MAI-2006-21

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

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Sand and Gravel)

Fatal Falling Material Accident
October 4, 2006

Bollmeier Construction Company
Contractor I.D. No. B04
at
Cemstone Products Company
Henderson Pit
Henderson, Sibley County, Minnesota
Mine I.D. No. 21-03557

Investigators

Stephen W. Field
Mine Safety and Health Specialist

William G. Dethloff III
Mine Safety and Health Inspector

Phillip L. McCabe
Mechanical Engineer

Amy A. Lindgren
Mine Safety and Health Specialist

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

Glen A. Phillips, dragline operator, age 59, was fatally injured on October 4, 2006, when the operator's cab of a dragline that he and two other miners were removing, fell and pinned him. The operator's cab was being removed to access the transmission for repairs.

The accident occurred because procedures were not established to block the operator's cab on the dragline against hazardous motion prior to removal of the cab mounting bolts.

GENERAL INFORMATION

Henderson Pit, a surface sand and gravel mining operation, owned and operated by Cemstone Products Company (Cemstone), was located at Henderson, Sibley County, Minnesota. Cemstone employed one person, 40 hours per week. The principal operating officials were Hammon T. Becken, corporate executive officer, and Thorwald Becken, president.

Cemstone had contracted with Bollmeier Construction Company (Bollmeier), Marissa, Illinois, to extract raw material at this pit. The principal operating official was Gary R. Bollmeier, president. Bollmeier employed two persons at this mine, working one, 12-hour shift per day, seven days a week.

Raw material was extracted from the pit and stockpiled with a track-mounted dragline, which was the extent of Bollmeier's involvement at this mine. Material was then crushed, screened, and conveyed to stockpiles by another on-site contractor. Finished products were sold for use as construction aggregate.

Bollmeier contracted with William J. Novotny, owner, Industrial Diesel and Machine, to help repair the dragline.

The last regular inspection of this operation was completed on September 13, 2006.

DESCRIPTION OF ACCIDENT

On the day of the accident, Glen A. Phillips (victim) and Kenneth L. Schmitt, dragline operators, reported to work at 7:00 a.m., their normal starting time. In preparation to remove the dragline transmission, they first disconnected and removed the stairway leading to the operator's cab and the transmission chain case cover. William Novotny, contracted mechanic, arrived at 8:00 a.m. Phillips decided to remove the operator's cab. He and Schmitt began disconnecting hoses and wiring leading to the cab while Novotny removed five of the six bolts that secured the cab to the frame supports. Novotny told Phillips and Schmitt that he had left one bolt in place to secure the cab until they were ready to remove it.

About 10:00 a.m., Phillips told Schmitt to start the crane and he would hook the slings to lift the cab from its mount supports. While Schmitt was traveling to the crane, he heard a noise and turned to see the cab had fallen from its mount supports. The cab pinned Phillips between the handrail of the operator's cab and the handrail of the lower walkway. Schmitt and Novotny used the crane to lift the cab off Phillips. Emergency medical personnel were summoned and treated Phillips. Phillips was pronounced dead at the scene by the Sibley County assistant coroner. Death was attributed to blunt force trauma.

The investigators located the bolt and determined that it had not been damaged. However, they could not determine when the bolt had been removed.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 11:30 a.m. on October 4, 2006, by a telephone call from Gary Bollmeier, president, to Gerald Holeman, assistant district manager. An investigation was started the same day. An order was issued pursuant to Section 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 inspection of the accident site, interviewed employees, and reviewed conditions and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and the contractors.

DISCUSSION

Location of the Accident

The accident occurred at the pit area. The area was level and dry where the dragline was positioned for repair.

Dragline

The dragline involved in the accident was a crawler-tracked machine equipped with a winch, manufactured by Skookum (Model No. K114CS). Reportedly, this custom machine was assembled from components manufactured by various companies and individuals.

The operator's cab and platform assembly were located on an upper level of the machine. To gain access to the operator's cab, the operator had to climb a stairway attached to the first level walkway.

The operator's cab was a fabricated sheet metal box structure which housed the operating controls and operator's seat of the machine. Two eyebolts were installed on the cab roof and were intended to be used to attach lifting slings.

The cab was mounted to a platform fabricated from structural steel members welded together to form a rectangular shaped structure. The cab was located on the most forward, left-handed corner on the platform. Tubular steel handrails were also attached to the platform. The assembly, operator's cab and platform, was then attached to two protruding structural steel members (cab mounts) with six thru-bolts and nuts that were the primary fasteners used to attach the operator's cab and platform to the machine.

Weather

Weather conditions were clear on the day of the accident and were not considered a factor.

Training and Experience

Glen A. Phillips had 18 years and 5 months of mining experience. He had received training in accordance with 30 CFR, Part 46. Phillips had operated the dragline for 10 years and had previously performed the task of removing the dragline transmission in April, 2006.

Kenneth L. Schmitt had 1 year and 5 months experience performing maintenance on the dragline involved in the accident.

William J. Novotny had 45 years experience performing maintenance on draglines.

ROOT CAUSE ANALYSIS

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

Root Cause: Management policies and controls were inadequate. A risk assessment to determine all possible hazards and to establish safe work procedures was not conducted prior to repairing the transmission on the dragline. The operator's cab was not blocked to prevent hazardous motion prior to removing the bolts.

Corrective Action: Procedures should be established that require a risk assessment to be conducted to identify all potential hazards associated with the task to be performed. These procedures should include a joint discussion of the actions that will be taken to protect all persons from possible hazards.

CONCLUSION

The accident occurred because procedures were not established to block the operator's cab on the dragline against hazardous motion prior to removal of the cab mounting bolts.

ENFORCEMENT ACTIONS

Order No. 6188382 was issued on October 4, 2006, under Section 103(k) of the Mine Act:

> A fatal accident occurred at this mining operation on October 4, 2006, when two dragline operators and a mechanic were removing the Skookum Dragline operator's cab to expose the

> transmission for repair work. This order is issued to assure the safety and health of persons at this operation and prohibits any work in the affected area until MSHA determines that it is safe to resume mining operations as determined by an authorized representative of the Secretary of Labor. The mine operator shall obtain approval from an authorized representative for all actions to recover and/or restore operations in the affected area.

This order was terminated on October 6, 2006, after conditions that contributed to the accident no longer existed.

Citation No. 6188388 was issued on October 23, 2006, under the provisions of Section 104(a) of the Mine Act for violation of 30 CFR 56.14105:

> On October 4, 2006, a fatal accident occurred at this operation when a dragline operator was struck by the falling cab of the dragline. The victim and two other workers were removing the Skookum Dragline operator's cab to access the transmission for repairs. Six anchor bolts that secured the operator's cab in place were removed. The operator's cab was not blocked against hazardous motion prior to removal of the cab anchor bolts.

This citation was terminated on October 23, 2006. The mine operator developed a written policy for safe procedures to be followed while making repairs on machinery or equipment. All mine employees were trained on proper blocking and/or rigging of components being removed, prior to removing any bolts, pins, or fasteners.

Approved by: Date:

Steven M. Richetta
District Manager
North Central District

APPENDIX A

Persons Participating in the Investigation

Bollmeier Construction Company

Gary R. Bollmeier	president
Kenneth L. Schmitt	dragline operator

Cemstone Products Company

Michael R. Brekken	safety director
Kenneth M. Kuhn	business development

Industrial Diesel and Machine

William J. Novotny	owner

Mine Safety and Health Administration

Stephen W. Field	mine safety and health specialist
William G. Dethloff III	mine safety and health inspector
Phillip L. McCabe	mechanical engineer
Amy A. Lindgren	mine safety and health specialist

Accident Investigation Data - Victim Information

Event Number: 0 9 8 4 5 0 3

APPENDIX B

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

Victim Information: 1

1. Name of Injured/Ill Employee:	2. Sex	3. Victim's Age	4. Last Four Digits of SSN:	5. Degree of Injury:
Glen A. Phillips	*M*	*59*		*01 Fatal*

6. Date(MM/DD/YY) and Time(24 Hr.) Of Death: *a. Date: 10/04/2006 b.Time: 10:00*

7. Date and Time Started: *a. Date: 10/04/2006 b.Time: 7:00*

8. Regular Job Title: *161 Dragline Operator*

9. Work Activity when Injured: *039 Part Time-Machine Maintenance/Repair*

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

11. Experience	Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days
a. This Work Activity:	8	23	0	b. Regular Job Title:	8	23	0	c: This Mine:	2	36	0	d. Total Mining:	18	23	0

12. What Directly Inflicted Injury or Illness? *076 Surface mining machines*

13. Nature of Injury or Illness: *170 Death*

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

15. Company of Employment:(If different from production operator) *Bollmeier Construction Company*

Independent Contractor ID: (if applicable) *B04*

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

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

18. Union Affiliation of Victim:

Victim Information:

2. Sex | 3. Victim's Age | 4. Last Four Digits of SSN: | 5. Degree of Injury:

6. Date(MM/DD/YY) and Time(24 Hr.) Of Death:

7. Date and Time Started

8. Regular Job Title:

9. Work Activity when Injured:

10. Was this work activity part of regular job? Yes | No

11. Experience:	Years	Weeks	Days		Years	Weeks	Days		Years	Week	Days		Years	Weeks	Days
a. This Work Activity:				b. Regular Job Title:				c: This Mine:				d. Total Mining:			

12. What Directly Inflicted Injury or Illness?

13.Nature of Injury or Illness:

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

15. Company of Employment: (If different from production operator)

Independent Contractor ID: (if applicable)

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

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

18. Union Affiliation of Victim:

Victim Information:

2. Sex | 3. Victim's Age | 4. Last Four Digits of SSN: | 5. Degree of Injury:

6. Date(MM/DD/YY) and Time(24 Hr.) Of Death:

7. Date and Time Started:

8. Regular Job Title:

9. Work Activity when Injured:

10. Was this work activity part of regular job? Yes | No

11. Experience:	Years	Weeks	Days		Years	Weeks	Days		Years	Week	Days		Years	Weeks	Days
a. This Work Activity:				b. Regular Job Title:				c: This Mine:				d. Total Mining:			

12. What Directly Inflicted Injury or Illness?

13. Nature of Injury or Illness:

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

15.Company of Employment:(If different from production operator)

Independent Contractor ID: (if applicable)

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

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

18. Union Affiliation of Victim: