleged Violations of 30 C.F.R. ' 57.3401

On May 10, 1994, MSHA inspector Tyrone Goodspeed issued six orders under section 104(d)(1) of the Mine Act alleging violations of 30 C.F.R. ' 57.3401. The safety standard provides:

Persons experienced in examining and testing for loose ground shall be designated by the mine operator. Appropriate supervisors or other designated persons shall examine and, where applicable, test ground conditions in areas where work is to be performed, prior to work commencing, after blasting, and as ground conditions warrant during the work shift. Underground haulageways and travelways ... shall be examined weekly or more often if changing ground conditions warrant.

The six orders, Nos. 4410469 through 4410474, allege identical violations. Each order covers a different shift between August 6 and August 10. For example, Order No. 4410469 alleges, in pertinent part:

Miners were allowed to work in the 865 raise on the AB@ shift, 8/6/93, even though management failed to adequately examine ground conditions in the area prior to work commencing, after blasting and as ground conditions warranted. This violation is part of a practice of a failure to conduct adequate examinations that contributed to the failure of the raise on 8/10/93....

An adequate examination of the ground conditions and the raise support structure would have determined that: (1) raise timbers were shifting and progressively deteriorating; (2) raise timbers were separating from posts, dividers, wall plates, and cribbing; (3) support blocking was sheared and no longer functional; (4) sections of armored cribbing were dislodged which allowed ore and armored cribbing pieces to fall into the manway compartment; (5) the raise support structure had been subjected to water infiltration and frequent development and hangup blasting; (6) non-uniform placement of backfilling around the timber framework was contributing to framework separation; and (7) swelling or squeezing ground conditions were not encountered during raise construction and use preventing the raise support structure from developing the proper structural integrity.

Adequate ground condition examinations of the raise were warranted to protect miners regularly required to work in the area. The above noted conditions were visibly obvious and established that the ground support structure was failing to maintain its structural integrity.

1. Arguments

The Secretary argues that Dynatec's obligation under this examination standard is to ensure that adverse ground conditions do not exist and that the support structure is achieving its purpose. She contends that once the raise structure settled, the integrity of the joints and the dividing wall was dependent on the blocking installed during construction. As a consequence, Dynatec had the obligation under this standard to examine the blocking outside the immediately visible area. Dynatec failed to examine the area around the raise structure to see if the blocking was still performing its function. Dynatec employees should have cut holes in the lagging around the manway at strategic locations so that the blocking could be examined. The Secretary states that the orders cover the period after the Spry luncheon because the evidence establishes that, from at least that date, Dynatec knew that the raise structure needed to be rebuilt. She also argues that there was a reasonably detectable hazard before the failure of the raise structure.

The Secretary contends that Dynatec was required to examine the ground and the structural integrity, blocking, and backfill of the ground support structure prior to work commencing and after blasting. She argues that a reasonably prudent mine operator would have cut holes in the side lagging to look at the blocking and joint integrity.

Dynatec argues that the safety standard is not applicable because there were no ground conditions in the areas where work [was] being performed. (D. Br. 53). Dynatec was performing work inside the manway and the lagging around the manway isolated its employees from the ground conditions that existed in the excavation. There was no threat of a ground fall and, because there was no exposure to ground conditions, there was no requirement to examine or test the ground. In any event, Dynatec employees performed examinations that were sufficient to determine that the ground support structure was achieving its purpose. There was no indication that the raise structure was under stress from the ground. A reasonably prudent person would not interpret the standard to require the removal of the protective lagging to examine ground outside the raise structure under such conditions.

Dynatec maintains that the Secretary's attempt to extend the safety standard to require an examination of the ground support structure is unreasonable. The Secretary was not concerned about Dynatec's examination of the rock walls of the raise, but with its examination of the raise structure. The safety standard does not require an examination of ground support structures. In addition, Dynatec believes that it extensively examined the raise structure. Its examinations of the structure established that the blocking and backfill were still functioning. It also examined some of the blocking through cracks in the manway lagging. Cutting into the lagging posed a risk that rock or backfill would fall into the manway. It could also compromise the structural integrity of

the raise structure. Dynatec contends that it identified every condition identified in the orders during its extensive examinations of the support structure. (D. Br. 57). Based on these examinations, Dynatec incorrectly determined that extensive, permanent repairs were necessary before the 865 raise could withstand another hang-up and blasting. *Id.*

2. Discussion and Analysis

I find that the Secretary established a violation. As discussed above, the raise structure served several important functions at the mine. Because one of those functions was to support the ground, the raise structure was a ground support structure. As I stated above, I find that the entire structure was a ground support structure and I decline Dynatec's invitation to hold that certain parts of the structure did not serve a ground support function. The safety standard required mine operators to examine ground conditions in areas where work is performed. I find that an examination under this standard includes an examination of any structures installed to support the ground. For example, in a timbered entry in a mine subject to this safety standard, the examiner would be required to examine the support timbers as well as the ground itself. Examining only the ground in an area where supports have been installed would not mean much. An examiner would be required to note that timber posts and cross beams were falling down in an area, even if the roof looked stable. An operator could not argue that a proper examination had been conducted if the examiner failed to examine roof support. The posts and cross beams had been installed to support the roof and they were no longer performing their function. In addition, the posts and beams themselves would pose a hazard to miners working in the area.

In this instance, the support structure had settled up to ten inches and by August 6, Dynatec knew or should have known that this structure would be in danger of failing if the ore pass became loaded with muck. The purpose of examinations under section 57.3401 is to ensure that the ground and any ground support does not pose a hazard to miners. On August 6, Dynatec knew that the structure was compromised, but it did not know what members of the structure had failed. Without performing an adequate examination of the ground and support structure, Dynatec would not know whether the rock walls of the raise were contributing to the problems or whether the manway was otherwise unsafe for miners. It examined the inside of the manway prior to each shift and was able to draw some conclusions, but its examinations were not complete.

Ordinarily, an examiner would not be required to cut holes in the lagging to look at blocking. In this instance, Dynatec recognized that extraordinary steps were required and it did not take these steps. It peered at the blocking through cracks in the lagging in a few locations where there happened to be cracks. It did not develop a systematic approach. It knew or should have known that blocking could have been compromised by the settlement. It also knew that adequate blocking of the raise structure was a key component in the design and construction of the structure. A failure of blocking in one or more locations at a critical location could contribute to a failure of the structure. It would not have been difficult to cut small holes in the lagging to examine the blocking. I am not holding that Dynatec was required to cut such holes to examine each set of blocks, but that it was required to develop and implement a plan for examining blocking at strategic locations.

Dynatec believes that its examinations showed that the blocking was intact. First, it points to the fact that divider posts had not kicked out along the manway. I find that such a fact does not establish the integrity of the blocking. Blocking could have fallen away at a particular set and the timbers could have remained in place until the lateral force of a hangup pushed it out. Second, Dynatec points to the fact that further settlement was not occurring. The fact that the raise structure was not settling at that time establishes that, as a general matter, the structure was stable and that the blocking was helping to support the structure. But it does not establish that sufficient blocking was present to prevent failure once the raise was returned to use and the raise structure was subject to normal operating forces, such as the forces that occur during a hangup.

A complete examination would have indicated whether all of the seven problems listed in the orders of withdrawal were present. Although it appears that the ground was stable, Dynatec did not really know this for a fact on August 6 because it did not attempt to examine the ground. Dynatec failed to make a complete examination as required by the safety standard. The safety standard requires an examination that is appropriate given the conditions present at the mine. Examinations that were adequate before the raise structure settled were no longer adequate after the structure settled. As the expert in raise construction, Dynatec was in position to know that a more thorough examination was required under the standard.

Dynatec admits that it knew that the raise structure was under great stress and argues that, because it already had that knowledge, a thorough examination was not required. I disagree. If a mine operator knows that a particular entry at its mine has roof problems, it cannot decide that an examination is unnecessary because it already knows that the roof is bad. The examination is designed to pinpoint the problems so that they can be fixed *before miners are exposed to the hazards*. Because Dynatec did not perform a complete examination of the raise structure and the ground, the nature and magnitude of the problems were not entirely known. The examinations may have been able to identify areas where blocking had shifted, for example. Dynatec may have been able to use a written report of such an examination to convince Magma Copper to shut down the raise until permanent repairs were completed.

I do not base my holding on the fact that the raise structure subsequently failed nor am I holding that the failure established a *prima facie* case for the Secretary. *See Asarco, Inc.*, 14 FMSHRC 941, 946 (June 1992). Rather, I am holding that the examinations performed by Dynatec were not comprehensive enough under the safety standard given the fact that the raise structure settled eight to ten inches and Dynatec knew that this settlement posed a significant safety hazard. Extensive examinations were required under section 57.3401 to pinpoint the safety hazards, to help Dynatec decide whether the raise structure was safe to return to use, and, if not, to provide specific information to Magma Copper so that it would be able to make an informed decision as to the future use of the raise.

3. Significant and Substantial Allegation

I find that the violations were S&S. The Secretary established the first two elements of the Commission's S&S test. I find that an injury was reasonably likely given the facts described above. The raise structure was on the verge of failure and once the raise was returned to production it was reasonably likely that part of the raise would fail thereby killing or seriously injuring any miners in the manway. As stated with respect to the previous orders, it was reasonably likely that without rehabilitating the raise structure, a substantial failure of the structure would occur resulting in an injury of a reasonably serious nature. The examinations would have allowed Dynatec to more accurately identify problems in the raise structure so that they could be corrected before miners were exposed to the hazards. Dynatec and Magma Copper discussed the problems created by the settlement in terms of the longevity of the raise. A complete examination may have been instrumental in highlighting the safety hazards.

4. Unwarrantable Failure Allegation

I find that the violations were the result of Dynatec's unwarrantable failure. The examinations conducted by Dynatec after its luncheon discussions with Magma Copper demonstrates a serious lack of reasonable care. It knew that extensive, permanent repairs were necessary before the raise could withstand another hangup and blasting. It allowed its miners to work in the manway despite the fact that it had not conducted examinations to check the integrity of the blocking. If it had conducted such examinations and the examinations showed that blocking was missing or crushed in a number of locations, the raise may have been closed before the accident occurred. As stated above, Magma Copper's miners assigned to the raise were inexperienced and Magma Copper's manager responsible for the raise was not fully aware of hazards presented by the settlement. A thorough examination required by the standard may have alerted Magma Copper to the hazards presented.

G. Alleged Violations of 30 C.F.R. ' 57.18002(a)

On May 10, 1994, MSHA inspector Jimmie Jones issued five orders under section 104(d)(1) of the Mine Act alleging violations of 30 C.F.R. ' 57.18002(a). The safety standard provides:

A competent person designated by the operator shall examine each working place at least once each shift for conditions which may adversely affect safety or health. The operator shall promptly initiate appropriate action to correct such conditions.

The five orders, Nos. 4410475 through 4410479, allege identical violations. Each order covers a different shift between August 6 and August 9. For example, Order No. 4410475 alleges, in pertinent part:

Adequate workplace examinations were not conducted in the 865 raise on AB@shift, 8/6/93, in that conditions which adversely affected the ... safety of the miners were not detected or corrected. This violation is part of a practice of a failure to conduct adequate examinations that contributed to the failure of the raise on 8/10/93....

An adequate examination of the 865 raise workplaces and support structure would have determined that: (1) structural conditions in the raise were hazardous; (2) ladders had not been secured; (3) timber, blocking, and cribbing had shifted; (4) armored cribbing was dislodged and damaged in at least two areas between the ore pass and manway compartment; and (5) ore and armored cribbing pieces had fallen into the manway compartment.

During this period miners were regularly required to travel to work places in the manway compartment for structural repairs and for access to other levels.

1. Arguments

The Secretary states that the purpose for this safety standard is to ensure that conditions which may adversely affect safety of miners are detected by a competent miner and are corrected promptly. The Secretary labels the examination obligation as a fiduciary duty the operator has for the safety of miners. She contends that Dynatec violated its obligation to find and correct the hazardous settlement conditions which adversely affected the safety of miners assigned to work in the raise.

The Secretary maintains that because of the unique nature of the raise structure, Dynatec's examiners were not competent to examine the raise without the benefit of a structural engineering analysis of the raise. (S. Br. 66). She argues that Dynatec's managers continued to allow and direct its employees to work in the raise despite their knowledge that the raise structure was severely damaged and the repairs directed by Magma Copper were ineffective. The Secretary states that the Dynatec examiners were *in over their heads.* *Id.* Without the benefit of a structural engineering analysis, none of Dynatec's agents had the ability, knowledge, and experience necessary to be fully qualified to competently examine the unique work places in the 865 raise for conditions which adversely affected the health and safety of the miners.... (S. Br. 66-67).

Dynatec argues that its examiners were fully competent to conduct the required examinations. They had extensive experience in raise construction. Although the raise was unusually large, it incorporated features that were common to other raises. For example, birdcages had been used in other raises at the Magma Mine. Dynatec also contends that it adequately examined the working places and the support structure. The quality of the

examinations exceeded industry practice. MSHA's Program Policy Manual states that the safety standard requires a visual inspection for hazards that are readily apparent. Dynatec contends that its examinations exceeded the standard's requirements.

The quality of Dynatec's examinations is demonstrated by the fact that it identified all of the hazardous conditions that existed in the 865 workplaces. The fact that the Secretary disagrees with the conclusions it drew from its examinations is irrelevant. Dynatec's conclusion that it was safe to perform the repair work until Magma Copper employees began blasting in the ore pass is supported by the evidence. Dynatec also contends that a structural engineering analysis was not required. First, the safety standard does not require an engineering analysis. Second, the standard requires an examination of working places not support structures.

Finally, Dynatec contends that it did not violate the second sentence of the standard. Dynatec employees were in the raise for one purpose: to repair the raise. Muck had been removed from the manway and the hangup had been removed before August 6. The missing cribbing had been replaced so additional muck would not spill into the manway. In addition, it argues that Magma Copper had the obligation to permanently repair the raise structure because it was the owner of the mine. Dynatec could not permanently repair the raise structure without Magma Copper's consent.

2. Discussion and Analysis

The Secretary's approach in her brief is not consistent with the allegations contained in the orders. She stresses her argument that the Dynatec's examiners were not competent to conduct the required examinations. She also argues that the safety standard required Dynatec to conduct a structural engineering analysis of the raise. The orders at issue, however, alleged that the examinations were not adequate. The competence of the examiners and the need for an engineering analysis are not mentioned in the orders of withdrawal.

I find that the Secretary failed to establish that Dynatec's examiners were not competent persons as that term is used in the safety standard. The examiners had many years of experience. I agree with Dynatec that, although the raise structure was unusually large, its features were not that unusual. The testimony of Messrs. Spry and Spaulding establish that Dynatec's examiners were competent persons under section 57.18002(a). In *FMC Wyoming Corp.*, 11 FMSHRC 1622, 1629 (September 1989), the Commission held that a competent person within the meaning of sections 57.18002(a) and 57.2 is a person capable of recognizing hazards that are known by the operator to be present in a work area or the presence of which is predictable in view of a reasonably prudent person familiar with the mining industry. Dynatec's examiners were capable of recognizing hazards that were presented by the raise after it had settled.

I also find that the safety standard did not require Dynatec to conduct a structural engineering analysis of the raise. Such an analysis is not within the scope of the examinations required by the standard. That part of the Secretary's Program Policy Manual that discusses this standard states that the word "examine," as used in the standard, means a visual inspection for

hazards that are readily apparent. As stated above in my discussion of the violations of section 57.3401, the requirements of examination standards are not fixed. The examinations required before the raise structure settled would be less rigorous than examinations required after the settlement. Nevertheless, the standard does not require a structural engineering analysis under any circumstance. The Secretary's interpretation of section 57.18002(a) to require such an analysis is beyond the plain meaning of the standard and the Secretary's own written interpretation. I find that the Secretary's interpretation is unreasonable and that it is not entitled to deference.

Notwithstanding the above, I find that the Secretary established that Dynatec failed to conduct adequate examinations of the raise structure. Under the facts of this case, adequate examinations conducted under this standard would have revealed that the raise structure was in danger of falling if the ore pass was loaded with muck. Although Dynatec conducted examinations, they were not adequate to pinpoint the problems in the raise structure so that the problems could be corrected *before miners were exposed to the hazards*.

In this particular instance, the examinations under this standard would have been the same as the examinations required under section 57.3401. The five enumerated items contained in the orders issued under section 57.18002(a) are included in the seven items listed in the orders issued under section 57.3401. An adequate examination under either standard would have revealed the same hazards and the scope of the examinations would have been the same. For example, after the raise structure settled, Dynatec was required to examine blocking for the raise structure under section 57.18002(a) as well as under section 57.3401 to determine whether such blocking was intact and performing its function of keeping the raise structure together. Missing or dislodged blocking is a condition which would adversely affect the safety of miners. As under section 57.3401, the present standard required Dynatec to examine at least a representative sample of the blocking at strategic locations.

The only enumerated item in the orders issued under section 57.18002(a) that is not specifically mentioned in the previous orders is item number two concerning the condition of the ladders in the manway. I find that Dynatec had noted the condition of the ladders and was in the process of repairing them at the time of the accident. (*See for example* Joint Exs. 112 and 126). In the orders issued under section 57.3401, I found that the entire raise structure was required to be examined under that section because it functioned as a ground support structure. Thus, an examination of the ladders was required under section 57.3401, and the orders issued under that standard included allegations involving the failure to examine the ladders.

The orders issued under section 57.18002(a) cover the same shifts as the orders issued under section 57.1403, except that no section 57.18002(a) order was issued for the AB shift on August 10. Given my construction of the requirements of these standards and the orders issued thereunder, I find that the orders issued under section 57.18002(a) are duplicative. Citations are not duplicative as long as the standards involved impose separate and distinct duties on an operator. *Cyprus Tonopah Mining Corp.*, 15 FMSHRC 367, 378 (March 1993). As applied in this case, I find that the two standards imposed identical duties on Dynatec. An adequate

examination under one standard would have revealed the same unsafe conditions as an adequate examination under the other standard. The examination duties were the same. The Commission has recognized that standards may be duplicative as applied to particular facts at a mine. *Western Fuels-Utah, Inc.*, 19 FMSHRC 994, 1004-04 (June 1997). I am not holding that these two standards would always duplicate each other but that under the facts of this case, the duty to examine was the same.

Accordingly, the five orders issued under section 57.18002(a) are **VACATED**. If I had found that the six orders issued under section 57.1403 were invalid, I would affirm the five orders issued under section 57.18002(a) and hold that the orders were S&S and the result of Dynatec's unwarrantable failure. Because the safety hazards were the same and the required examinations were the same, my analysis would be the same under either standard.

H. Dynatec's Responsibility for Conditions in the Raise

Dynatec contends that it was inappropriately cited for Magma Copper's conduct. Dynatec maintains that it did not own or control the raise and, as a consequence, it cannot be held responsible for the failure to maintain and examine the raise structure. It argues that only Magma Copper had the authority to determine what repairs were made and whether the raise would be returned to service before the raise structure was rehabilitated. I agree that the final authority rested with Magma Copper, but Dynatec was the expert in raise construction and it had the obligation to impress upon Magma Copper the need to address the structural problems in the raise structure before the ore pass was returned to production. Dynatec made suggestions at the luncheon for Mr. Spry, but it did not advise Magma Copper how grave the situation was. As Mr. Folinsbee stated, it was "obvious that extraordinary steps should have been taken at that time." (Tr. 981) Dynatec did not take these extraordinary steps, which were particularly necessary because Mr. Kannegaard apparently did not understand the inherent danger. In settling its cases, BHP Copper paid civil penalties of \$800,000 for 46 citations and orders that were issued by MSHA following the accident. The four safety standards cited in the present case were included in the case against BHP Copper. I find that the Secretary did not abuse her discretion when she cited both Magma Copper and Dynatec.

III. APPROPRIATE CIVIL PENALTIES

Section 110(i) of the Mine Act sets forth six criteria to be considered in determining appropriate civil penalties. The parties stipulated that "Dynatec has a favorable history of previous violations." (Stip. No. 11 submitted 2/10/98) . It appears that in the two years preceding the accident, Dynatec had a history of 13 violations throughout the country. (Joint Ex. 150). Dynatec is a mid-sized independent contractor that worked about 61,960 man-hours at all mines in the year preceding the civil penalty assessment. (Stip. No. 12). Dynatec exercised good faith in abating the violative conditions by participating in the accident investigation and in attempting to determine how to prevent a re-occurrence of the violations. (Stip. No. 9). I find that the penalties assessed in this decision will have no effect on Dynatec's ability to continue in

business. (Joint Ex. 150; Stip. No. 12). Each citation and order that was affirmed was serious and caused by Dynatec's high negligence.

Dynatec violated section 57.3360 as set forth in Citation No. 4410466. The Secretary proposed a penalty of \$50,000 under 30 C.F.R. ' 100.5. I assess a penalty of \$40,000 for this violation. As stated above, I believe that Dynatec was highly negligent for not taking all reasonable steps to ensure that the raise structure was safe before it was returned to production. Nevertheless, I find its negligence was not as great as that asserted by the Secretary. Magma Copper was resistant to Dynatec's suggestions for improving the safety of the raise and Magma Copper's managers informally stated that hangups would not be blasted except as a last resort. Dynatec believed that a permanent rehabilitation of the raise structure would commence later in August. As stated above, it was unreasonable for Dynatec to rely on the informal assurances of Magma Copper managers because they did not have the knowledge or skill to assess the danger and it should have been reasonably foreseeable that Magma Copper would continue to fill the ore pass and blast hangups. I have taken these facts into consideration in assessing the penalty.

Dynatec violated section 57.1101 as set forth in Order No. 4410468. The Secretary proposed a penalty of \$50,000 under 30 C.F.R. ' 100.5. I assess a penalty of \$20,000 for this violation. I rejected the Secretary's contention that the raise structure presented an imminent danger after it settled on or about August 3. I found that it was safe for Dynatec to make the repairs set forth in Kannegaard's memorandum of August 5. (Joint Ex. 115). I found that safe access was not provided to the raise structure after it was returned to production on August 9. Dynatec removed its employees from the raise structure once it became clear that Magma Copper was blasting in the ore pass. As a consequence, I significantly narrowed the scope of the order. These factors reduced the gravity of the violation and Dynatec's negligence. I have taken these facts into consideration in assessing the penalty.

Dynatec violated section 57.3401 as set forth in order Nos. 4410469 through 4410474. The Secretary proposed a penalty of \$50,000 for each of the six violations under 30 C.F.R. ' 100.5. I assess a penalty of \$5,000 for each violation. Dynatec conducted examinations of the conditions inside the manway. Based on these examinations it reached conclusions as to what needed to be done to rehabilitate the raise structure. It did not believe that the rock walls of the raise were contributing to the stress placed on the raise structure. As stated above, these examinations were not adequate to identify with certainty the specific hazards presented by the raise structure. These factors reduce the gravity of the violations and Dynatec's negligence.

IV. ORDER

Based on the criteria in section 110(i) of the Mine Act, 30 U.S.C. ' 820(i), I assess the following civil penalties:

<u>Citation/Order No.</u>	<u>30 C.F.R. '</u>	<u>Penalty</u>
4410466	57.3360	\$40,000.00
4410467	57.3360	Vacated
4410468	57.11001	20,000.00
4410469	57.3410	5,000.00
4410470	57.3410	5,000.00
4410471	57.3410	5,000.00
4410472	57.3410	5,000.00
4410473	57.3410	5,000.00
4410474	57.3410	5,000.00
4410475	57.18002(a)	Vacated
4410476	57.18002(a)	Vacated
4410477	57.18002(a)	Vacated
4410478	57.18002(a)	Vacated
4410479	57.18002(a)	Vacated
	Total Penalty	\$90,000.00

Accordingly, the citation and orders listed above are hereby **VACATED** or **AFFIRMED**, as set forth above, and Dynatec Mining Corporation is **ORDERED TO PAY** the Secretary of Labor the sum of \$90,000.00 within 40 days of the date of this decision.

Richard W. Manning
Administrative Law Judge

Distribution:

Edward H. Fitch, IV, Esq., Office of the Solicitor, U.S. Department of Labor, 4015 Wilson Boulevard, Arlington, VA 22203-1954 (Certified Mail)

C. Gregory Ruffennach, Esq., 450 East 3rd Avenue, Durango, CO 81301 (Certified Mail)

RWM