

MAI-2014-16

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

REPORT OF INVESTIGATION

**Surface Nonmetal Mine
(Cement)**

**Fatal Powered Haulage Accident
July 23, 2014**

**Cemex Construction Materials of Florida LLC
Brooksville South Cement Plant
Brooksville, Hernando County, Florida
Mine I.D. No. 08-01287**

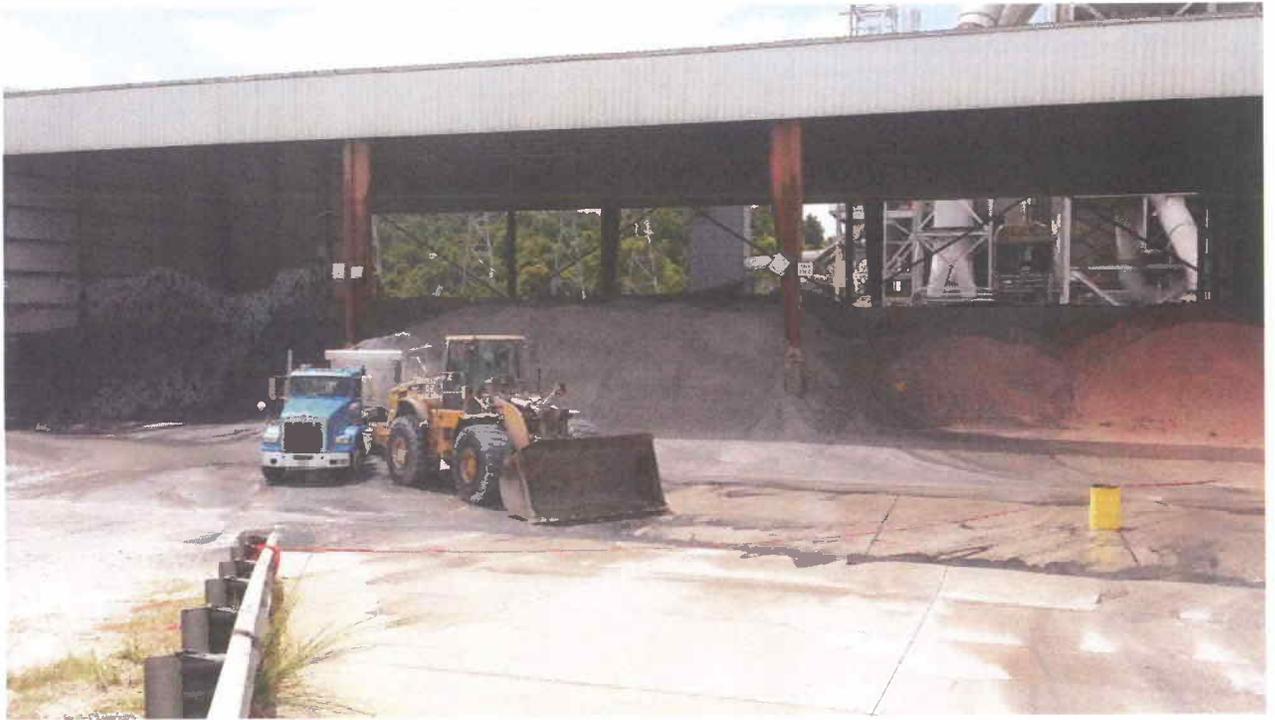
Investigators

**Walter DeLoach
Supervisory Mine Safety and Health Inspector**

**Michael S. Cohen
Mine Safety and Health Inspector**

**Norberto Ortiz
Mine Safety and Health Specialist (Training)**

**Originating Office
Mine Safety and Health Administration
Southeastern District
1030 London Drive, Suite 400
Birmingham, Alabama 35211
Samuel K. Pierce, Southeast District Manager**



OVERVIEW

Ismael Santana, Contract Truck Driver, age 51, was killed on July 23, 2014, when he was struck and pinned between his haul truck and a front-end loader. Santana drove the haul truck to the fly ash dumping point at the materials storage building. Santana exited the haul truck, preparing to untarp the truck's trailer, when the front-end loader backed down a ramp from a nearby hopper and struck and pinned him against the truck.

The accident occurred because management failed to ensure that the operator of the front-end loader maintained control of the loader at all times, specifically while other equipment traveled in the same area. No safe operating procedures had been established to ensure communications between the incoming truck drivers and the front-end loader operators. Additionally, site-specific hazard awareness training had not been provided to Santana regarding the delivery and unloading of the fly ash material.

GENERAL INFORMATION

Brooksville South Cement Plant, a surface cement facility owned and operated by Cemex Construction Materials of Florida LLC, is located in Brooksville, Hernando County, Florida. The principal operating official is Karl M. Watson, Jr., President. James S. Daniel, Plant Manager, is the person in charge of safety and health at the mine. The plant normally operates two 12-hour shifts per day, seven days per week. Total employment is 122 persons.

Limestone is drilled and blasted from the Brooksville Quarry, located approximately three miles from the plant. Haul trucks transport the broken stone to a primary crusher. Crushed stone is then conveyed to the plant where it is mixed and processed with other materials brought to the mine by contract truck drivers to produce cement products. Finished products are sold in bulk and by bag and are transported by truck for use in the construction industry.

Ismael Santana (victim) was the owner/operator of a haul truck and contracted to haul material for New Line Transport, LLC, doing business as Tri-State Carriers. Tri-State Carriers was contracted by Cemex Construction Materials of Florida LLC to haul fly ash to the plant on a daily basis.

Santana had picked up loads of fly ash from the Port of Tampa and delivered them to the mine for the past 13 years.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this operation on July 1, 2014.

DESCRIPTION OF ACCIDENT

On the day of the accident, July 23, 2014, Ismael Santana (victim) reported to the mine guard shack at approximately 8:45 a.m. He was delivering his first truck load of fly ash for the day. Santana typically delivered four to six loads of material to this mine each day.

After Santana checked in, he drove the haul truck to the materials storage building where the raw materials were stored. Prior to the accident, Gary Moore, Front-End Loader Operator, was operating a front-end loader on the north side of the materials storage building where he was loading fly ash into a dump hopper located at the top of an inclined ramp. Moore was responsible for keeping the feed bins loaded by dumping the raw materials into the designated hoppers. The raw materials varied and were loaded as needed depending on the production requirements.

Santana parked his truck and exited with the crank handle to roll back the tarp in his hand. At approximately the same time, Moore dumped a bucket of fly ash into the hopper and backed the front-end loader down the ramp. He then turned the rear of the front-end loader to the east and struck Santana, pinning him between the rear of the front-end loader and the fuel tank of the haul truck. Moore realized he hit the truck and pulled forward slightly. He exited the front-end loader and saw Santana lying on the ground next to the haul truck. Santana was responsive and complaining of chest pain and troubled breathing.

At approximately 8:50 a.m., Moore used the radio to call David Miner in the plant control room to report the accident and to contact 911. Ira Mellies, Maintenance Leadman, came to the scene and he and Moore attended to Santana. Emergency Medical Services (EMS) arrived at the plant at 8:55 a.m. and transported Santana to Bayfront Health Brooksville Hospital in Brooksville, Florida, where he was pronounced dead at 10:06 a.m. by Dr.

Stephen M. Mitchell. The cause of death was attributed to multiple blunt force injuries.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 9:00 a.m. on July 23, 2014, by a telephone call from Bill Butler, Safety Coordinator for Cemex Brooksville Plant, to Danny Andrews, Mine Safety and Health Assistant, Bartow Field Office. Curtis Roth, Supervisory Mine Safety and Health Inspector, was notified and an investigation started the same day. An order was issued under Section 103(j) of the Mine Act to ensure the safety of the miners. This order was subsequently modified to Section 103(k) of the Mine Act when the first Authorized Representative arrived at the mine.

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 employees.

DISCUSSION

Location

The accident occurred on the north side of the materials storage building which is located on the northeast corner of the cement plant. A front-end loader travels in the immediate area where the accident occurred multiple times per shift to feed material into separate feed hoppers located at the end of an elevated ramp. Additionally, numerous contract haul trucks travel the area between the building and the feed hoppers to dump loads of raw material on a daily basis. Other materials delivered include coal, sawdust/shavings, mill steel shavings, and synthetic gypsum.

The delivery area for the trucks and loader is concreted and at the time of the accident, the area was dry and level. The materials storage building is a two sided metal roofed shed with 3 bays on each side. The building measures approximately 121 feet by 180 feet. Santana backed up his truck to the materials storage building to dump the load of fly ash at the normal dump

point. The ramp leading to the hopper is concrete and is approximately 81 feet long by 25 feet wide with a 10 degree grade.

Front-end Loader

The front-end loader involved in the accident is a Caterpillar 980 H articulated machine equipped with four Bridgestone 29.5R25 tires and a mid-axle height of 2 feet 10 inches. It has an operating weight of 67,610 pounds. The front-end loader is 31 feet 8 inches long, 11 feet 4 inches wide, and 12 feet 4 inches high. It has a turning radius of 51 feet 7 inches.

The distance from the back of the cab to the rear of the loader is approximately 10 feet. The investigators inspected brakes, steering, and transmission on the front-end loader and found no safety defects. The accident scene was recreated to establish the approximate lighting and view the front-end loader operator would have had at the time of the accident. Investigators determined that the view was not obstructed and that the lighting did not interfere with the operation of the machine.

Haul Truck

The haul truck involved in the accident is a 1994 Kenworth Tractor model # 7491. The tractor is attached to a 28 foot long Ravens aluminum dump trailer equipped with a manually operated tarp.

Weather

The weather on the day of the accident was sunny skies with a temperature of 79 degrees Fahrenheit. Weather was not considered to be a factor in the accident.

TRAINING AND EXPERIENCE

Ismael Santana (victim) had approximately 30 years 6 months of total commercial driving experience. He had approximately 14 years 7 months of commercial driving experience with New Line Transport and had delivered material to this mine site for 13 years. A representative of MSHA's Educational Field Services conducted an in-depth review of the mine operator's training records. The mine operator could not provide any records that Santana had been provided site-specific hazard awareness training.

Gary Moore, Front-end Loader Operator, worked at this plant for 13 years. He received task training for operating the Caterpillar 980 H Loader on January 27, 2011. Moore's training records were up-to-date and in compliance with MSHA requirements.

ROOT CAUSE ANALYSIS

The investigators conducted a root cause analysis of this accident and identified the following root causes:

Root Cause: Management failed to ensure the operator of the front-end loader maintained control of the loader at all times while the loader was in operation, specifically while haul trucks were unloading raw materials at the materials storage building. No safe operating procedures had been established to ensure communications between the incoming truck drivers and the front-end loader operators.

Corrective Action: Management established safe operating procedures for mobile equipment operators and incoming haul truck drivers bringing raw materials to the materials storage building. The procedures include the use of hand held radios for communication between the front-end loader operator and the haul truck drivers. Cameras and sensors will be installed on the front-end loaders. All mobile equipment operators and haul truck drivers were instructed in these safe operating procedures.

Root Cause: Management did not ensure that site-specific hazard awareness training was provided for contract truck drivers, including the victim, delivering raw materials to the plant.

Corrective Action: Management established safe operating procedures for mobile equipment operators and incoming haul truck drivers bringing raw materials to the materials storage building. All haul truck drivers were provided site-specific hazard awareness training which included these safe operating procedures.

CONCLUSION

The accident occurred because management failed to ensure that the operator of the front-end loader maintained control of the loader at all times, specifically while other equipment traveled in the same area. No safe operating procedures had been established to ensure communications between the incoming truck drivers and the front-end loader operators. Additionally, site-specific hazard awareness training had not been provided to Santana regarding the delivery and unloading of the fly ash material.

ENFORCEMENT ACTIONS

Issued to Cemex Construction Materials of Florida LLC

Order No. 8812796 -- issued on July 23, 2014, under the provisions of Section 103(j) of the Mine Act:

An accident occurred at this operation on July 23, 2014 at approximately 09:00 am. This order is being issued, under Section 103j of the Federal Mine Safety and Health Act of 1977, to assure the safety of all persons at this operation. This order is also being issued to prevent the destruction of any evidence which would assist in investigating the cause or causes of the accident. It prohibits all activity at the Materials Storage Building- Fly Ash Area, except to the extent necessary to rescue an individual or prevent or eliminate an imminent danger until MSHA has determined that if it is safe to resume normal mining operations at the materials storage area. This order applies to all persons on-site. This order was initially issued orally to Bill Butler, Safety Director at 09:07 am and has now been reduced to writing.

The order was subsequently modified to Section 103(k) of the Mine Act after an Authorized Representative arrived at the mine.

Citation No.8813428 -- issued under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.9101:

On July 23, 2014 a fatal accident occurred at this operation when a truck driver was struck by a front end loader and pinned between the

loader and the truck fuel tank. The front end loader operator failed to maintain control of the loader as he backed down the ramp near the Material Storage Building.

Citation No.8813429 -- issued under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 46.11(a):

On July 23, 2014 a fatal accident occurred at this operation when a truck driver was struck by a front end loader and pinned between the loader and the truck fuel tank. The victim had not been given site specific hazard awareness training for the delivery and unloading of the fly ash material.

Approved by: Sam Pierce
Samuel K. Pierce
Southeast District Manager

Date: 10/14/14

Appendix A

Persons Participating in the Investigation

Cemex Construction Materials of Florida LLC

| | |
|--------------------|--|
| Bill Butler | Health and Safety Manager |
| Fernando A. Chavez | Health and Safety Mgr., Victorville, CA. Plant |
| Gary Moore | Front-end Loader Operator |

Law Office of Jackson Kelly

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| Dana M. Svendsen | Attorney |
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Law Office of Banker, Lopez, and Gassler

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| Richard K. Bowers, Jr | Attorney |
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Hernando County Sherriff's Office

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| Brent Stentz | Detective Major Case Unit |
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Bayfront Health Brooksville Hospital

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| Linda Sanchez | Director, Health Information Mgmt. |
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New Line Transport, LLC dba Tri-State Carriers

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| Frank Byrne | Assistant Terminal Manager |
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Mine Safety and Health Administration

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| Walter DeLoach | Supervisory Mine Safety and Health Inspector |
| Michael S. Cohen | Mine Safety and Health Inspector |
| Norberto Ortiz | Mine Safety and Health Specialist (Training) |

Appendix B

Victim Data Sheet

| Accident Investigation Data - Victim Information | | | | | | | | | | U.S. Department of Labor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-------|---------------------|---|-------------------------------|---|---|---|--|---|--|-------|--|------|--|------------------------------------|--|-------|--|-------|--|------|--|----------|--|-------|--|-------|--|------|--|--|--|--|--|--|--|--|--|--|--|
| Event Number: 0917592 | | | | | | | | | | Mine Safety and Health Administration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Victim Information: 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Name of Injured/Ill Employee: <i>Ismael Santana</i> | | | 2. Sex: <i>M</i> | | 3. Victim's Age: <i>51</i> | | 4. Degree of Injury: <i>01 Fatal</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 07/23/2014 b. Time: 10:06</i> | | | | | | 6. Date and Time Started: <i>a. Date: 07/23/2014 b. Time: 8:45</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. Regular Job Title: <i>176 Truck Driver</i> | | | | 8. Work Activity when Injured: <i>092 Victim was walking next to his truck</i> | | | | 9. Was this work activity part of regular job? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. Experience | | Years | | Weeks | | Days | | b. Regular | | Years | | Weeks | | Days | | c. This | | Years | | Weeks | | Days | | d. Total | | Years | | Weeks | | Days | | | | | | | | | | | |
| Work Activity | | 13 | | 26 | | 0 | | Job Title | | 30 | | 24 | | 0 | | Mine: | | 13 | | 26 | | 0 | | Mining: | | 13 | | 26 | | 0 | | | | | | | | | | | |
| 11. What Directly Inflicted Injury or Illness? <i>110 Crushed between two vehicles</i> | | | | | | | | | | 12. Nature of Injury or Illness: <i>170 Crushing</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13. Training Deficiencies: Hazard: <input checked="" type="checkbox"/> New/Newly-Employed Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14. Company of Employment: (If different from production operator) <i>Tri-State Carrier</i> | | | | | | | | | | Independent Contractor ID: (if applicable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15. On-site Emergency Medical Treatment: Not Applicable: <input type="checkbox"/> First-Aid: <input type="checkbox"/> CPR: <input type="checkbox"/> EMT: <input checked="" type="checkbox"/> Medical Professional: <input type="checkbox"/> None: <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. Part 50 Document Control Number: (form 7000-1) | | | | | | | | | | 17. Union Affiliation of Victim: <i>9999</i> | | | | | | <i>None (No Union Affiliation)</i> | | | | | | | | | | | | | | | | | | | | | | | | | |