

FEDERAL MINE SAFETY AND HEALTH REVIEW COMMISSION

OFFICE OF ADMINISTRATIVE LAW JUDGES
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FALLS CHURCH, VIRGINIA 22041

July 31, 1996

STILLWATER MINING COMPANY, : CONTEST PROCEEDINGS
Contestant :
v. : Docket No. WEST 95-539-RM
: Citation No. 3908599; 9/5/95
SECRETARY OF LABOR, :
MINE SAFETY AND HEALTH : Docket No. WEST 95-540-RM
ADMINISTRATION (MSHA), : Citation No. 3908600; 8/24/95
Respondent :
: Stillwater Mine
: Mine I.D. 24-01490
:
SECRETARY OF LABOR, : CIVIL PENALTY PROCEEDINGS
MINE SAFETY AND HEALTH :
ADMINISTRATION (MSHA), : Docket No. WEST 96-131-M
Petitioner, : A.C. No. 24-01490-05577
v. :
STILLWATER MINING COMPANY, : A.C. No. 24-01490-05579
Respondent :
: Stillwater Mine

DECISION

Appearances: Kristi Floyd, Office of the
Solicitor,
U. S. Department of Labor, Denver, Colorado,
for the Secretary;
James J. Gonzales, Esq., Holland and Hart,
Denver, Colorado, for Respondent.

Before: Judge Amchan

This case involves two citations and proposed civil penalties resulting from MSHA's investigation of a fatal accident at the Stillwater underground platinum mine near Nye, Montana.

On August 21, 1995, Kenneth Goode, a 38-year old experienced miner was buried under tons of ore when the assembly securing the gate of ore chute 5620 East failed.

Citation 3908599 was issued on September 5, 1995, and originally alleged that Respondent had violated 30 C. F. R. ' 57.3360 because the mounting design for the 5620 ore chute did not provide support for loads imposed during mining operations. In February 1996, the citation was amended to allege a violation of section 57.14205 in that ~~A~~the chute gate assembly... was being used beyond its intended (design) capacity in that the strength of the fasteners (bolts) used to attach the chute gate to the support structure were (sic) inadequate for the anticipated loads...¹@ In April 1996, MSHA proposed a \$5,000 civil penalty for this citation².

Citation 3908600 alleges a violation of section 57.9309 in that the 5620 chute was not designed to provide a safe location for persons pulling (emptying) this chute. A \$309 civil penalty was proposed. The issues pertaining to this citation involve the location of the valve used to control the gate to chute 5620. The parties agree that Mr. Goode's death is unrelated to this alleged violation. For the reasons stated below, I affirm citation 3908599 and assess a \$1,500 civil penalty. I vacate citation 3908600 and the corresponding penalty proposal.

The Accident of August 21, 1995

On August 21, 1995, Stillwater foreman Randy Johnson assigned miners Kenneth Goode and Duane Hudson to the task of emptying or ~~A~~pulling@ the 5620 East ore chute (Tr. 527). This chute is 210 feet long and 6 feet in diameter. It descends from 5200 feet above sea level to 5000 feet above sea level in a South-North direction. The chute drops at an angle of 80 degrees

¹Section 57.14205 states that ~~A~~Machinery, equipment, and tools shall not be used beyond the design capacity intended by the manufacturer, where such use may create a hazard to persons.@

²The Petition for Assessment of a Civil Penalty does not reflect the amendment alleging a violation of section 57.14205.

to horizontal until it reaches a location about 10 feet above the bottom of the chute. At this point the chute changes direction to an angle of 83 degrees from the horizontal in a southerly direction. At the bottom of the chute is a metal plate angled at 45 degrees. This plate directs the falling ore out of the chute to the East. Thus, ore falling from the top of the chute changes direction twice (Tr. 127-29, 619-27, Exhs. R-8, R-10, G-20).

The 5620 East chute had been filled with approximately 280 tons of ore about 4 days prior to August 21, 1995. It is common for a chute at Respondent's mine to be full for such a period (Tr. 526-27, 546). There was water flowing into the chute at a rate between 0.7 to 2.0 gallons per minute (Tr. 412, 503-06, 545-46). A small amount of water was flowing out the chute, which is also a normal occurrence (Tr. 574). It has not been established that a substantial amount of water was trapped in the chute or had been absorbed by the ore inside it.

To unload the chute the miners positioned four ore cars, each with a ten-ton capacity on the railroad track under the chute (Exh. R-9, p. 21). Mr. Hudson operated the locomotive that moved the cars and Goode operated the valve controlling the gate that regulated the flow of ore from the chute (Tr. 575, Exh. G-3, p. 1).

Prior to starting their work, Hudson and Goode examined the condition of the chute. Hudson checked the bolts holding the chute gate assembly to the wall with a 12-inch crescent wrench. There appeared to be nothing wrong with the bolts or any other part of the chute (Tr. 571-72, 608)

When Goode opened the chute gate, the ore moved very slowly. After filling the first 1/4 of a rail car, the ore appeared to Hudson to be a sticky cement-like mixture. It came out of the chute a little bit at a time (Tr. 577, Exh. G-3, p. 1).

Hudson and Goode then employed several customary measures to unload a jammed chute. Goode slammed the chute gate open and shut a few times, hoping to loosen the ore with vibration. They also opened the chute gate a little and sprayed the ore with water several times (Tr. 577-78).

Having little luck in freeing the ore, the two miners placed a half stick of explosive approximately 8-10 feet up the chute with a long pole. This is also a common and widely accepted means of unjamming an ore chute. Hudson and Goode used explosives 4 to 5 times and were able to fill three of the four railroad cars. Then the chute jammed again (Exh. G-3, p. 1).

Goode signaled Hudson to get off the locomotive and walk back to his location at the chute gate valve control. The two miners then walked North towards the chute while trying to decide whether to use another explosive charge (Tr. 583, Exh. G-3, p. 7). They walked only a few feet when the chute gate and the assembly holding it to the chute suddenly gave way. Hudson turned and ran to the South. He was struck in the back of the legs and knocked down by the falling rock at a location near the valve control. These controls were about 16-20 feet South of the mouth of the chute (Exh. R-9, p. 60). When Hudson got up he could not find Goode (Tr. 584-87).

Goode was buried under the ore, a few feet closer to the mouth of the chute than Hudson³. Approximately 50 tons of ore came out of the chute when the gate assembly gave way. It stopped flowing when the mouth of the chute was choked off (Tr. 5-6, Stip. No. 8, Tr. 526, 531, Exh. R-9, 23-24). The pile of ore extended approximately 20 feet from the chute at an angle of approximately 45 degrees. It covered the rail car under the chute (No. 4 in Exhibit G-2) and was knee - waist deep at the site of the gate control valve (Tr. 671-73).

Citation 3908599: Equipment used beyond the design capacity intended by the manufacturer

The parties agree that the immediate cause of the August 21, 1995 accident was the failure of the bolts that held the chute gate assembly to the 5620 chute (Tr. 300, 348, 674-76). The assembly was affixed by eight 1-inch diameter grade 8 bolts, four on each side of the chute. The location of these bolts was clearly indicated by Respondent's mine manager Alan Buell on Government Exhibit 20, which is reproduced below.

³Hudson indicated Goode's location the last time he saw him on Exhibit G-2 (Tr. 587).

One issue before me is whether these bolts are equipment or part of equipment within the meaning of section 57.14205. I conclude that the bolts are equipment because the word is broad enough to encompass any physical asset used in mining operations. Moreover, the term should be interpreted in a manner that effectuates the purposes of the Act, Allied Chemical Corp., 6 FMSHRC 1854 (August 1984).

My inquiry focuses on the bolts, not only because both parties agree they failed, but also because they are the only component of the chute and gate assembly for which there is any evidence regarding the design capacity intended by the

manufacturer. There is no such evidence pertaining to the chute or chute gate assembly as a whole.

The 5620 East chute and the chute gate assembly were installed by Respondent in approximately 1990. Prior to the accident approximately 205,000 tons of ore had been dropped through this chute without incident (Exh. R-9, pp. 18-22). The 5620 chute design had been used in constructing other chutes by Chevron Resources, which operated this mine before Stillwater (Tr. 772, Exh. R-16, p. 17). Thus, the manufacturer of the chute and chute gate assembly in this instance is Stillwater Mining Company, and there is no evidence indicating the intended design capacity of the chute or chute gate assembly.

Similarly, there is no evidence as to who manufactured the eight grade 8 bolts that held the gate assembly to the chute. However, I credit the testimony of Complainant's expert Carl Schmuck and find that the manufacturer's design capacity for these bolts is that specified for all manufacturers by the American Institute of Steel Construction in its A Specification for Structural Joints Using ASTM A325 and A490 Bolts⁴ (Tr. 308-09, Exh. G-8, pp. 8-11, Appendix E, page E6). The design

⁴A Grade 8 bolt is called an A490 bolt by the American Society for Testing and Materials (ASTM) (Tr. 309).

capacity of eight grade 8, one-inch diameter bolts is 408,408 lbs (Tr. 309-312)⁵. The bolts used to affix the chute gate assembly for the 5620 East chute at the time of the accident were manufactured to these specifications (Tr. 247-249).

The fatal accident of August 21, 1995, establishes to my satisfaction that the design capacity of the eight bolts holding the chute gate assembly was exceeded by the forces applied to those bolts before they failed. Had only loads not in excess of the design capacity been applied to these bolts, the chute gate assembly would not have failed.

There simply is no credible alternative explanation for the failure of the 5620 chute gate assembly. While there is some evidence that at least one of the bolts was deformed prior to the accident, it has not been established that the bolts did not meet the design capacity of 408,408 pounds prior to the accident (See Tr. 675). Moreover, while it is impossible to calculate the force applied to the bolts prior to the accident, I conclude that it exceeded this design capacity.

Much of the evidence in this case concerned Mr. Schmuck's calculations of the potential forces applied to the bolts prior to the accident. Respondent has demonstrated that calculating the force applied to these bolts is a very complicated undertaking. The force applied to the bolts cannot be derived simply by taking a given amount of ore and the distance it drops. Such a calculation leads to absurd results. For example, if 6 tons fell 10 feet and all the force was transmitted to the bolts, they would break (Tr. 317-22).

⁵Respondent's mine manager, Alan Buell, agreed with Mr. Schmuck's calculation of the tensile strength of the bolts and his dividing the static load capacity by two to account for the force of a dynamic load (Tr. 665-66).

The force applied to the bolts was dissipated by many factors. These are frictional forces, the affect of the change of direction 10 feet above the bottom of the chute and the 45 degree change of direction right at the chute gate. All these things are, however, irrelevant to the outcome of the case. Whatever load was applied to the bolts on August 21, 1995, had to have exceeded the design capacity of the bolts; otherwise the chute would not have failed and Mr. Goode might not be dead. Therefore, I conclude that the Secretary has established a violation of section 57.14205⁶.

Assessment of a Civil Penalty⁷

The Commission assesses civil penalties de novo after

⁶I believe an extended discussion of the A significant and substantial (S & S)@ issue is not necessary in this case. If there was a violation, it satisfied the AS & S@ criteria set forth in Mathies Coal Co., 6 FMSHRC 1, 3-4 (January 1984).

⁷Respondent argues that I have no jurisdiction over the penalty for this citation on the grounds that the Secretary has never petitioned for a penalty for an alleged violation of section 57.14205. However, the Secretary proposed a civil penalty for citation 3908599; therefore, I hereby sua sponte amend the pleadings to conform to the evidence at hearing pursuant to Rule 15(b) of the Federal Rules of Civil Procedure. See my decision in Higman Sand and Gravel, Inc., _____ FMSHRC _____ (ALJ June 19, 1996, slip opinion at pp. 8-9). The penalty petition is deemed to seek a penalty for a violation of ' 57.14205.

considering the six penalty criteria in section 110(i) of the Act. It is not bound by MSHA regulations or determinations with regard to proposed penalties, United States Steel Mining Co., 6 FMSHRC 1148 (May 1984).

The parties have stipulated that the proposed penalties will not affect Respondent's ability to stay in business. As to prior history, they have also stipulated that Stillwater has not previously been cited for violations of the standards at issue in these proceedings. Exhibit G-1, an MSHA assessed violation report, provides no reason to either raise or lower a penalty based on the remaining criteria.

Respondent is a relatively large operator, employing 448 people at this mine, 271 of whom work underground (Exh. G-5, p. 1, Tr. 59-60). In 1993 the mine had 711,691 hours of production,

18 FMSHRC 34 at 41 (ALJ January 1996). Other things being equal, I would assess a somewhat higher penalty than for a smaller operator.

Stillwater deserves maximum credit for exhibiting good faith in rapidly abating the citation. It installed two large steel pipes which extend from the chute assembly to the opposite rock wall. This provides additional lateral support for the chute gate assembly. Additionally, Respondent has installed a 3/4-inch wire rope around and under the gate so that the assembly will not separate from the wall if there is another failure of its fasteners (Tr. 676-77).

For new chutes, Stillwater has changed designs and has purchased a very differently configured chute gate assembly which is manufactured in Sweden (Tr. 676-78). This assembly apparently has some different problems from the one formerly used by Respondent. The chute gate is secured by chains, through which pieces of ore can fall (Tr. 658-61, 678).

The two most critical factors of the six penalty criteria are the gravity of the violation and Respondent's negligence, if any. The instant violation is a very grave one. It resulted in the death of one miner, Kenneth Goode, and could easily have killed Mr. Hudson as well. It is important to note that the accident herein was not the result of any misconduct by Goode and Hudson. As far as this record indicates they were doing what they were supposed to be doing in the manner in which they had been instructed. Mr. Hudson, checked the condition of the chute assembly, including to the best of his ability, the condition of the bolts (Tr. 528, 591-2, Exh. G-3, pp. 3-4).

I also find that Respondent was to some extent negligent. It is axomatic that after a tragic accident occurs everyone becomes much smarter than they were before. However, I find that there were indications prior to the accident that the chute gate assembly might not be adequate to support the forces that at some point would be imposed upon it.

Respondent essentially inherited the design of its chutes and chute gates from Chevron. However, it made modifications to reduce the forces imposed by ore falling against the gate assembly. For example, in 1988 or 1989, John Thompson, then general mine foreman, requested that the chutes be designed so that the ore would change direction before it impacted the gate assembly at the bottom (Exh. R-9, pp. 14-15). The 5620 East chute was installed with such a change.

More importantly, Stillwater experienced some twisting and bending of the steel beams supporting the gate assemblies, which gave it an indication that the original design of these assemblies was inadequate (Tr. 647-48). The beams were then embedded in concrete and gussetts were added to the beams to provide additional support. I conclude that once Respondent recognized that the original design of the chute gate assembly support system was inadequate, prudence would have mandated revisiting the engineering calculations with regard to the entire system. There is sufficient evidence from which I infer that this was not done (Exh. R-9, pp. 50-55).

In this regard I again credit the testimony of Mr. Schmuck that installation of the gussetts, which was done on the 5620 East chute sometime after its initial installation (Tr. 425-27, 647-48), had the affect of redistributing force to the bolts (Tr. 288-89). There is no evidence that Respondent then performed a thorough engineering analysis of the capacity of the bolts and the loads to which they might be subjected. In the absence of such an analysis it cannot be said that Respondent was totally without fault with regard to the instant violation of ' 57.14205.

In finding Respondent negligent, I do not give any consideration to the incident where a miner named Dewey was almost drowned by a gush of water from a chute. There is nothing in the evidence regarding that incident that relates to the structural adequacy of chute gate assemblies (Tr. 690-92, Exh. G-3, pp. 3-4). I also do not rely on an incident involving miner Brigham Garrett in approximately 1992 at the 5150 chute (Tr. 179-80, 192-97). In the Garrett incident, the gate failed but the gate assembly remained intact (Tr. 197). Moreover, there insufficient evidence that Respondent's management was aware of the incident (Tr. 535, 693).

However, I do think that instances in which the gate assemblies of much larger chutes were damaged should also have alerted Respondent to the need for a reexamination of its engineering assumptions with regard to the adequacy of the assemblies on all its chutes (Tr. 641-644). Prior to August 1995, there were instances in which water and muck had fallen several hundred feet in some chutes much larger than 5620 and had caused extensive damage to the chute gate, its assembly and the supporting steel beams (Tr. 641-42). Although much larger, these chutes were of the same design type as the 5620 chute.

Mine manager Alan Buell observed that:

[If] we have about 15 feet of broken rock at the bottom of the raise [another term for the chute] there's not a problem. But if there's nothing there, if it's just empty air all the way to the gate, then this big plug of ore can come down and cause a lot of destruction on that chute gate package...

Tr. 643.

Buell testified further that Stillwater generally doesn't have this sort of problem in chutes 200 feet in length (Tr. 644). Nevertheless, for the sake of its employees, Stillwater had an obligation to make sure that all its chute gates were capable of withstanding any load that could impact upon them. Its experience with the larger chutes was an indication that this was not so.

The Secretary has not established that the 5620 East chute was not designed to provide a safe location for persons pulling chutes.

Section 57.9309 requires that AChute loading installations shall be designed to provide a safe location for persons pulling chutes.@ The cited standard does not give any indication as to what constitutes a "safe location". Thus, the issue is whether a reasonably prudent mine operator familiar with the protective purposes of the standard would have recognized that the location of the control valve in this case violated its requirements, Ideal Cement Company, Inc., 12 FMSHRC 2409 (November 1990). I conclude that this has not been established.

When the chute gate assembly failed in August 1995, ore reached a depth of at least a miner's knees at the location of the gate controls (Tr. 672). This fact is irrelevant to whether the cited standard was violated. There is no indication that **A safe location** means a location at which one would be protected from the result of a catastrophic chute failure, such as occurred in this case. Regardless of where the chute controls are located, miners will often have to get closer to the chute, particularly when the chute jams. The way to prevent death or injury due to catastrophic chute failure is assure the integrity of the chute, rather than to position the gate controls 10 feet farther away from the mouth of the chute.

Miners cannot be too far away from the gate when emptying it. It is necessary that a miner operating the gate controls be able to see the mouth of the chute (Tr. 726). Otherwise, he or she will not be able to fill the ore cars properly.

At the time of the citation the controls for the chute gate were approximately 14 - 20 feet from the mouth of the chute (Exh. R-9, pp. 33, 60). Nothing in this record indicates that a reasonably prudent person would conclude that this was unsafe because it was too close to the mouth of the chute (See Tr. 190, 552, 576-77).

There was a 42-inch clearance between the gate controls and the ore cars that were on the track next to them in August 1995 (Tr. 84-90, 111-13). MSHA apparently believes that this clearance is inadequate to protect employees from an ore car that derails. Nothing in the record indicates what MSHA considers to be a safe clearance. I note, however, that section 57.9330 requires a clearance of at least 30 inches at locations near moving railroad equipment. This to my mind establishes that a reasonably prudent person would not necessarily conclude that the 42-inch clearance at the controls at chute 5620 East made that location **Unsafe** within the meaning of section 57.9309.

While the record indicates that ore cars derail on a regular basis, there is nothing that shows that a 42-inch clearance is inadequate to prevent injury from such mishaps. There is no

evidence that ore cars overturn or otherwise travel 42 inches laterally from the track. None of the miner witnesses in this proceeding believed that the clearance was inadequate (Tr. 190, 552, 576-77).

For the reasons stated above, I conclude the Secretary has not established a violation of section 57.9309 and I therefore vacate citation 3908600 and the penalty proposed for that alleged violation.

ORDER

Citation 3908599 is affirmed and a \$1,500 civil penalty is assessed.

Citation 3908560 and the corresponding proposed penalty are vacated.

The assessed penalty shall be paid within 30 days of this decision.

Arthur J. Amchan
Administrative Law Judge

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