MAI-2010-10

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 Sandstone

Fatal Fall of Person Accident
June 12, 2010

MOR-PPM, Inc.
Contractor ID G908
at
Unimin Minnesota Corporation
Ottawa Pit and Plant
Le Sueur, Le Sueur County, Minnesota
Mine ID No. 21-00790

Investigators

George F. Schorr
Supervisory Special Investigator

Carol L. Tasillo, P.E.
Civil Engineer

Maxwell A. Clark
Electrical Engineer

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

OVERVIEW

Thomas S. Edwards, ironworker, age 46, died on June 12, 2010, when he fell off a ladder. He then went over a handrail of a stairway landing and fell 47 feet to the ground below. Edwards was standing on the ladder doing preparation work for a future weld on a ventilation duct. The ladder was located near the handrail.

The accident occurred because contractor management policies and procedures failed to ensure that persons could safely perform work while standing on a ladder where there was a danger of falling to a lower level. The victim was not wearing fall protection. Investigators could not determine if a shock or burn caused the victim to lose his balance.

GENERAL INFORMATION

The Ottawa Pit & Plant, owned and operated by Unimin Minnesota Corporation (Unimin), is located in Le Sueur, Le Sueur County, Minnesota. The principal operating official is Grey M. Lusty, plant manager. The mine normally operates three, 8-hour shifts a day, 7 days per week. Total employment is 45 persons.

Unimin is a surface mining and milling facility that processes silica sand from a nearby single bench surface quarry. The material is primarily sold for use in industrial manufacturing processes.

Unimin contracted MOR-PPM Inc. (MOR-PPM), located in Society Hill, South Carolina, to perform steel erection and plant maintenance at the mine. The principal operating official is Henry Moree, ceo/president. Thomas Edwards was employed by MOR-PPM.

The last regular inspection at Unimin was completed on March 9, 2010.

DESCRIPTION OF ACCIDENT

On the day of the accident, Thomas Edwards (victim) reported to work at 7:00 a.m., his normal starting time, along with five members of the MOR-PPM crew working at Unimin. Chadwick R. Edwards, MOR-PPM site supervisor, conducted a safety meeting and then provided work assignments to the crew members. Chadwick Edwards assigned Thomas Edwards and Joshua Edwards, welder, to repair a handrail located on the load cell access walkway. At approximately 10:30 a.m., Chadwick Edwards then assigned Thomas Edwards and Joshua Edwards to move their welding equipment to the top level of the load out building to prepare to weld after their lunch break. About 1:45 p.m., Chadwick Edwards instructed Thomas Edwards and Joshua Edwards to weld the ventilation ductwork on the third level permanently in place.

Joshua Edwards arrived at the worksite and positioned a stepladder on the stairway landing to access the ventilation ductwork. Joshua Edwards then tied off the fall protection he was wearing, climbed up onto the ventilation ductwork, and began welding one of the ventilation ductwork joints. Thomas Edwards positioned the welding leads he was going to use and then repositioned the same ladder Joshua Edwards used to access the ventilation ductwork.

Joshua Edwards saw Thomas Edwards place his foot on the bottom step of the stepladder. Joshua Edwards then turned and began welding on the ventilation ductwork. At approximately 2:20 p.m., Joshua Edwards heard a noise and saw Thomas Edwards falling over the handrail of the stairway landing.

James Whitmarsh, mine supervisor, was notified of the accident. He called for emergency medical services. The Le Sueur County Deputy Sherriff and the Le

Sueur County Ambulance arrived and transported the victim to a local hospital where he was pronounced dead at 3:20 p.m. by Dr. Joseph Anderson, deputy coroner for Le Sueur County. The cause of death was attributed to blunt force trauma. The medical examiner also noted an apparent electrical burn to the victim's left foot. However, investigators found no conclusive evidence the victim received an electrical shock.

INVESTIGATION OF THE ACCIDENT

The Mine Safety and Health Administration (MSHA) was notified of the accident on June 12, 2010, at 2:25 p.m., by a telephone call from Grey M. Lusty, plant manager, to the National Call Center. William H. Pomroy, mine safety and health specialist, was notified and an investigation began the same day. An order was issued pursuant to 103(j) and modified to 103(k) of the Mine Act to ensure the safety of the miners.

MSHA's accident investigation team traveled to the mine, conducted a physical examination of the accident scene, interviewed employees, and reviewed documents, equipment, and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of Unimin and MOR-PPM management and employees and the Le Sueur County Coroner's office.

DISCUSSION

Location of Accident

The accident occurred on a stairway landing (Figure 1) on the exterior of the load out building. The ladder was positioned between an existing ventilation duct and another ventilation duct that was being installed (Figure 2). The elevation of the ducts placed the centerline of the existing duct at the same elevation as the top of the ladder. The duct being installed was located slightly higher and about 34 inches from the existing duct.

Handrails

The plant stairs, landings, and walkways were provided with handrails. Handrails were approximately 42½ inches high with a mid-rail approximately 24¼ inches above the walking surface. The rails were 1-inch diameter round bar. The posts were 2½-inch wide, 3/8-inch thick, flat bar that was twisted near the top rail so the flat bar was welded parallel to the underside of the top rail. The posts were welded to the steel channel supporting grating or to steel plate walkways. The posts were spaced less than 72 inches apart and were attached with two hex-head bolts at the stairways. The handrails also included a 4-inch toe board mounted about ¼ inch above the walking surface.

Ladder

The ladder involved in the accident was a Werner, fiberglass 8-foot stepladder rated at 250 pounds load capacity. The left rear rail of the ladder was cracked. The crack started at the bottom of the rail and propagated to just above the bottom horizontal strut. The crack did not appear to be new and did not exhibit signs of undue stress upon the rail. The ladder contained a brace between the rail and the bottom horizontal strut that reinforced the rail at the crack. A non-contributory violation was issued for the crack on the ladder.

Personal Protective Equipment

At the time of the accident, Thomas Edwards was wearing a standard fiberglass hardhat, an automatic darkening welder face shield, gloves, and steel-toe boots. The gloves were Tillman unlined leather welding gloves. The boots were Red Wing 8-inch leather with non-metallic toes and additional electrical hazard protection.

Thomas Edwards was not wearing a personal fall protection system; however, a fall protection harness and lanyard were in a tool storage box in his pickup truck.

Welders

At the time of the accident, Thomas Edwards was using a Miller SRH-444 stick welder, powered from the plant's electrical system at 277/480 volts alternating current (AC). The positive and negative welding leads connected to the welder had cuts and abrasions. A non-contributory citation was issued for this condition.

Joshua Edwards was using a Miller Pro 300 CC/CV Direct Current (DC) welding generator that operated off a Caterpillar 3013C diesel engine. Investigators examined both welders and tested the Miller SRH-444 stick welder output voltage. Neither welder was considered to be a factor in the accident.

Weather

At the time of the accident, the weather was overcast with a temperature about 60 degrees Fahrenheit and 88 percent relative humidity. Rain and thunderstorms were in the area between 9:00 a.m. and 10:15 a.m. However, lightning or any weather was not considered to be a factor in the accident.

Training and Experience

Thomas S. Edwards had approximately four years of experience conducting steel erection, plant maintenance, welding and other related work activities for either MOR-PPM or a predecessor contracting company. He had worked at Unimin

approximately one month conducting steel erection and plant maintenance work. He had received training in accordance with 30 CFR Part 46.

ROOT CAUSE ANALYSIS

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

Root Cause: Contractor management policies and procedures were inadequate and failed to ensure that persons could safely perform work while standing on a ladder where there was a danger of falling.

Corrective Action: Contractor management trained all persons to recognize hazards where there is a danger of falling and to properly use fall protection where the potential falling hazards exist.

CONCLUSION

The accident occurred because contractor management policies and procedures failed to ensure that persons could safely perform work while standing on a ladder where there was a danger of falling to a lower level. The victim was not wearing fall protection and fell to the ground, 47 feet below. Investigators could not determine if a shock or burn caused the victim to lose his balance.

ENFORCEMENT ACTIONS

Unimin Minnesota Corporation

Order No. 6492745 was issued on June 12, 2010, under Section 103(j) of the Mine Act:

> A fatal injury occurred at this mining operation on June 12, 2010, when in the "special products bulk load out" area, a contract employee fell over a hand railing. The miner was working on a stairway landing located three levels above the ground floor. The mine operator was verbally issued a 103(j) order which required the mine operator to secure the area and take measures to prevent destruction of any evidence which would assist in investigating the cause or causes. At approximately 10:00 p.m. the order was modified to a 103(k) order. The 103(k) order was issued to assure the safety of all persons at this operation. In order to ensure safety of persons at the mine, the 103(k) order prohibits persons form working in the "special product bulk load" until MSHA can determine it is safe to resume operations in the affected area. The operator shall obtain approval from an authorized representative for all actions to recover and/or restore operations in the affected area.

The order was terminated on June 23, 2010, after it was determined that conditions that may have contributed to the accident no longer existed.

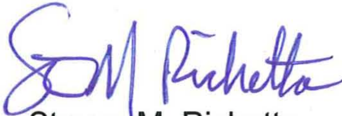
MOR-PPM Inc.

Citation No. 6135233 was issued on August 6, 2010, under provisions of 104(a) of the Mine Act for a violation of 30 CFR Part 56.15005:

> A fatal accident occurred at this operation on June 12, 2010, when a contractor employee fell approximately 47 feet. The victim was conducting maintenance work from a ladder on an exterior stairway landing. The ladder was positioned in a location that exposed him to a fall hazard. A safety belt and line was not being worn while work was being performed.

The citation was terminated on August 27, 2010, after management implemented a new policy on the use of fall protection.

Approved by: Date: OCT 14 2010



Steven M. Richetta
District Manager
North Central District

APPENDIX A

Persons Participating in the Investigation

MOR-PPM, Inc.

John Mathrole	Corporate Environmental Health & Safety Manager
Bobby L. Ollis	Vice-President
Chadwick R. Edwards	Site Supervisor

EMCOR Group, Inc. (Parent Company to MOR-PPM, Inc.)

David J. Rodwick	Regional Director, Safety Northeast

Unimin Minnesota Corporation

Grey M Lusty	Plant Manager
Reid E. Gronski	Plant Superintendent
Kathy A. Wetzel	Quality Control/Safety Superintendent
William R. Fox	Manager, Safety & Health

Jackson Kelly, PLLC

Karen L Johnston	Attorney for Unimin

Larson King, LLP

Caryn A Boisen	Attorney for MOR-PPM, Inc.

Mine Safety and Health Administration

George F. Schorr	Supervisory Special Investigator
Carol L. Tasillo, P.E.	Civil Engineer
Maxwell A. Clark	Electrical Engineer

APPENDIX B

Figure 1 – Work area location

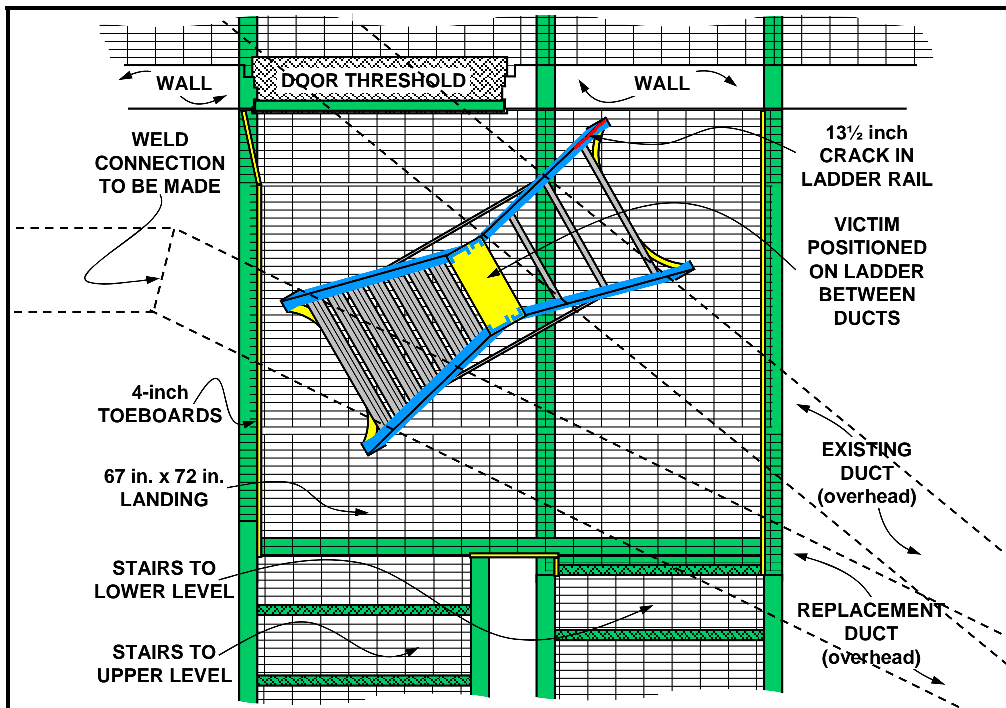


Figure 2 - Layout of work area

APPENDIX C

Accident Investigation Data - Victim Information
Event Number: 6 | 5 | 1 | 2 | 7 | 5 | 2

U.S. Department of Labor
Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee: *Thomas S. Edwards*
2. Sex: *M*
3. Victim's Age: *46*
4. Degree of Injury: *01 Fatal*

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: a. Date: *06/12/2010* b.Time: *15:20*

6. Date and Time Started: a. Date: *06/12/2010* b.Time: *7:00*

7. Regular Job Title: *121 ironworker*

8. Work Activity when Injured: *098 preparation work for welding*

9. Was this work activity part of regular job? Yes: X No:

10. Experience

	Years	Weeks	Days
a. This Work Activity:	0	5	6
b. Regular Job Title:	4	5	6
c. This Mine:	0	5	6
d. Total Mining:	4	0	0

11. What Directly Inflicted Injury or Illness? *117 Fall from height*

12. Nature of Injury or Illness: *370 Blunt force trauma*

13. Training Deficiencies: Hazard: New/Newly-Employed Experienced Miner: Annual: Task:

14. Company of Employment: (If different from production operator) *MOR-PPM Inc* Independent Contractor ID: (if applicable) *G908*

15. On-site Emergency Medical Treatment: Not Applicable: First-Aid: X CPR: X EMT: Medical Professional: None:

16. Part 50 Document Control Number: (form 7000-1)

17. Union Affiliation of Victim: *9999 None (No Union Affiliation)*