MAI-2006-12

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
Metal and Nonmetal Mine Safety and Health

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Crushed and Broken Stone)

Fatal Fall of Person Accident
May 22, 2006

3M/Corona Plant
Minnesota Mining & Manufacturing Company
Corona, Riverside County, California
Mine I.D. No. 04-00191

Investigators

Rickie D. Dance
Mine Safety and Health Inspector

David W. Cheney
Mine Safety and Health Inspector

Isabel Williams
Mine Safety and Health Specialist

Originating Office
Mine Safety and Health Administration
Western District
2060 Peabody Road, Suite 610
Vacaville, California 95687
Arthur L. Ellis, District Manager

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TOYOTA

OVERVIEW

On May 22, 2006, Federico G. Andrade, mechanic trainee, age 42, was injured when he climbed onto an elevated pallet of screens and fell about 17 feet to the ground. The victim died on May 25, 2006 as a result of the fall. The victim and two other mechanics were preparing to off load screens at the Diester screen work platform. A forklift had been used to lift a pallet of screens to the level of the work platform. Andrade was unable to slide the top screen off the pallet and climbed over the double handrail onto the pallet. His weight caused the pallet to tip. The victim and the screens fell approximately 17 feet to the ground.

The accident occurred because the procedures to complete the task were inadequate and failed to identify possible fall hazards when unloading the screens. The victim did not wear a safety belt and line when he climbed onto the pallet located 17 feet about the ground.

GENERAL INFORMATION

3M Corona Plant, owned and operated by Minnesota Mining & Manufacturing Company was located at 18750 Minnesota Road, Corona, Riverside County, California. 3M Corona Plant was a multi-bench crushed stone and milling facility. The principal operating official was Carole Beesley, plant manager. The mine operated three 8-hour shifts a day, seven days a week. Total employment was 135 persons.

Stone was mined from multiple benches and hauled to the crushing plant where it was crushed, sized, and conveyed to the milling facility. The last regular inspection of this operation was completed on January 17, 2006.

DESCRIPTION OF ACCIDENT

On the day of the accident, Federico G. Andrade (victim) reported for work at his normal starting time of 2:00 p.m., along with, mechanics Angel Capilla and Leonard Markevicz. Larry Cannady, supervisor gave them a work order to change the screens on the Diester screening plant at the crude crusher area. Cannady informed them that Paul Murillo, department helper, was preparing the screens and would position them with a forklift when they were ready. Capilla went to get respirators for the installation work while Markevicz and Andrade removed the old screens from the Diester screen. When Capilla return to the screening plant, Richard Snell, crusher supervisor, was on the work platform talking with a laborer who had been cleaning it off. Snell left the Diester screen area. Murillo operated the fork lift, under Markevicz's directions, and drove the screens to the south side of the Diester screen work platform. Typically, this area was used to off load pallets because the hand railing could be removed to afford access to the deck.

When Murillo positioned the forklift and raised the pallet of screens, Markevicz, realized that the material on the work platform prevented them from placing the screens at the normal unloading area. Markevicz then directed Murillo to drive to the north side of the work platform.

When Murillo arrived on the north side, he informed the mechanics he was not comfortable lifting the screens to the second level on that side, at an angle and over the conveyor, because he had never done it before. After some discussion, Markevicz told Murillo that he would come down and position the forklift because he had done it several times in the past. Murillo then went to tell the supervisor that since he was not comfortable lifting the screens in that location, Markevicz would run the forklift.

Capilla and Andrade were on the work platform, working on the Diester screen, while Markevicz was operating the forklift. When the screens were first lifted into position, Andrade told Markevicz that the pallet needed to be slid further out on the forks to get them closer to the deck. The pallet was lowered, slid out, and raised up under the direction of Andrade. With the forklift fully extended vertically, the pallet was six inches to low to go over the hand rail. Capilla unbolted a top section of hand rail to get the forklift closer but the pallet still did not clear the hand rail.

As Markevicz reached down to set the park brake and take the forklift out of gear, he heard a loud noise. When Markevicz looked up, Andrade and the screens were falling to the ground. On the work platform, Capilla had turned around to get the piece of hand rail to bolt back in place when he also heard a loud noise. When he turned around, he also saw Andrade and the screens fall to the ground.

Capilla called for help while miners in the area lifted the screens off Andrade. Emergency assistance arrived within minutes. Andrade was taken to a local hospital where he died on May 25, 2006. The cause of death was attributed to an embolism resulting from blunt impact to the torso.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 7:52 p.m., on May 22, 2006, by a telephone call from Ellen Schieber, environmental health safety engineer, to Karonica Glover, assistant district manager. An investigation began the same day.

MSHA's accident investigation team conducted a physical inspection of the accident site, interviewed employees, inspected equipment involved, reviewed documents 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 on Level 3, of the crude crushing area at the elevated Diester screen work platform. One end of this elevated work platform was equipped with an electric hoist and a wide gate in the hand railing where the screens were normally lifted onto the platform. An old skid with used screens and a build up of rock and sand prevented the pallet from being positioned on the platform in the usual location.

Toyota Forklift

The forklift used to lift the pallet of screens was a Toyota, Model 7FDAU50, with a 11,000 pound load capacity. The forks could be lifted to a height of 187 inches (15.59 feet). The pallet and screens were stacked 18 inches higher than the forks. The forklift could not raise the pallet high enough to position the load above the top handrail of the deck. The forklift was inspected and found to be free of defects.

Pallet

The pallet was constructed with 1-inch by 6-inch top deck boards without bottom deck boards. There were 2-inch blocks positioned on each corner of the top deck boards to allow room for the forks to get under the pallet. This construction did not provide a method to secure the pallet to the forks. A standard pallet is constructed with 4 inch

blocks between a top deck and the bottom deck. The opening between the two decks helps secure the pallet to the forks.

Screens

The screens being lifted at the Diester screening plant were 39 ¾ inches by 42 ½ inches. There were 18 screens, which weighed about 1212 pounds, stacked on the pallet and lifted by the forklift.

Diester Screen and Work Platform

The top of the hand rail on the Diester screen work platform was 16 feet 6 inches from ground level. The work platform was about 46 inches wide and 18 feet long with hand railing installed around the perimeter. The top hand rail was at a height of 42½ inches above the platform.

Weather Conditions

Weather conditions were clear. The temperature outdoors was approximately 90 degrees Fahrenheit and was not considered a factor in the accident.

Training and Experience

Federico G. Andrade had a total of about 14 years, 10 months mining experience, all at this mine. He had not received annual refresher training in accordance with 30 CFR, Part 46. This violation was cited separately and did not contribute to the accident.

ROOT CAUSE ANALYSIS

A root cause analysis was performed and the following factors were identified:

Root Cause: Policies and controls were inadequate and management failed to ensure the use of fall protection when persons were positioned where there was a danger of falling. There was no discussion between management and the miners to identify possible hazards and establish safe procedures to unload the screens at the elevated work location.

Corrective Action: Management should reinforce its training on fall protection use. A written procedure should be established related to changing screens at this location. Management should consider utilizing an all terrain forklift to position material at elevated locations. Management should utilize risk assessment jointly with miners to discuss possible hazards and establish safe procedures before beginning maintenance tasks.

CONCLUSION

The accident occurred because safe work procedures were not in use during the screen change and management failed to ensure the use of fall protection when work was performed where there was a danger of falling.

ENFORCEMENT ACTIONS

Citation Number 6384418: was issued on July 5, 2006, under the provisions of Section 104 (a) of the Mine Act for a violation of 30 CFR 56.15005:

On May 22, 2006, a miner was fatally injured at this mine when an elevated load flipped and he fell about 17 feet to the ground. The victim had climbed over a railing and stepped onto the elevated load being positioned by a forklift. Safety belts and lines were not utilized while work was being performed where there was a danger of falling.

The citation was terminated on July 5, 2006, when miners were retrained in the use of fall protection and a written procedure was developed for screen changes. Miners have been trained in this procedure.

Approved By:

_____ _____

Arthur L. Ellis
District Manager

Date

APPENDIX

Persons Participating in the Investigation

Minnesota Mining and Manufacturing Company

Carole P. Beesley	plant manager
John S. Lowrey	environmental health and safety manager
Roberta A. Reed	environmental health and safety specialist
David W. Walls	manufacturing director
Ellen Schieber	environmental health and safety engineer
Peter S. Gould	attorney, Patton Boggs LLP

Mine Safety and Health Administration

Rickie D. Dance	mine safety and health inspector
David W. Cheney	mine safety and health inspector
Isabel Williams	mine safety and health specialist