MAI-2003-8

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

Metal and Nonmetal Mine Safety and Health

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Stone)

Fatal Machinery Accident
April 16, 2003

Crusher #1
James Hamilton Construction Co.
Deming, Luna County, New Mexico
I.D. No. 29-01968

Accident Investigators

Gary L. Cook
Supervisory Mine Safety and Health Inspector

Cosme F. Gutierrez
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
South Central District
1100 Commerce Street, Room 462
Dallas, Texas 75242
Edward E. Lopez, District Manager

OVERVIEW

Juan A. Chairez, oiler/laborer, age 57, was seriously injured, on April 16, 2003, when he contacted moving machine parts of a jaw crusher. He was attempting to free a blockage of rock when he apparently contacted the moving machine parts, causing multiple fractures to his leg. The victim was hospitalized and died on April 20, 2003.

The accident occurred because the victim was standing on a narrow platform installed over the opening of the jaw crusher near moving components of the crusher as he attempted to free the blockage of material. A contributing factor was that no risk assessment, that would have identified any hazards associated with the task, was conducted prior to performing the task.

Chairez had 6 years mining experience, twenty-eight weeks at this operation.

GENERAL INFORMATION

Crusher #1, a portable crushing plant, owned and operated by James Hamilton Construction Co., was located near Deming, Luna County, New Mexico. The principal operating official was Bruce L. Randolph, crusher foreman. The crushing plant operated one 10-hour shift, five days a week. Total employment was 7 persons.

Rock was mined from a multi-bench quarry by drilling and blasting. The shot material was loaded with a front-end loader into haul trucks and transported to the primary feed hopper located at the crushing plant. The rock was crushed, screened, and stockpiled. The finished products, crushed base and asphalt rock, were used by the company's road construction division.

The last regular inspection of this operation was completed on September 17, 2002.

DESCRIPTION OF THE ACCIDENT

On April 16, 2003, Juan A. Chairez, reported for work at 6:30 a.m., his normal starting time. Bruce Randolph, crusher foreman, instructed Chairez to perform his normal duties of equipment servicing and cleanup.

Work at the plant progressed normally until about 3:00 p.m., when Jose Gallegos, plant operator, who was located in a control booth, noticed the flow of the material from the jaw crusher had ceased flowing. He blew the warning horn, notifying Chairez, to go investigate the problem. Chairez walked to the Cedar Rapids jaw crusher and discovered the material had bridged over the mouth of the jaw. He attempted to dislodge the material by using a dozer tooth wedge, hooked onto a twelve feet long chain.

Michael Ward, haul truck driver, had backed up to the hopper and noticed it was not discharging material. He walked to the jaw crusher work platform and saw Chairez standing on the small platform, mounted below the work platform level, directly above the mouth of the jaws. Ward helped Chairez remove the dozer tooth and told him to get out of the jaw. Ward went to disengage the crusher drive clutch and turn off the drive engine.

Randolph arrived and waved his arm to get the attention of the other miners to come help clear the jam. By then Ward had shutdown the drive engine and while the crusher was coasting to a stop, Ward and Randolph heard a "pop" and Chairez yell.

Chairez was removed from the crusher and a splint was placed on his leg. Emergency personnel responded to the scene and transported Chairez to the hospital in Deming. Chairez had a steel rod surgically implanted in his leg on April 19, 2003. He died while in the hospital on April 20, 2003, due to a blood clot.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the death at 5:15 p.m., on April 20, 2003, by a phone call from Roy Newman, director of regulations, to the Albuquerque field office. MSHA's accident investigators traveled to the mine on April 21, 2003, made a physical inspection of the accident scene, interviewed employees, and reviewed conditions and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and employees.

DISCUSSION

Location of the Accident

The accident occurred at the primary jaw crusher, located in the plant area.

Jaw Crusher

The jaw crusher was a model 3042 manufactured by Cedar Rapids. The jaw width was 42 inches. The crusher was powered by a 325 horsepower Caterpillar diesel engine through a clutch and drive line. The unit was shutdown by disengaging the engine drive clutch and turning off the engine.

A plate had been welded in the opening along the top portion of the oscillating jaw to prevent material from spilling over the movable jaw. A small platform, that Chairez was observed standing on, was attached to the top of this plate. The platform was 48 inches long by 10 ½ inches wide and was 17 inches below the top crusher work platform. The top work platform was located on three sides of the jaw opening. The jam was from rock that ranged in size from about 6 inches square up to 10 inches by 12 inches by 36 inches.

A vibrating primary feeder, powered by a 40 HP electric motor, fed the jaw crusher through a slide chute. The feeder was controlled by a push button in the plant control booth.

Access
A ladder provided access from ground level to the crusher's drive engine work platform where a second ladder was used to access the top crusher platform.

Training
Records indicted Chairez had been training in accordance with 30 CFR, Part 46. On October 10, 2002, he had received his Newly Hired Experienced Miner Training. On October 16, 2002, he had received New Task Training.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted and the following causal factors were identified.

CAUSAL FACTOR: A risk assessment to identify possible hazards and establish safe procedures was not conducted prior to performing the task of clearing a jam up of rocks in the jaw crusher.

CORRECTIVE ACTION: A policy should be implemented requiring risk assessments to be conducted prior to performing maintenance or repair tasks. Potential hazardous conditions should be identified and procedures to safely complete the task should be established.

CAUSAL FACTOR: The power to the jaw crusher was not disconnected and the machinery components were not blocked to prevent hazardous motion.

CORRECTIVE ACTION: Shutdown, lockout, and blocking against motion procedures, that address the hazards associated with the work to be performed, should be developed for all maintenance tasks.

CAUSAL FACTOR: The victim was not effectively protected from the hazardous motion of the crusher components. He attempted to free the blockage of rock while positioned on a 10 ½ inch wide platform near the moving components.

CORRECTIVE ACTION: Develop a work procedure that ensures persons are properly positioned to prevent exposure to any hazards when working to free blockages in the jaw crusher.

CONCLUSION

The accident occurred because the victim was standing on a narrow platform installed over the opening of the jaw crusher near moving components of the crusher as he attempted to free the blockage of material. A contributing factor was that no risk assessment, that would have identified any hazards associated with the task, was conducted prior to performing the task.

ENFORCEMENT ACTIONS

Citation issued to James Hamilton Construction Co.

Citation No. 6230329 was issued on April 22, 2003, under the provisions of Section 104(a) of the Mine Act for violation of 30 CFR 56.14105.

A serious accident occurred at this operation on April 16, 2003, when a miner came in contact with moving machinery components while attempting to clear a rock blockage in the jaw crusher. The victim was positioned on a 10 ½ inch wide grated platform, directly over the mouth of the moving jaw crusher when his leg came in contact with moving machinery components. He died as a result of the injury on April 20, 2003. The power was not disconnected and the machinery components were not blocked against hazardous motion.

This citation was terminated on July 7, 2003, when the company revised their lockout training for moving machinery components such as crushers and included steps to insure that the components are blocked against motion where such motion could endanger miners. This training has been given to the miners at this mine and at all other mines operated by James Hamilton Construction.

Approved by: Date:

Edward E. Lopez
District Manager

APPENDICES

A. Persons Participating in the Investigation

B. Persons Interviewed

APPENDIX A

Persons Participating in the Investigation

James Hamilton Construction Co.

Joseph A. Cheromiah	safety supervisor
Roy Newman	director of regulations
Bruce Randolph	crusher foreman

Mine Safety and Health Administration

Gary L. Cook	supervisory mine safety and health inspector
Cosme F. Gutierrez	mine safety and health inspector

APPENDIX B

Persons Interviewed

James Hamilton Construction Co.

Jose Gallegos	plant operator
Michael C. Ward	truck driver
Bruce L. Randolph	crusher foreman
Johnny Castillo	loader operator