

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
October 25, 2007

Oro Grande Constructors-Amec-Zachry Joint Venture
Contractor I.D. No. M255

at

Oro Grande Quarry
Riverside Cement Company
Oro Grande, San Bernardino County, California
Mine I.D. No. 04-00011

Investigators

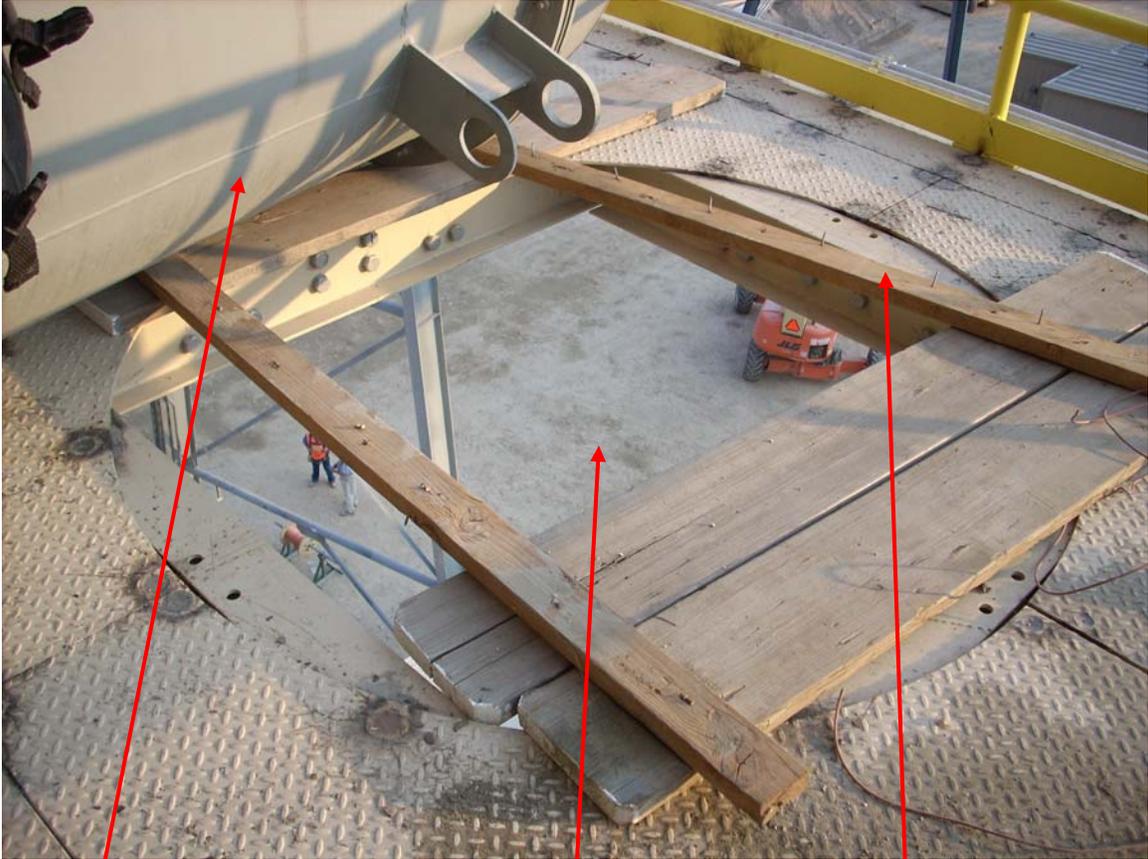
Larry Larson
Mine Safety and Health Inspector

William Enderby
Mine Safety and Health Inspector

Isabel Williams
Mine Safety and Health Specialist

Originating Office
Mine Safety and Health Administration
Western District
2060 Peabody Road, Suite 610
Vacaville, California 95687
Arthur L. Ellis, District Manager

Photo of accident scene



Air receiver tank

Opening in deck

Overturned 2-inch by 4-inch platform board

OVERVIEW

On October 25, 2007, Manuel Isidro Hernandez-Armendariz, a contractor iron worker helper, age 19, was fatally injured at a coal mill tower. He stepped on wooden planking covering an opening on the coal mill tower deck. The planking gave way and he fell through the hole 57 feet to the ground below. The victim and two co-workers were attempting to line up an air receiver tank for a dust collector on the fifth level of the tower.

The accident occurred because the contractor's policies and procedures were inadequate and failed to identify possible hazards to persons working at elevated locations where there was a danger of falling. The wooden planking covering the opening was not substantially constructed and maintained in good condition. No warning signs or barricades were posted where hazards were not immediately obvious to employees. The victim was wearing fall protection but the lanyards were not secured.

GENERAL INFORMATION

Oro Grande Quarry, a surface quarry and cement plant owned and operated by Riverside Cement Company (Riverside) was located at 19409 National Trails Highway, Oro Grande, San Bernardino County, California. The principal operating official was Gordon Johnson, plant manager. The mine normally operated three 8-hour shifts per day, seven days a week. Total employment was 228 persons.

Limestone was drilled and blasted from multiple benches. The broken rock was transported by haul trucks to a primary crusher. The material was conveyed to the plant where it was mixed with other materials to produce cement. Finished products were sold in bulk and bag for use in the construction industry.

Oro Grande Constructors - Amec-Zachry Joint Venture (OGC - Zachry), located in Oro Grande, San Bernardino County, California, was a construction contractor. The principal operating official was Ben Sims, project manager. Riverside contracted with OGC - Zachry to construct a new cement plant at the mine and the project started on August 29, 2005. OGC - Zachry employed 600 persons who normally worked two 10-hour shifts per day seven days a week at this site.

The last regular inspection at this operation was completed on August 9, 2007.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, Manuel Isidro Hernandez-Armendariz (victim) reported for work at 6:30 a.m., his normal starting time. Hernandez-Armendariz, Jose Hernandez, iron worker, and Hervey Tavarez, sheet metal helper, were erecting steel when the crane they were using developed operating problems, so Hernandez-Armendariz and Tavarez stopped for lunch.

Obednon Tanez, general foreman, instructed Darin Begay, boilermaker foreman, to meet Jose Hernandez on the fifth level of the coal tower platform. Begay was to explain where to place the air receiver tank because it had to be placed in a specific position relative to the baghouse and air duct piping. The air duct piping was to pass through the opening in the deck.

Hernandez-Amendariz and Tavarez went to the fifth level and met Jose Hernandez and they prepared to set the air receiver tank. About 1:15p.m., Hernandez -Amendariz positioned the air receiver tank and stepped on wooden planking that had been placed over an opening in the deck to allow the duct

work to pass through. The planking gave way and he fell approximately 57 feet to the ground. Hernandez-Armendariz was wearing a harness with two lanyards; however, the lanyards were not secured.

Several persons including Steve Rogers, mine safety and health inspector, who was conducting an inspection at the mine, were in the immediate area of the accident at ground level and assisted Hernandez-Armendariz. Emergency medical personnel arrived and transported the victim to a local hospital where he was pronounced dead at 3:56 p.m. by the attending physician. Death was attributed to blunt force trauma.

INVESTIGATION OF THE ACCIDENT

Steve Rogers notified Art Ellis, district manager, at 1:37 p.m. and an investigation was started the same day. An order was issued under the provisions of 103(k) of the Mine Act to ensure the safety of the miners.

MSHA's accident investigation team traveled to the mine, made a physical inspection at the accident site, interviewed employees, and reviewed conditions and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine and contractor management and employees, and the California Occupational Safety and Health Administration (CAL OSHA).

DISCUSSION

Location of the Accident

The accident occurred on a deck on the fifth level of the coal mill tower. The deck was 57 feet above ground level and measured 12 feet by 11 feet 6 inches. An opening 4 feet 10 inches by 5 feet 9 inches was left in the deck to allow for the installation of the duct work.

A wooden platform, consisting of seven 2-inch by 10-inch by 6-foot wooden planks laid adjacent to one another, had been placed over the hole. Two 2-inch by 4-inch by 6-foot boards were placed above and perpendicular to the planks. The planks were connected to the boards with 3-inch nails. Wire was used to attach the two boards to the deck to keep the wooden platform from moving.

After the accident, investigators found that only three planks were across the opening on the deck. The planks came loose when some of the nails used in construction failed to hold the planks and boards together as the victim stepped on the platform. One of the boards was still nailed to the planks. The other board

was lying upside down with the nails sticking up across the three remaining planks.

Fall Protection

Two lanyards were required to comply with the 100% tie-off policy in effect at the construction area. Hernandez-Armendariz was wearing a harness style safety belt with two D-rings for the two lanyards but the lanyards had not been attached to any tie off points.

Weather Conditions

Weather conditions were clear and calm with a temperature of about 75 degrees Fahrenheit. Weather was not considered to be a factor in the accident.

Lighting

The deck was completely open to the outside. Lighting was not considered to be a factor in the accident.

Training and Experience

Manuel Isidro Hernandez-Armendariz had 20 weeks of experience all with OGC - Zarchy at this site. He had received training, provided in Spanish, in accordance with 30 CFR, Part 46.

ROOT CAUSE ANALYSIS

A root cause analysis was performed and the following causal factors were identified.

Causal Factor: Contractor management policies and procedures were inadequate and failed to ensure that persons could safely work on the deck of the fifth level of the coal mill tower. The wooden platform covering the opening was not substantially constructed and maintained in good condition.

Corrective Actions: Contractor management should establish policies and procedures to ensure that persons are trained to substantially construct and maintain platforms in good condition. Prior to beginning work, potential risks should be discussed and procedures established to safely complete the task.

Causal Factor: Contractor management policies and work procedures failed to ensure that fall protection was properly used by persons where there was a danger of falling.

Corrective Action: Contractor management should establish policies and procedures that ensure fall protection is used continuously by all persons where there is a danger of falling. Management should monitor employees to ensure the policies and procedures are followed.

Causal Factor: Contractor management policies and work procedures failed to ensure that persons were aware of safety hazards not immediately obvious. No barricades or warning signs were posted at the approaches to the opening on the deck.

Corrective Action: Contractor management should establish policies and procedures to ensure that barricades or warning signs were posted to make persons aware of safety hazards not immediately obvious.

CONCLUSION

The accident occurred because the contractor's policies and procedures were inadequate and failed to identify possible hazards to persons working at elevated locations where there was a danger of falling. The wooden planking covering the opening was not substantially constructed and maintained in good condition. No warning signs or barricades were posted where hazards were not immediately obvious to employees. The victim was wearing fall protection but the lanyards were not secured.

ENFORCEMENT ACTIONS

Riverside Cement Company

Order No. 6431058 was issued on October 25, 2007, to Riverside Cement Company under the provisions of Section 103(k) of the Mine Act:

A fatal accident occurred at this operation on October 25, 2007, when a miner was working on the coal mill tower. This order is issued to assure the safety of all persons at this operation. It prohibits all activity at the coal mill tower from ground level through the fifth floor, and the south compressor building until MSHA has determined that it is safe to resume normal mining operations in that 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 October 26, 2007. The company has written and followed a plan to secure the opening in the elevated deck which makes it safe for the miners to resume normal mining operations in the area.

Oro Grande Constructors - Amec-Zachry Joint Venture

Citation No. 6439706 was issued on February 5, 2008, under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.15005:

A fatal accident occurred at this mine on October 25, 2007, when a contract employee fell through a loose wooden platform placed over a 58-inch by 69-inch opening in an elevated deck. He fell 57 feet to the ground below. The victim and two co-workers were on the fifth level of the coal mill tower attempting to line up an air receiver tank for the dust collector. The victim and his co-workers were wearing fall protection equipment but their lanyards were not connected to tie-off points.

This citation was terminated on February 5, 2008. Management trained all persons regarding the wearing and use of fall protection. More signs, in English and Spanish, were placed emphasizing the use of fall protection on the deck.

Citation No. 6439707 was issued on February 5, 2008, under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.11027:

A fatal accident occurred at this mine on October 25, 2007, when a contract employee fell through a loose wooden platform placed over a 58 inch by 69-inch opening in an elevated deck. The platform was not substantially constructed and maintained in good condition. The platform was constructed of 2-inch by 10-inch by 72-inch planks nailed to two 2-inch by 4-inch boards placed perpendicular to the planking. The two 2-inch by 4-inch boards were placed perpendicular to the planking. When the victim stepped on the platform, the nails pulled free of the planking and he fell 57 feet to the ground below.

This citation was terminated on February 5, 2008. A substantially constructed platform was provided to cover the opening. A square barricade was also placed around the area of the covered opening.

Citation No. 6439708 was issued on February 5, 2008, under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.20011:

A fatal accident occurred at this mine on October 25, 2007, when a contract employee fell through a loose wooden platform placed over a 58 inch by 69-inch opening in an elevated deck. The deck was 57 feet above ground level. There were no visible warning signs or barricades provided to warn persons of the hazard.

This citation was terminated on February 5, 2008. Barricades were erected and signs in English and Spanish were posted.

Approved By:

Arthur L. Ellis
District Manager

Date

Appendices

Appendix A Persons Participating in the Investigation

Appendix B Victim Information

APPENDIX A

Persons Participating in the Investigation

Riverside Cement Company

Diane Fionda safety coordinator-western region
Larry Ratliff safety manager-cement
Ronnie Waxler maintenance manager

Oro Grande Constructors -Amec-Zachry Joint Venture

Ben Sims operations manager
Earl Chapman safety director
Richard Gibson area safety manager
Jesse Rodrigues safety manager
Jerry Roepke site safety manager
Kenneth Thornton structural steel superintendent
Willie Powe structural steel superintendent
Adam Spiewak council for OGC-Zachry
Timothy Olson council for OGC-Zachry

Cal Osha Mining & Tunneling

James Wittry associate engineer
Lacy Pittman associate safety engineer

Mine Safety and Health Administration

Larry Larson mine safety and health inspector
William Enderby mine safety and health inspector
Isabel Williams mine safety and health specialist

Appendix B

Accident Investigation Data - Victim Information

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



Event Number: **1 1 3 3 4 7 3**

Victim Information: 1					
1. Name of Injured/Ill Employee: <i>Manuel I. Hernandez-Armendal</i>		2. Sex: <i>M</i>	3. Victim's Age: <i>19</i>	4. Last Four Digits of SSN: <i>0000</i>	5. Degree of Injury: <i>01 Fatal</i>
6. Date(MM/DD/YY) and Time(24 Hr.) Of Death: a. Date: <i>10/25/2007</i> b. Time: <i>15:56</i>			7. Date and Time Started: a. Date: <i>10/25/2007</i> b. Time: <i>6:30</i>		
8. Regular Job Title: <i>110 iron worker helper</i>		9. Work Activity when Injured: <i>013 moving air tank on coal tower</i>		10. Was this work activity part of regular job? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
11. Experience a. This Work Activity: <i>0</i> Years: <i>20</i> Weeks: <i>0</i> Days: <i>0</i>		b. Regular Job Title: <i>0</i> Years: <i>20</i> Weeks: <i>0</i> Days: <i>0</i>		c. This Mine: <i>0</i> Years: <i>20</i> Weeks: <i>0</i> Days: <i>0</i>	
12. What Directly Inflicted Injury or Illness? <i>016 loose wooden platform covering opening.</i>		13. Nature of Injury or Illness: <i>370 multiple blunt trauma</i>			
14. Training Deficiencies: Hazard: New/Newly-Employed Experienced Miner: Annual: Task:					
15. Company of Employment: (If different from production operator) <i>Or Grande Constructors- Amec Zachry Joint Ventu</i>				Independent Contractor ID: (if applicable) <i>M255</i>	
16. On-site Emergency Medical Treatment: Not Applicable: First-Aid: <input checked="" type="checkbox"/> CPR: <input checked="" type="checkbox"/> EMT: <input checked="" type="checkbox"/> Medical Professional: <input checked="" type="checkbox"/> None: <input type="checkbox"/>					
17. Part 50 Document Control Number: (form 7000-1)			18. Union Affiliation of Victim: <i>9999</i> None (No Union Affiliation)		

Victim Information:					
1. Name of Injured/Ill Employee:		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 <input type="checkbox"/> No <input type="checkbox"/>	
11. Experience: a. This Work Activity:		b. Regular Job Title:		c. This Mine:	
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:					
1. Name of Injured/Ill Employee:		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 <input type="checkbox"/> No <input type="checkbox"/>	
11. Experience: a. This Work Activity:		b. Regular Job Title:		c. This Mine:	
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:		