MAI-2005-28

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

METAL AND NONMETAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Industrial Sand)

Fatal Fall of Person Accident
October 12, 2005

Fairmount Minerals
Best Sand Corporation
Chardon, Geauga County, Ohio
Mine I.D. No. 33-00015

Investigators

Gary L. Belair
Mine Safety and Health Inspector

J. Jarrod Durig
Civil Engineer

Originating Office
Mine Safety and Health Administration
North Central District
515 West First Street, Room 333
Duluth, MN 55802-1302
Steven M. Richetta, District Manager

OVERVIEW

Timothy J. Nevison, bag plant operator, age 37, was fatally injured on October 12, 2005, when he fell 17-1/2 feet from the roof of a bulk bag warehouse while shoveling sand that had accumulated along the edges of the roof.

The accident occurred because the procedures used to clean sand that accumulated on the roof were inadequate. The victim shoveled along the edge of the roof without using fall protection where there was a danger of falling. No risk assessment was conducted to identify all hazards associated with this task and no action was taken to protect the workers from the hazards.

GENERAL INFORMATION

Best Sand Corporation, an industrial sand operation, owned and operated by Fairmount Minerals, was located at Chardon, Geauga County, Ohio. The principal operating official was Daniel Gelet, assistant plant manager. The mine normally operated three, 8-hour shifts per day, five days per week. Total employment was 49 persons.

Sandstone was drilled, blasted, and transported by loader to a primary crusher. The crushed material was then moved by conveyor to a processing plant and into storage bins. The finished product was sold bulk or in bags for industrial, landscaping, and recreational uses.

The last regular inspection of this operation was completed on August 24, 2005.

DESCRIPTION OF THE ACCIDENT

On October 12, 2005, Timothy J. Nevison (victim) reported to work at 7:30 a.m., his normal starting time. Nevison and Travis L. Savona, bag plant operator, were assigned to finish shoveling sand from the roof of the bulk bag warehouse. They had both begun this task the previous day.

About 11:15 a.m., Savona heard a noise from Nevison's direction. He went to the east edge of the roof and saw Nevison lying on the concrete loading dock below. Leonard Veccia, truck loader, and several other employees rushed to Nevison's aid and called for emergency medical assistance. Nevison was transported to a local hospital where he was pronounced dead. Death was attributed to blunt force trauma.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident on October 12, 2005, at 12:05 p.m., by a telephone call from Ralph W. Randles, mining manager, to Robert R. Lemasters, supervisory mine safety and health inspector. An investigation was started that day. An order was issued under the provisions of Section 103(k) of the Mine Act, to ensure the safety of the miners. MSHA's accident investigators traveled to the mine, made a physical inspection at 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, employees, and the Ohio Division of Mineral Resources Management.

DISCUSSION

Location of the Accident

The accident occurred at the east edge of the bulk bag warehouse roof, located at the northeast corner of the bag plant. The single pitch roof of the bulk bag warehouse was 68 feet long, 41 feet wide, and 22 feet above the ground.

The roof sloped slightly from west to east about 1 inch every 5 feet. Access to the roof was provided by steps from the bulk bag warehouse. The north and south sides of the roof had small parapet walls ranging in height from 3 inches at the west end to 16 inches at the east end. The roof was bordered along the east side by a 4 inch water control lip and a drain.

The roof's surface structure was composed of a series of rolled shingles covered with tar. A light dusting of sand over the tar surface gave the roof a gritty texture, except in the areas with standing water. A slight depression in the roof surface created a puddle of standing water near the east edge of the roof, in the general area from which the victim fell. The puddle measured 12 inches by 18 inches and varied from 1- to 1-1/2 inches deep. The configuration of the roof prevented the puddle from draining into a drain hole approximately 4 inches away from the roof's edge.

The action of the wind caused accumulations of sand approximately 3–6 inches deep along the edges of the roof. The sand had also accumulated over time from exhaust ventilation and spillage from a conveyor belt that passed along the west end of the roof. The conveyor exited the bag plant from the rotary dryer area and transported product to bins located north of the bag house facility. Sand accumulations in the general area of the conveyor were reportedly up to 12 inches deep.

There were no handrails along the unprotected edges of the roof. No anchorage points were available on the roof for affixing a safety belt and line; however, safety belts and lines were provided near the bins and at the maintenance shop.

Weather

The weather was not considered to be a factor of the accident. It was overcast with a temperature of approximately 60 degrees Fahrenheit. A light rain had fallen earlier that morning.

Cleaning Method, Tools, and Equipment

Accumulations of material were cleaned up every two to three years to prevent excessive loading. Previously, sand was cleaned from the edges of the roof with a high pressure water hose.

The victim had been using a shovel with a 5 foot handle and a 12 inch flat blade. Shovel marks in the remaining sand indicated that the victim shoveled parallel to the roof's east edge.

Training and Experience

Timothy J. Nevison had ten weeks and four days total mining experience, all at this operation. He had received training in accordance with 30 CFR, Part 46.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted and the following causal factor was identified:

Causal Factor: Safe work procedures were inadequate. Personnel assigned to shovel accumulations of material along the edge of the roof were not briefed regarding the use of fall protection when the task was assigned. The victim shoveled parallel to the edge of the roof without wearing a safety belt secured to a line. No anchorage points to secure a line had been installed.

Corrective Action: Conduct a risk analysis before starting work to identify hazards and implement measures to ensure persons are properly protected. Monitor tasks to reinforce safe procedures and ensure that employees wear fall protection where there is a danger of falling. Determine if the task could be performed a safe distance from the edge of the roof using other methods such as high pressure water.

CONCLUSION

The accident occurred because safe work procedures were not used to protect persons performing a task while positioned at an elevated location. The victim shoveled along the edge of the roof without using fall protection. No risk assessment was conducted to identify all hazards associated with this task and no action was taken to eliminate them.

VIOLATIONS

Order No. 6167802 was issued on October 12, 2005, under the provisions of Section 103(k) of the Mine Act:

> A fatal accident occurred at this operation October 12, 2005, when two miners were attempting to shovel sand from the roof of the bag house. This order is issued to assure the safety of all persons at

this operation. It prohibits all activity at the bag house loading dock area and on the roof of the bulk bag warehouse until MSHA has determined that it is safe to resume normal mining operations in the area. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operations to the affected area.

This order was terminated on October 14, 2005. The conditions that contributed to the accident no longer exist.

Citation No. 6177766 was issued on November 4, 2005, under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.15005:

A fatal accident occurred at this mine on October 12, 2005, when a bag plant operator fell approximately 17½ feet from the bulk bag warehouse roof. The victim was shoveling material that had accumulated along the edge of the roof. A safety belt and line was not being worn while work was being performed near the edge of the roof where there was a danger of falling.

This citation was terminated on November 7, 2005. Mine management revised the mine's fall protection policy and held safety meetings to explain the policy to all of the mine employees. The training included special emphasis regarding the hazards associated with working from elevated positions and specifically the required fall protection to use when working on a roof.

Approved by: Date:

Steven M. Richetta
District Manager
North Central District

APPENDIX A

Persons Participating in the Investigation

Fairmount Minerals

Daniel Gelet	plant manager
Ralph Randles	mining manager
Richard Moody	maintenance superintendent

Ohio Division of Mineral Resources Management

Gregory D. Plumly	mine safety specialist
Fredrick A. Kidd	mine safety specialist

Mine Safety and Health Administration

Gary L. Belair	mine safety and health inspector
J. Jarrod Durig	civil engineer