

**UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION**

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Crushed Granite)

Fatal Fall of Person Accident
July 19, 2004

NUCOR Drilling, Inc. (J318)
Locust Grove, Henry County, Georgia

at
Florida Rock Industries Cement Group
Macon Quarry
Macon, Monroe County, Georgia
Mine I. D. 09-00015

Accident Investigators
Joel B. Richardson
Supervisory Mine Safety and Health Inspector

Donald H. Daniels
Mine Safety and Health Inspector

Thomas J. Morgan
Mine Safety and Health Specialist

Originating Office
Mine Safety and Health Administration
Southeast District
135 Gemini Circle, Suite 212: Birmingham, Alabama 35209
Michael A. Davis, District Manager

OVERVIEW

James P. Howell, driller, age 41, was fatally injured on July 19, 2004, when he fell approximately 90 feet from the top of a highwall to the pit floor. The victim

was attempting to rethread a drill steel while standing near the highwall edge when he fell.

The accident occurred because the victim was working near the edge of the highwall and was not wearing a safety harness and lanyard that was securely anchored. He was positioned between the boom of the drill and the edge of the highwall when he slipped and fell to the quarry floor below.

GENERAL INFORMATION

The Macon Quarry, a crushed granite quarry and plant, owned and operated by Florida Rock Industries Cement Group, was located off County Highway 87, along Pea Ridge Road, about 15 miles north of Macon, Monroe County, Georgia. The principal operating official was William B. Lawson, Plant Manager. The mine normally operated two 10-hour shifts a day, five days a week. Total employment was 33 persons.

Granite was drilled and blasted, from multiple benches, then loaded onto haul trucks with a shovel and front end loaders. The material was hauled to the primary crusher where it was crushed, dumped onto a conveyor belt, and transported to the surge pile. The rock was further crushed, screened, sized, washed, stockpiled and sold for use in the construction industry.

NUCOR Drilling, Inc. (NUCOR) was contracted by the mining company for the past two years to do all the blast hole drilling at the mine. NUCOR was located at 100 Lance Drive, Locust Grove, Georgia. The contractor employed two persons at this location, operating two drill rigs. The principal operating official was James W. Jones, owner. The victim worked for NUCOR.

The last regular inspection at this operation was completed February 12, 2004.

DESCRIPTION OF ACCIDENT

On the day of the accident, Daniel D. Sosebee, drill operator and eye witness, reported for work about 7:00 a.m., his normal starting time. He stated that James P. Howell (victim) started drilling on the 90 foot bench before he arrived. Howell was drilling with a diesel powered truck mounted T-4 Ingersoll Rand drill. Howell also started the diesel powered track mounted CM-780D Ingersoll Rand drill to warm it up. Shortly after Sosebee arrived at the site, the track drill ran out of fuel. The two drillers refueled the track drill and Sosebee took it to the floor of the 90 foot bench to drill the toe. While he was drilling on the toe, the drill mechanic arrived to service the track drill. He did not have all the filters he needed and the drill remained shut down until a filter was purchased.

James W. Jones, NUCOR owner, arrived at the site about 9:30 a.m. and noticed Howell had drilled four holes in the wrong place. A short time later, he saw Howell's drill generating excessive dust. Jones told Howell to stop drilling and he directed Sosebee to finish the drilling. Howell left the pit and went to the shop to call his father for a ride home. Jones stated that he did not see Howell again before leaving the mine.

About 2:00 p.m., Howell returned to the top of the highwall and told Sosebee he could not find a ride home and would help him with the drilling. Howell began drilling with the truck mounted drill while Sosebee brought the track drill to the 90 foot level. Sosebee noticed that Howell was having difficulty getting the hole started. He also noticed that Howell had wallowed out one drill hole and had drilled another hole in the wrong place. Sosebee told Howell to park his drill and he would finish drilling the holes. Howell parked the drill and sat in the service truck while Sosebee operated the other drill.

About 10:00 p.m., Sosebee finished drilling the last hole, and began extracting the drill steel from the hole. After removing two sections of the steel, the next steel unthreaded. Sosebee caught the drill steel with the hydraulic clamps and was assessing the situation when Howell came to help. Sosebee told him he could reconnect the steel from the drill cab, but Howell insisted he could reconnect the steels manually.

Howell and Sosebee took a 36 inch pipe wrench and a small piece of chain from the service truck. Howell wrapped the chain around the drill steel and attached the pipe wrench to the steel. The two men disagreed as to whether the wrench would hold the steel, but Howell insisted. He told Sosebee to get in the drill cab and operate the controls. After several attempts, the drill steels would not align.

Sosebee was exiting the drill cab when he saw Howell sliding over the edge of the highwall. Sosebee ran to the service truck and drove to the lower level of the pit where he found Howell unresponsive. He then drove to the plant and told Nathaniel Hughes, Florida Rock lead man, to call for emergency assistance. Hughes went to the pit and Sosebee went to the mine entrance to direct emergency response personnel to the pit floor. The emergency medical personnel found the victim unresponsive upon their arrival. The county coroner was summoned and pronounced the victim dead at the scene. Death was attributed to severe blunt trauma.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 11:50 p.m. CST on July 19, 2004, by a telephone call from Steve Arney, safety manager for Florida Rock Industries, to Harry L. Verdier, assistant district manager. 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 management and employees of the contractor and the mine.

DISCUSSION

Location of Accident

The accident occurred at the south end of the pit. The highwall being drilled was about 350 foot long and 90 foot high. The blast pattern consisted of 52 holes, ranging in depth from 91 to 98 foot. The holes were located in two rows and drilled on a 14 foot spacing and 17 foot burden. Because of back breakage and toe at the base of the highwall from the previous blast, the front row of holes ranged from four to seven feet back from the edge of the highwall.

The drillers had drilled the last hole that was located in the middle of the drill pattern and about four feet from the highwall edge when the drill steel became unthreaded.

Personal Protective Equipment

Both drill operators were provided with safety harnesses equipped with lanyards. They had been trained in the use of the safety equipment. The contractor's policy required employees to wear the harness and securely attach them to the drill when casing the front row of holes next to the edge of the highwall.

Drills

The drill involved in the accident was a track mounted model CD-780D, Ingersoll-Rand drill powered by a Caterpillar 4200 diesel powered engine. It was equipped with an air conditioned cab where the drill controls were located. After the accident the controls were tested and found to be functional.

Illumination

The CD-780D Ingersoll-Rand drill was equipped with three lights attached to the front and two on the rear. One of the front lights was directed at the mast of the drill, one at the drill hole, and one was used for area lighting. The visibility was checked the night following the accident and the lighting appeared to be

adequate. The victim was standing near the bench edge and the lighting could have been partially blocked by the drill boom. However, there was some moon light on the night of the accident. The weather at the time of the accident was clear and warm.

Training and Experience

Howell was employed by NUCOR for three weeks but had approximately 20 years drilling experience. Although Howell was not operating the drill at the time of the accident, he had experience operating the CD-780 drill. He had received newly hired experienced miner training. Site specific hazard awareness training was provided by Florida Rock Industries personnel.

ROOT CAUSE ANALYSIS

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

Causal Factor: The contractor's fall protection procedure lacked depth because it did not address where employees should securely anchor their lanyards. Employees had been exposed to fall hazards with no method to securely anchor their lanyards.

Corrective Action: The contractor's written policy and procedures should be expanded to identify where safety harness lanyards must be anchored when working near the edge of a highwall. These procedures should also specify the distance from the elevated edge where drillers are required to tie off.

Causal Factor: Management failed to recognize the contractor's work practices because contractor employees were not wearing fall protection at all times where there was a danger of falling.

Corrective Action: Procedures should be established to ensure that all contractor employees understand any potential hazards associated with working near the edge of a highwall. The procedures should require that contractor employees are monitored to ensure that they wear a safety harness and lanyard securely anchored where there is a danger of falling.

CONCLUSION

The accident occurred because the victim positioned himself near the edge of the highwall and was not wearing a safety harness and lanyard that was securely anchored.

VIOLATIONS

Florida Rock Industries Cement Group

Order No. 6077531 was issued verbally on July 19, 2004, followed with a written order on July 20, 2004, under the provisions of Section 103(k) of the Mine Act.

A fatal accident occurred at this operation on July 19, 2004, when a miner fell approximately 90 feet from the ledge while attempting to rethread drill steel.

This order is issued to assure the safety of all persons at this operation. It

Prohibits all activity on the bench of drill activity and the floor below, within

200' until MSHA has determined it is safe to resume normal mining operations in

this 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 July 21, 2004, after conditions that contributed to the accident no longer existed.

NUCOR Drilling, Inc.

Citation No. 7750202 was issued July 30, 2004, under the provisions of Section 104(a) of the Mine Act for violation of 30 CFR 56.15005:

A fatal accident occurred at this operation on July 19, 2004, when a contract driller fell approximately 90 feet from the top of the high wall to the pit floor.

The victim was attempting to rethread the drill steel while standing near the

high wall edge when he fell. A safety harness equipped with a lifeline was

not being worn by the victim while he was working where there was a danger of falling.

This citation was terminated on August 8, 2004. The contractor has provided extensive fall protection training on the correct use of fall protection for all drill operators (12) employed by NUCOR.

Approved by: _____

Date:

Michael A. Davis
District Manager

APPENDIX A

Persons Participating in the Investigation

Florida Rock Industries Cement Group

Darryl R. Niblett	regional area manager
Eric W. Barger	area manager
William B. Conboy	safety director
Steve H. Arney	safety manager

NUCOR Drilling, Inc.

James W. Jones	owner
Victor J. Theriot	production manager
Daniel D. Sosebee	drill operator

Mine Safety and Health Administration

Joel B. Richardson	supervisor mine inspector
Donald H. Daniels	mine safety and health inspector
Thomas J. Morgan	mine safety and health specialist