

**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 Fall of Person Accident
February 21, 2014**

**Personal Touch Inc.
Contractor ID No. F223
at
Cemex Inc.
Kosmos Cement Co.
Louisville, Jefferson County, Kentucky
Mine ID No. 15-04469**

Investigators

**Jeffrey L. Phillips
Supervisory Mine Safety and Health Inspector**

**Larry D. Melton
Mine Safety and Health Inspector**

**Thomas D. Barkand
Senior Electrical Engineer**

**Michael P. Snyder, PE
Mining Engineer**

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

**Originating Office
Mine Safety and Health Administration
Southeastern District
135 Gemini Circle, Suite 212
Birmingham, Alabama 35209
Samuel K. Pierce, District Manager**



OVERVIEW

Felipe Mata Vizcaya, Contract Laborer, age 37, was killed February 21, 2014, while attempting to access an elevator. Vizcaya went to the fourth floor of the old finish mill to get a bucket. When Vizcaya was leaving, he opened the hoistway door on the fourth floor landing, stepped into the elevator shaft, and fell 51 feet to the top of the elevator car located on the ground floor.

The accident occurred due to management's failure to ensure that procedures were established to designate a competent person to examine workplaces, including the elevator, once each shift for hazards that could adversely affect the safety of persons who used the elevator. Consequently, defective conditions related to the safe operation of the elevator were not corrected in a timely manner. The fourth floor hoistway landing door's worn condition caused the mechanical interlock to malfunction, allowing the door to open when the elevator car was not present.

GENERAL INFORMATION

Kosmos Cement Co., a surface cement facility, owned and operated by Cemex Inc, is located in Louisville, Jefferson County, Kentucky. The principal operating official is Karl Watson, Jr., President. Ricardo Quiroga, Plant Manager, is the person in charge of safety and health at the mine. The plant operates two 12-hour shifts per day, seven days per week. Total employment is 110 persons.

Material is brought in by barge, off loaded with excavators, and transported by belt conveyors to the plant. The material is pulverized, heated, and processed to produce cement. The finished product is stored in silos and transported to customers by rail, barge, and bulk trucks.

Personal Touch Inc., a temporary staffing agency located in Demopolis, Alabama, is contracted by Cemex Inc. to perform various tasks, including clean up, at the plant. The person in charge of health and safety is Jose Rene Rivas, Owner. Eight persons from Personal Touch Inc. worked two 12-hour shifts at the plant, five days per week Monday through Friday. The contractor had been working at this site for approximately three years.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this operation on May 22, 2013.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, February 21, 2014, Felipe Mata Vizcaya, (victim) reported for work at 7:00 a.m., his normal starting time. He arrived in the company van with three other co-workers. They all went to the break room, located under the #2 kiln, and met with the night shift crew as that crew ended their shift. At approximately 7:05 a.m., Vizcaya and his co-workers walked to the area where the ball sorter machine was located to start sorting grinding balls.

Vizcaya performed a pre-shift inspection on the forklift to be used in the ball sorting process. He then operated the controls of the sorter machine while positioned at the control station. Vizcaya was to adjust the speed of the feeder to control the amount of steel balls entering the sorter machine. At approximately 8:15 a.m., Favian Morin, Shift Supervisor for Personal Touch Inc., walked with Vizcaya and Fernando Gonzales, Laborer for Personal Touch Inc., to the 1141 new finish mill building.

Morin told them to remove the grinding balls from ten 55 gallon drums and place them in a feed chute to the 1141 ball mill. Morin left and went back to the ball sorter. A few minutes later Vizcaya walked back to the ball sorter to tell Morin he needed a bucket to aid in moving the steel balls. He stated this would speed the process rather than moving them all by hand. Morin told Vizcaya to get an empty bucket located on the fourth floor of the old finish mill.

At approximately 8:30 a.m., Vizcaya walked to the old finish mill and took the elevator to the fourth floor to get the bucket. Tim McMahan, Maintenance and Lube Mechanic, was on the fourth floor when Vizcaya reached the fourth floor landing. McMahan saw Vizcaya in the elevator and noticed Vizcaya was having difficulty opening the elevator door so McMahan helped him slide the door open. Vizcaya exited and McMahan entered the elevator and rode it to the first floor.

After about 15-20 minutes, Gonzales tried calling Vizcaya on the radio because he had not returned but there was no response. Gonzales called

Morin on the radio and told Morin he could not contact Vizcaya. Morin told Gonzales to go to the old finish mill and look for Vizcaya. Gonzales took the belt conveyor catwalk from the 1141 mill to the fourth floor of the old finish mill.

About the same time, Michael Story, contract employee for Independent Piping, was working on the first floor of the old finish mill installing a water drain line on the cooler. Story was in and out of the building several times that morning. He walked back into the building by the elevator shaft and heard a faint sound. Story walked back outside the building to investigate but could not determine where the sound came from. Story began working and after a few minutes, he heard the noise again.

Story walked to the elevator shaft, banged on the first floor hoistway door located on the inside of the building, and heard someone speaking from inside the shaft. Story walked out of the building to the outside first floor hoistway door, looked up through the elevator door entrance frame into the shaft, and saw a yellow vest on top of the elevator car. He notified a nearby Cemex Inc. employee that someone needed help in the elevator.

Meredith Dixon, Mechanic, ran into the shop to get help. Dan Horlick, Joseph Stewart, and Scott Watson, Mechanics, rushed to the old finish mill. They accessed the top of the elevator car through a hatch to assist Vizcaya. Eddie Felker, Control Room Operator, made a call to 911.

Emergency Medical Services (EMS) arrived at 9:31 a.m. and took control of the rescue operations. Vizcaya was found conscious and attempts were made inside the elevator to stabilize and remove him. However, he died at the scene at 10:36 a.m. and was removed through the 2nd floor landing at 1:55 p.m. The cause of death was attributed to multiple blunt traumatic injuries sustained in a fall from height.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident by a telephone call at 10:15 a.m. on February 21, 2014, from Jerry Jenkins, Union Representative, Boilermakers' Local D595, to Scott Johnson, Lexington Field Office Supervisor. At 10:17 a.m. the same day, Robert Munoz, Safety Manager

Cemex Inc., notified MSHA's National Call Center by a telephone call. The National Call Center notified Doniece Schlick, Assistant District Manager, and an investigation was 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 plant, conducted a physical inspection of the accident scene, interviewed employees, and reviewed documents and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine and contract management and employees, and miners' representatives.

DISCUSSION

Location

The accident occurred at the fourth floor landing of the old finish mill elevator located on the northwest side of the building adjacent to the maintenance shop and main office. The elevator is used to transport equipment and personnel to all four floors of the building on a daily basis.

Weather

The weather conditions on the day of the accident were sunny with a temperature of 45 degrees Fahrenheit. Weather was not considered to be a factor in the accident.

Physical Factors

- 1) GENERAL INFORMATION: The plant has six elevators of various types which provide vertical transport for workers and materials in strategic locations. Cemex Inc. had contracted the services of Oracle Elevator Company for repair and maintenance of the plant elevators. At the time of the accident, Oracle was onsite conducting Category 5 testing at another one of the plant's elevators in accordance with the ASME A17.1 Safety Code for Elevators and Escalators. Following the fatal

accident at the old finish mill, a 103 (k) order was issued on all of the elevators at the plant. Before the elevators could be released under the order, a complete inspection was conducted on each one.

- 2) OLD FINISH MILL ELEVATOR: The elevator located in the old finish mill was manufactured by the Ehrsham Company, circa 1960. The investigators could not determine when the elevator was installed. No cross head data plate was observed on top of the car. The Office of Elevator Inspection for the state of Kentucky identified the elevator with certificate No. 9300. The elevator was a Single Wrap Traction machine with 1:1 roping and provided service for four floors. The elevator car was entered from the building exterior at the ground level (1st floor) and exited to the building interior for floors 2, 3, and 4. The first floor interior landing door was secured to prevent it from opening. The elevator machine and drive had been updated (reportedly in late 2010). The updated elevator machine, manufactured by Hollister Whitney, was a Model 440H with contract No. A228933. It had a capacity of 2000 lbs. and operated at 200 feet per minute. The machine was driven by a Reuland motor SN 10-1181C-2 with a gear ratio of 77:2. The sheave wheel had a minimum groove diameter of 23 5/8 inches. Four ½ inch diameter 8 x 19 Seale traction steel wire ropes were suitably connected to the top of the car and the counterweight. The speed governor was manufactured by Payne Elevator Co. It utilized a 3/8 inch diameter 8 x 19 Traction Steel wire rope. The elevator speed governor had a labeled trip speed of 210 fpm for the switch and safeties and a labeled pull through force of 200 lbs.
- 3) OLD FINISH MILL ELEVATOR EXAMINATION: From February 24, 2014, through February 27, 2014, a complete examination of the old finish mill elevator system was conducted. Cemex Inc. contracted Murphy Elevator Company to perform the elevator testing. MSHA investigators were also involved in the elevator inspections and testing. The elevator safety catches were tested with rated elevator load at rated speed. The governor tripping speed, overspeed switch, pull-through force, and pull-out force were tested. The elevator machine brake was tested with 125% of the rated load. An examination was conducted inside the elevator car with the car located at the ground level (floor 1). The access panel to the top of the car had been removed after the accident. The lighting fixture inside the car had been previously damaged, as noted on the State of Kentucky's elevator inspection form

dated October 30, 2012. It needed to be replaced with a permanent ceiling light fixture, but was repaired using a portion of a guarded trouble light that provided illumination inside the car. The phone inside the car had a dial tone and was tested by calling the plant's control center. The phone functioned normally. The alarm inside the car was tested and functioned normally. Most of the floor indicator lights, installed at the front and rear doors of the inside the elevator car, needed to be replaced.

The top of the car was inspected at the 2nd floor landing door. Electrical junction boxes on top of the car were damaged and missing cover plates. Several electrical conduit lines entering the junction boxes on top of the car had separated. An eye-bolt connecting a spring to the safety actuation bar was bent and needed repair. An unguarded car top light fixture was also damaged. Some of the damage may have resulted from the accident and subsequent rescue attempt by EMS personnel.

Each floor landing was examined with the car in operation. When the car moved, the in-use lights located above the call button for each floor should illuminate. However, the 2nd floor in-use light was the only functional one. Attempts were made to open all of the landing doors while the car was at another floor. The 4th floor landing door was the only door that could be opened from the landing with the car not present. The force to open the door at this location was measured and ranged from 30 to 40 lbs. The viewing panel glass for the 3rd floor landing door was missing and had been replaced with grating secured on the interior side of the door. This allowed dust from the plant environment to enter the hoistway. The viewing panel on the first floor door also had a damaged panel glass.

The hoistway was examined from the top of the elevator car in its entirety. The hoist ropes appeared dry; however, rope diameter measurements taken with a "Go/ No-Go" gauge indicated they were adequate. The landing doors for each of the floors were also examined from inside the hoistway.

- 4) ORACLE TESTING AND MAINTENANCE OF OLD FINISH MILL ELEVATOR: Approximately one week prior to the accident, on February 15, 2014, Oracle Elevator Company personnel arrived at the plant and repaired the malfunctioning interlocks on the 1st and 4th floors of the old finish mill elevator and then returned the car to service. Based

on statements of persons interviewed on February 18, 2014, Oracle Elevator Company personnel conducted a Category 5 test of the old finish mill elevator. They attached the appropriate tags to the speed governor in the motor control room and near the governor rope attachment on top of the elevator car indicating that it met the requirements of the elevator code.

SUMMARY:

- The 4th floor landing door entrance hardware assembly was severely worn.
- The 4th floor landing door interlock did not function properly.
- The 4th floor landing door could be opened with minimal effort when the elevator car was away from the landing.
- The 4th floor in service light did not function

Training and Experience

Felipe Mata Vizcaya (victim) had 28 weeks experience and worked at this operation for 20 weeks. A representative of MSHA's Educational Field Services staff conducted an in-depth review of the of the contractor's training records. Vizcaya's training records, provided by the mine operator and the contractor, were examined and found to be in compliance with MSHA training requirements.

ROOT CAUSE ANALYSIS

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

Root Cause: Management did not ensure the fourth floor hoistway landing door's worn condition was corrected, which caused the mechanical interlock to malfunction allowing the door to open when the elevator car was not present.

Corrective Action: The fourth floor elevator has not been repaired and is still under a 103 (k) Order. The mine operator ceased use of this elevator and will determine if the elevator will be repaired. Miners are currently using stairs.

Root Cause: Management did not ensure that daily workplace examinations were conducted on the elevators and that persons were trained to conduct these examinations to determine that the elevators' safety features were functional.

Corrective Action: Persons were trained to conduct daily workplace examinations to ensure that safety features on the elevators were functional. Signs were posted at each hoistway opening warning that the safety features must be functional. Additional site specific training was provided to the contractor service company personnel to further ensure that safety features are maintained for the safe operation of the elevators.

CONCLUSION

The accident occurred due to management's failure to ensure that procedures were established to designate a competent person to examine workplaces, including the elevator, once each shift for hazards that could adversely affect the safety of persons who used the elevator. Consequently, defective conditions related to the safe operation of the elevator were not corrected in a timely manner. The fourth floor hoistway landing door's worn condition caused the mechanical interlock to malfunction, allowing the door to open when the elevator car was not present.

ENFORCEMENT ACTIONS

Issued to Cemex Inc.

Order No. 8728923 -- issued on November 18, 2013, under the provisions of Section 103(j) of the Mine Act:

An accident occurred at this operation on 02/21/2014 at approximately 0915 am. As rescue and recovery work is necessary, 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 Finish

Mill, except to the extent necessary to rescue an individual or prevent or eliminate an imminent danger until MSHA has determined that it is safe to resume normal mining operations in this area. This order applies to all persons engaged in the rescue and recovery operation and any other person on-site. This order was initially issued orally to the mine operator at 1030 hrs hours and has now been reduced to writing.

The old finish mill elevator remains under this 103 (k) Order.

Citation No. 6091471 -- issued under the provisions of Section 104(d)(1) of the Mine Act for a violation of 30 CFR 56.14100 (b):

On February 21, 2014, a fatal accident occurred at this operation when a contract laborer attempted to access the old finish mill elevator. The victim opened the hoistway landing door on the fourth floor, stepped into the elevator shaft, and fell 51 feet to the top of the car located on the ground floor. The fourth floor hoistway landing door's worn condition caused the mechanical interlock not to function properly and allowed the door to open when the elevator car was not there. The mine operator was made aware on October 15, 2011, that the hoistway landing doors were defective and needed to be replaced to prevent them from opening when the elevator car was not at that floor. However, management allowed miners to use the old finish mill elevator for 26 months after being made aware of this. Mine management acted with aggravated conduct constituting more than ordinary negligence in knowing of the safety defects in the hoistway doors and disregarding the fact that miners were being exposed to fatal fall hazards. This violation is an unwarrantable failure to comply with a mandatory standard.

Order No. 6091472 -- issued under the provisions of Section 104(d)(1) of the Mine Act for a violation of 30 CFR 56.18002 (a):

On February 21, 2014, a fatal accident occurred at this operation when a contract laborer attempted to access the old finish mill elevator. The victim opened the hoistway door on the fourth floor, stepped into the elevator shaft, and fell 51 feet to the top of the car located on the ground floor. The mine operator failed to designate a

competent person to examine workplaces that included the elevators, for hazards noted each shift at this operation. Mine management acted with aggravated conduct constituting more than ordinary negligence by not designating a competent person to conduct a workplace exam that includes identifying and correcting hazards encountered when working near or when using the elevators at this location. This violation is an unwarrantable failure to comply with a mandatory standard.

Approved: Samuel K. Pierce Date 6/20/14
Samuel K. Pierce
Southeast District Manager

APPENDIX A

Persons Participating in the Investigation

Cemex Inc.

Robert Munoz	Safety Manager
Michael Carlson	Vice-President of Health and Safety
Darrell Wiley	Electrical Supervisor
Jerry Genkins	Union Representative
Gary Poole	Union Representative
Frankie Clayton	Union Representative

Murphy Elevator Company

Steve Childs	Elevator Mechanic
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Personal Touch Inc.

Jose Rene Rivas	Owner
Favian Morin	Supervisor

Jackson Kelly Attorneys At Law PLLC

Michael Cimino	Attorney
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Louisville Metro Police Department

Scott Beatty	Detective Homicide Unit
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Department of Housing, Buildings and Construction

Ron Voils	Deputy State Fire Marshal/Elevator Inspector
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Local Fire and EMS

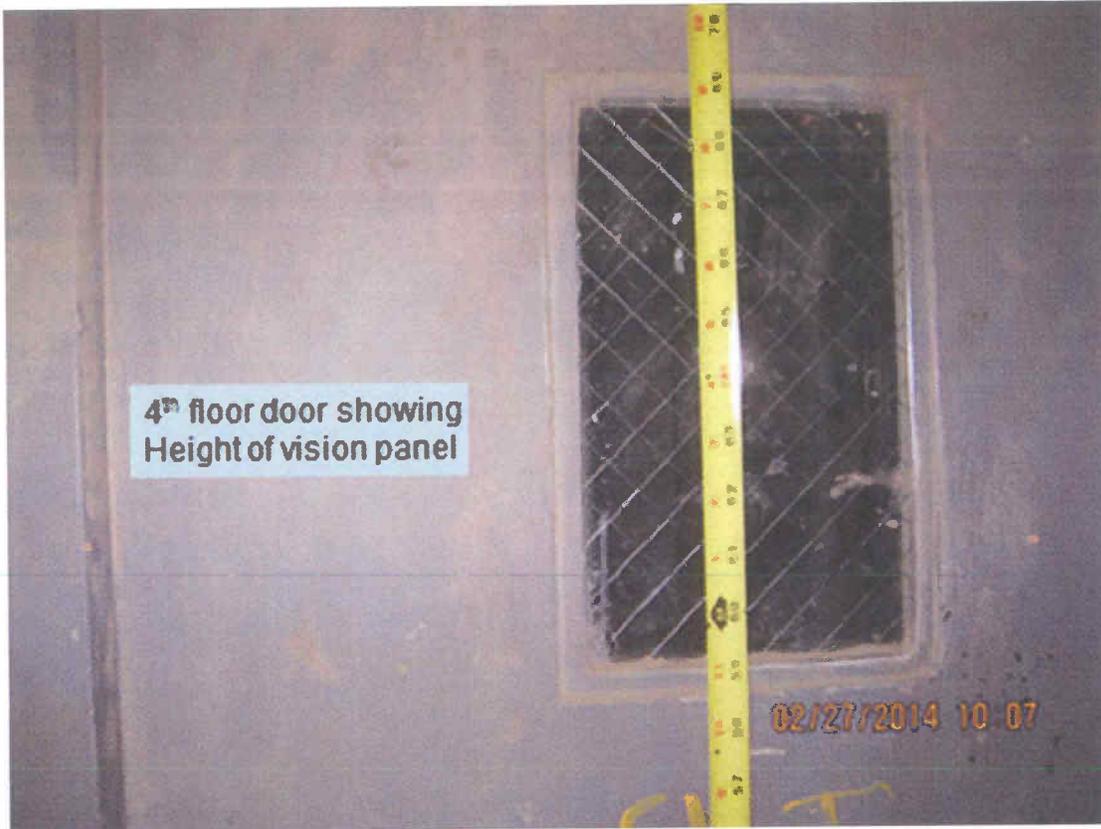
Louisville Metro EMS
Pleasure Ridge Fire Department
Okalona Fire Department
Harrods Creek Fire Department

Mine Safety and Health Administration

Jeffrey L Phillips	Supervisory Mine Safety and Health Inspector
Larry D. Melton	Mine Safety and Health Inspector
Thomas D. Barkand	Senior Electrical Engineer
Michael P. Snyder	Mining Engineer
Norberto Ortiz	Mine Safety and Health Specialist (Training)

APPENDIX B

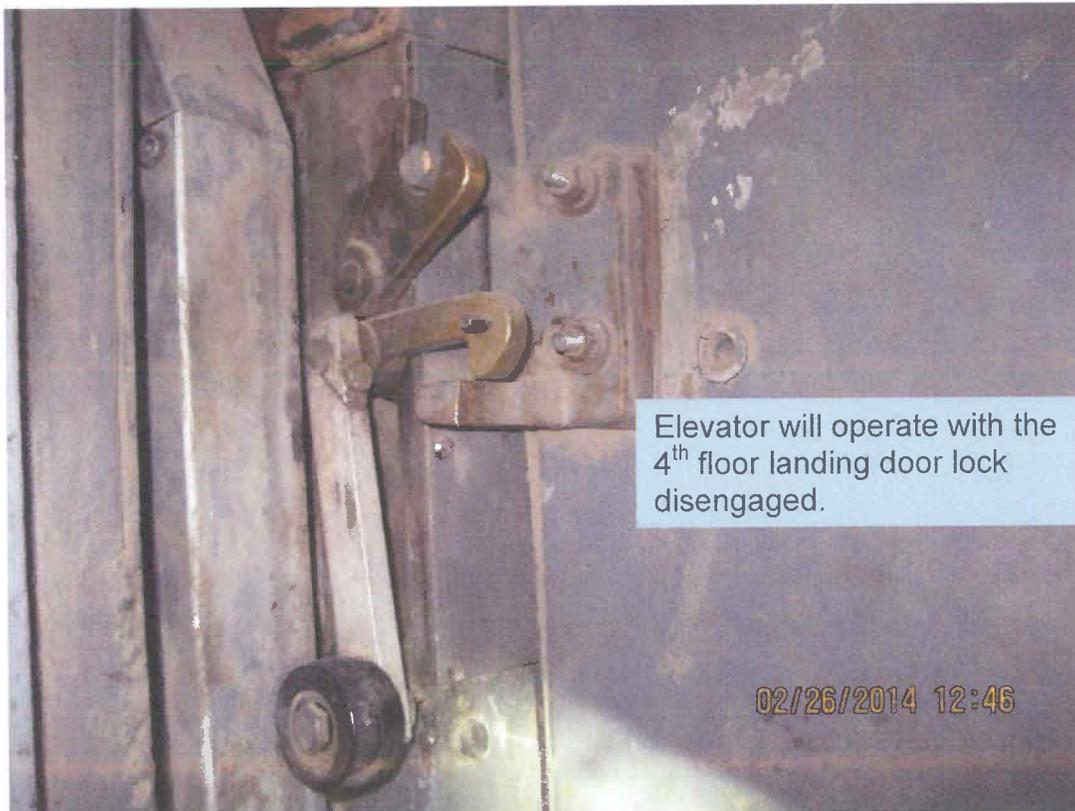
Additional Photos





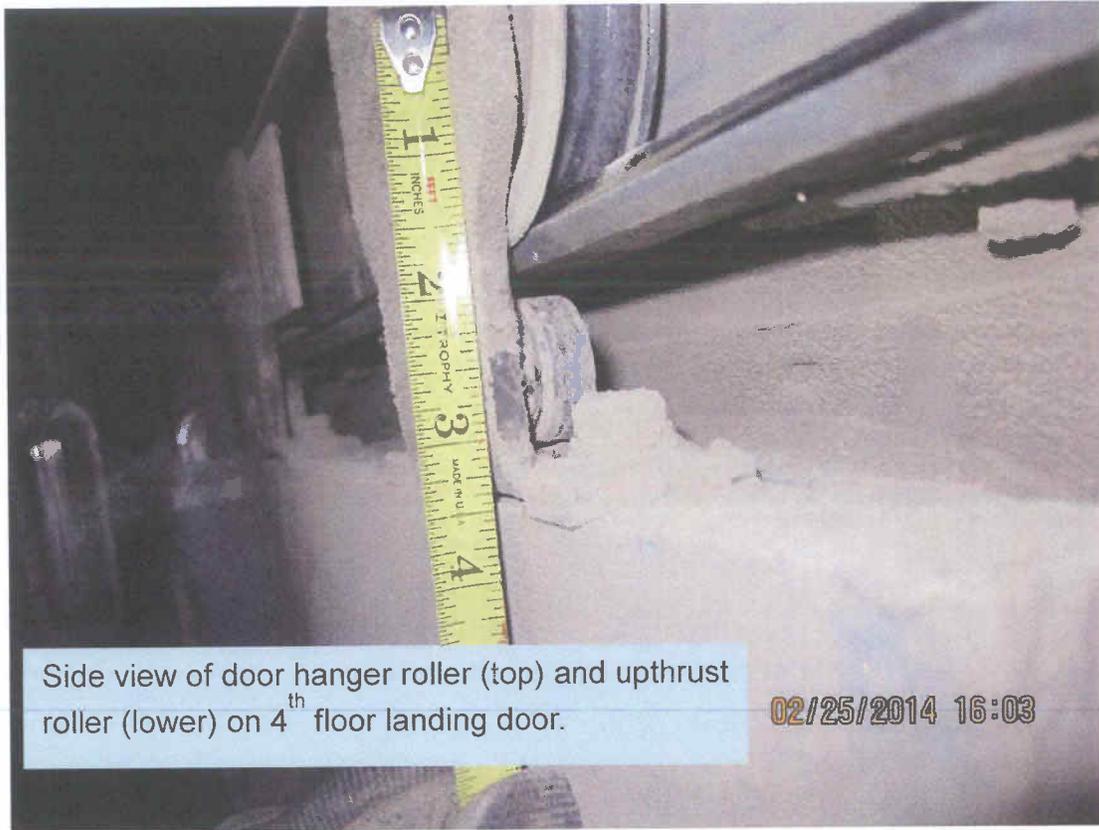
Locked 4th Floor landing door can be opened with a pull force of 30-40 Lbs.

02/26/2014 11:51



Elevator will operate with the 4th floor landing door lock disengaged.

02/26/2014 12:46



Side view of door hanger roller (top) and upthrust roller (lower) on 4th floor landing door.

02/25/2014 16:03

APPENDIX C

Victim Information

Accident Investigation Data - Victim Information

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



Event Number: 6 6 4 9 2 4 7

Victim Information: 1

1. Name of Injured/ill Employee: <i>Felipe M. Vizcaya</i>		2. Sex <i>M</i>	3. Victim's Age <i>37</i>	4. Degree of Injury: <i>01 Fatal</i>			
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 02/21/2014 b. Time: 10:36</i>				8. Date and Time Started: <i>a. Date: 02/21/2014 b. Time: 1:21</i>			
7. Regular Job Title: <i>116 Laborer</i>		8. Work Activity when Injured: <i>011 Clean Up</i>			9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
10. Experience		b. Regular		c. This		d. Total	
a. This	Years	Weeks	Days	Years	Weeks	Days	Years
Work Activity:	<i>0</i>	<i>28</i>	<i>0</i>	Job Title:	<i>0</i>	<i>28</i>	<i>0</i>
11. What Directly Inflicted Injury or Illness? <i>063 elevator</i>				12. Nature of Injury or Illness: <i>390 blunt force</i>			
13. Training Deficiencies:		New/Newly-Employed		Experienced Miner:		Annual: Task:	
Hazard:							
14. Company of Employment: (if different from production operator) <i>Personal Touch Inc</i>				Independent Contractor ID: (if applicable) <i>F223</i>			
15. On-site Emergency Medical Treatment:							
Not Applicable:		First-Aid:		CPR:		EMT: <input checked="" type="checkbox"/>	
						Medical Professional: None:	
16. Part 50 Document Control Number: (form 7000-1) <i>220140790009</i>				17. Union Affiliation of Victim: <i>9999</i> None (No Union Affiliation)			