

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine
Fatal Fall of Roof Accident
June 23, 2009

at

Bailey Mine
Consol Pennsylvania Coal Company
Wind Ridge, Greene County, Pennsylvania
I.D. No. 36-07230

Accident Investigators

Jeremy Williams
Coal Mine Safety and Health Inspector

Ronald Tolliver
Coal Mine Safety and Health Inspector

Carl Kubincanek
Coal Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
District 2

Paladin Professional Center
631 Excel Drive, Suite 100
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William Ponceroff, District Manager

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OVERVIEW

On June 23, 2009, at approximately 11:00 p.m., a roof fall accident occurred on the 4 West Section (MMU 066-0). The mine utilizes a mining system where the mine entries are developed using a full face continuous mining machine equipped with integral roof bolters mounted to the continuous mining machine. As the continuous mining machine advances, a roof bolt is installed from each bolting station in conjunction with a metal roof strap. Two roof bolts are installed, each approximately 4 feet from each rib with 8 feet between the bolts. When mining in the entry is completed, and the continuous mining machine is moved to another working place, another roof bolting machine installs a centerbolt in the roof strap. The mounted left side roof bolting machine operator (left side bolter) was in the process of setting a roof jack on the left inby corner of the No. 60 crosscut between the No. 2 and No. 1 entries when he was struck by a piece of rock that fell from the mine roof. Roof jacks are commonly used to support the corners when the areas are not bolted from the continuous mining machine. The cycle of mining at the time of the accident prevented the corner from being bolted from the continuous mining machine due to the mining machine cutting the corner from the No 2 entry. The rock was comprised of shale and a thin band of roof coal. It was triangular in shape and measured approximately 4 feet by 3.1 feet by 3.5 feet. The thickness of the rock ranged from 9 inches to 11.5 inches. The right side mounted roof bolting machine operator heard a crack and looked across the continuous mining machine, where he saw a piece of rock fall from the mine roof. He lost sight of the victim. The victim and the roof jack were both found lying beneath the rock. The rock was removed and the jack was installed to support the roof in the immediate area. The victim was unresponsive and no vital signs were detected. First Aid/Cardio Pulmonary Resuscitation (CPR) was administered. The victim was pronounced dead at the mine at 12:17 a.m. on June 24, 2009 by a Doctor located at the Greene County Memorial Hospital, in consultation with onsite Emergency Medical Service personnel. The victim was transported to Greene County Memorial Hospital in Waynesburg, Pennsylvania.

GENERAL INFORMATION

Consol Pennsylvania Coal Company's Bailey Mine, I.D. No. 36-07230, is an underground coal mine located near Wind Ridge, Greene County, Pennsylvania. Consol Energy Inc., located in Pittsburgh, Pennsylvania, is the parent company of Consol Pennsylvania Coal Company.

The principal officers at the mine at the time of the accident were:

Eric Schubel.....General Superintendent
Larry Cassidy.....Mine Foreman
Michael Tennant.....Safety Supervisor

The mine has 2 slope and 16 shaft openings into the Pittsburgh Seam. The seam averages 96 inches in height and entries and crosscuts average 16 feet in width. Laboratory analysis of return air samples shows a methane liberation rate of 10.3 million cubic feet per day through 6 main mine fans and 7 bleeder fans. The development unit face areas are ventilated using exhaust ventilation with auxiliary fans.

The mine employs 814 miners. A total of 768 underground and 46 surface miners work on three production shifts per day, seven days per week. No shifts are designated as maintenance shifts. The mine produces an average of 44,000 tons of raw material daily from eight continuous mining machine units and two longwall units. Coal is transported from the faces by shuttle cars or battery powered ram cars and longwall face conveyors. The coal is then transported by a belt conveyor system to an underground bunker surge storage area and is then transported to the surface by a slope conveyor belt. A track haulage system is used to transport both men and materials.

The mine is developed for support of longwall mining through the development of mains, sub-mains, and longwall development panels. These development sections are advanced with continuous mining machines equipped with mounted roof bolting machines. The 4 West Section is a four entry, sub-mains development section, located off of the 4 South Mains.

MSHA completed the last regular health and safety inspection of the mine on March 31, 2009; however, a regular safety and health inspection was commenced on April 1, 2009, and was ongoing at the time of the accident. The incidence rate for the mine in 2008 was 2.60 compared to a National Incidence Rate of 4.36.

DESCRIPTION OF THE ACCIDENT

On Tuesday, June 23, 2009, at approximately 4:00 p.m., the crew of the afternoon shift attended a safety meeting in the conference room at the Crabapple Portal. The safety meeting was conducted by James Gandy, Assistant Superintendent, Alan Hinderliter, Acting Shift Foreman, and James Manuel Jr., Manager of Safety, Pennsylvania Operations.

At approximately 4:20 p.m., the crew entered the mine via the Crabapple elevator shaft. The crew traveled on a diesel powered mantrip approximately 3.2 miles to the 4 West Section. They arrived in the section at approximately 4:45 p.m. Upon arrival, Ronald Stull, Section Foreman, held an additional safety meeting. After the completion of the safety meeting, the crew proceeded to the continuous mining machine located in the No. 2 entry (track entry). The No. 1 entry (belt entry) was mined across to the No. 3 entry (intake entry) at 60 crosscut. There was approximately 27 feet left to mine in the No. 2 entry before cutting into the crosscut. The crew cut a hole into the crosscut and went to lunch at approximately 8:00 p.m.

The rest of the No. 2 entry was mined through into the crosscut and the area was bolted through the intersection. The continuous mining machine was then backed up to cut the right outby corner in the No. 2 entry at the No. 60 crosscut. The corner was cut and bolted with the continuous mining machine. The continuous mining machine was then returned back to the No. 2 entry and repositioned to cut the straight of No. 2 entry, inby the No. 60 crosscut. The No. 2 entry was developed approximately 18 feet inby the rib line of the No. 60 crosscut. Three roof channel straps were installed inby the rib line.

The continuous mining machine was then backed up and repositioned to cut the left inby corner in the No. 2 entry at 60 crosscut. (See drawing in Appendix D) Jerrod Harteis, the Right Side Roof Bolting Machine Operator left the face area and was replaced by Mark Charley, Utility Man. Harteis was training Charley to operate the right side bolter on the night of the accident.

The head of the continuous mining machine was lowered to prevent the previously installed roof supports from being cut out while mining the left corner. This created a brow. The brow was triangular in shape and measured approximately 4 feet by 3.1 feet by 3.5 feet. The thickness of the rock and coal ranged from 9 inches to 11.5 inches thick.

At approximately 11:00 p.m., after the corner was cut, the continuous mining machine was backed up and repositioned to mine the straight of the No. 2 entry. Robert Maust, Left Side Bolter Operator, (victim), picked up a roof jack that was lying on the floor in the No. 60 crosscut, between the No. 2 and No. 1 entries and began to set a jack beneath the brow. Donald Farrell, Continuous Miner Operator, began to tram the continuous mining machine back to the face in the No. 2 entry.

Charley was standing in the crosscut on the right side of the continuous mining machine and heard a crack. He looked across the continuous mining machine and saw a piece of rock fall from the mine roof and lost sight of Maust. He flagged and yelled to Farrell that Maust went down. Farrell immediately shut off the continuous mining machine and went to check on Maust.

As Farrell went to the left side of the continuous mining machine, he observed Maust and the roof jack lying beneath a piece of rock. Maust did not respond when Farrell spoke to him. Farrell yelled for Alexander Skakandy, Loader Operator, to help. Farrell told Charley to go for help. Skakandy and Farrell tried to remove the rock, but it was too heavy to remove. Farrell went to get Joseph Uzlik, centerbolter operator, who was working in the No. 1 entry (belt entry).

Harteis was at the power center with Stull. Charley flagged Stull and Harteis with his cap lamp to come up to the face area. Both men proceeded up to the area. Harteis assisted Skakandy, Farrell, and Uzlik to remove the rock from on top of Maust.

Stull instructed Charley to get first aid supplies and have the scoop brought to the area. Uzlik and Farrell set the jack to support the corner. Maust was lying in the No. 60 crosscut under supported roof. Harteis spoke to Maust, but received no response. Harteis checked Maust's vital signs. Maust was not breathing and a pulse was not detected. Harteis began to perform CPR on Maust.

The victim was placed on a mantrip. Farrell drove the mantrip to the surface, while employees continued to perform CPR on Maust. EMTs, Eric Riding and Jim Marsh, met the mantrip and assisted in performing CPR.

Southwest EMS Ambulance service personnel met the EMTs at the shaft bottom and took over treatment. Maust was pronounced dead at the mine at 12:17 a.m. on June 24, 2009, by a Doctor located at the Greene County Memorial Hospital in consultation with onsite Emergency Medical Service personnel. Southwest EMS transported Maust to Greene County Memorial Hospital in Waynesburg, Pennsylvania.

INVESTIGATION OF THE ACCIDENT

On June 23, 2009, at approximately 11:20 p.m., David Severini, Supervisory Coal Mine Safety and Health Inspector (Ruff Creek Field Office), received a telephone call from James Manuel Jr., Manager of Safety, Pennsylvania Operations that a serious accident had occurred at the Bailey Mine.

At 11:44 p.m. the MSHA Emergency Hotline, was notified by Ronald Stull that a serious accident had occurred on the 4 West Section (MMU 066-0). The MSHA call center telephoned the District 2 Emergency Phone at 11:57 p.m. A non contributory violation was issued for a failure to contact the MSHA Call Center within 15 minutes.

James M. Hindman, Supervisory, Coal Mine Safety and Health Specialist, was responsible for handling calls received on the emergency cellular phone at the time of the accident. Hindman called Anthony Guley, Assistant District Manager for Inspections, at approximately 12:00 a.m., on June 24, 2009, and informed him of the accident.

Guley contacted Severini at approximately 12:30 a.m., and arranged for Jeremy Williams, Coal Mine Safety and Health Inspector/ Accident Investigator to serve as the lead accident investigator. Severini called Ronald Tolliver, Coal Mine Safety and Health Inspector (Ruff Creek Field Office), and informed him that there was a serious accident at the Bailey Mine. Severini issued a 103(k) Order to Manuel at 12:40 a.m. on June 24, 2009.

Guley, Severini, and Tolliver arrived at the Crabapple Portal at the Bailey Mine at approximately 2:15 a.m. Williams arrived at approximately 3:00 a.m. Pennsylvania Deep Mine safety officials Dennis Walker, Chief, Bituminous Division, Paul Keruskin, Bituminous Mine Inspector, Supervisor, and Larry Stowinsky, Bituminous Mine Inspector, met with the MSHA officials at the mine and prepared to conduct interviews. The members of the 4-West crew were interviewed individually. Consol company officials Eric Schubel, General Superintendent; Todd Moore, Director of Safety Services; Richard Marlowe, Director of Safety Awareness and James Manuel, Manager of Safety, Pennsylvania Operations, were present at the interviews. The 103(k) Order was modified to allow the mine to conduct the required examinations in the area.

Upon completion of the interviews, the accident investigation team consisting of MSHA District 2, MSHA Technical Support and Pennsylvania Deep Mine safety officials, along with Consol officials traveled to the 4-West Section. An investigation of the accident site was conducted. Measurements and photographs of the accident site were taken.

Additional interviews with the 4-West crew were conducted on July 7, 2009. MSHA and Pennsylvania Deep Mine Safety Officials interviewed four of the miners to obtain additional information about the accident.

DISCUSSION

Accident Site

The mining height in the crosscut averaged 100 inches and entries and crosscuts averaged 16 feet in width. The left inby corner in the No. 2 entry at the No. 60 crosscut was triangular in shape. The corner measured approximately 11 feet by 11.8 feet by 16 feet. (See Drawings in Appendix D). Harteis and Farrell commented that the roof conditions in the No. 2 entry and the intersection at 60 crosscut were good. The crew had not detected any bad roof up to the time of the accident. A hammer, which is commonly used as a roof sounding device, was found lying on the mine floor, in the vicinity of the accident site.

Mining Cycle

The No. 60 crosscut was mined from the No. 1 entry to the No. 3 entry. The area was mined with a full face continuous mining machine equipped with integral bolters as the mining advanced.

There are two roof bolting stations located on the continuous mining machine, one on each side of the machine. An 8 foot mechanically anchored/resin assisted combination roof bolt is installed from each station in conjunction with a metal roof strap. The two roof bolts installed from the continuous mining machine are located approximately 4 feet from each rib. There is approximately 8 feet between the two bolts that are installed from the roof bolting stations on the continuous mining machine. Upon the installation of the roof bolts and straps the area is considered supported. When mining in the entry is completed, and the continuous mining machine is moved to another place, a roof bolting machine is brought in to the entry to install a center bolt in the roof strap.

The No. 2 entry had not been mined up when the cut across from the No. 1 entry to the No. 3 entry was mined. Roof mesh was installed in the projected hole-through location for the intersection that would be created when the No. 2 entry was mined. The roof mesh was installed in conjunction with the roof channel and bolts when the area was developed. Once the crosscut from the No. 1 to the No. 3 entry was mined, the continuous mining machine was backed out of the crosscut and down the No. 1 belt entry and set up to mine the No. 2 track entry. At this time, a roof bolting machine was trammed into the No. 1 entry to install center bolts in the No. 1 entry as well as the newly developed crosscut.

The No. 2 entry was mined to intersect the Nos. 59 and 60 crosscuts. Once a crosscut is intersected and the area is bolted up to the previously installed roof supports, the corners are cut. The roof above the outby corners are bolted from the continuous mining machine as the corners are mined. The left inby corner is cut, head on, from the No. 2 entry and is not bolted from the continuous mining machine. In order to prevent the previously installed roof supports from being cut out while mining the corner, the head of the continuous mining machine is lowered away from the mine roof. This leaves a brow of rock and/or roof coal. (See Drawings in Appendix D)

Roof Control

Prior to mining into the No. 60 crosscut, the intersection was center-bolted with 8 foot combination bolts and 16 foot cable bolts. The cable bolts are a non-tension resin bolt system. The cable bolts were installed in every other channel across the intersection area. (See Drawings in Appendix D)

The roof control plan does not require that the cable bolts be installed when center-bolting the area. The installation of the cable bolts and roof mesh was in addition to the requirements of the roof control plan. The mine installed the additional material to provide added protection for the area due to the fact that the area would be a long term track haulage entry.

The No. 2 entry was mined to the No. 60 crosscut and was supported with 8 foot combination bolts in conjunction with roof channel and roof mesh. After mining was completed in the crosscut, roof bolts, channel, and mesh were installed to the intersection. The right outby corner was then mined. The corner was supported with roof bolts, channel, and roof mesh installed by the continuous mining machine roof bolters. After completion of the corner, the straight portion of the No. 2 entry inby the No. 60 crosscut was mined. The area was advanced approximately 18 feet inby the rib line. Three rows of bolts were installed in the overdrive along with channel and roof mesh.

As explained in the "Description of the Accident," the continuous mining machine was backed out the No. 2 entry and repositioned to cut the left inby corner in the No. 60 crosscut. The continuous mining machine was positioned so that the corner was cut head-on by the machine. According to the crew this is a typical method of mining the corner in this area. Once the miner is backed away from the cut a temporary roof support (roof jack) is installed in the area. The roof jack is used to support the area until a permanent roof support is installed. The area is commonly roof bolted with the center bolting machine.

According to the continuous mining machine operator and roof bolting machine operators, if there is any indication that the roof is bad in the area, the corner is roof bolted with the center bolting machine before working inby the area. Farrell stated that there was no indication of bad roof when the corner was cut.

ROOT CAUSE ANALYSIS


An analysis was conducted to identify the underlying causes of the accident that were correctable through reasonable management controls. Listed below is the root cause identified during the analysis and the corresponding corrective action implemented to prevent a recurrence of the accident.

Root Cause: The mine operator did not have procedures in place to install permanent supports on corners prior to operating inby the area.

Corrective Action: The roof control plan has been revised to require the installation of permanent supports prior to working inby corners.

CONCLUSION

Robert Maust, left side bolter, was fatally injured when a portion of the mine roof fell while he was installing a roof jack on the left inby corner of 60 crosscut in the No. 2 entry. The brow that was left when the corner was mined dislodged from the mine roof and struck the victim. According to the continuous mining machine operator, there was no evidence of bad roof when the area was mined. A hammer, which is commonly used as a roof sounding device, was found lying on the mine floor in the vicinity of the accident site. Roof jacks were commonly set on corners to provide temporary support until the permanent supports are installed. The mine operator did not have procedures in place to permanently support corners prior to operating inby the area.

 10/20/09
William Ponceroff (Date)
District Manager

ENFORCEMENT ACTIONS

Section 103(k) Order, No. 8008186, was issued on June 24, 2009, to Consol Pennsylvania Coal Company, Bailey Mine, which stated: "The mine has experienced a fatality in the 4 West Mains (MMU-066) working section. This Order is issued to assure the safety of all persons in this mine until an examination or investigation is made to determine the 4 West Mains working section is safe. All persons shall be immediately withdrawn from the affected site. Only those persons selected from company officials, state officials, the Miners Representative and other persons who are deemed by MSHA to have information relevant to the investigation may enter or remain in the affected area."

**APPENDIX A
PERSONS PARTICIPATING IN THE INVESTIGATION**

The following people provided information and/or were present during the investigation:

Consol Energy Inc.

Richard Marlowe	Director of Safety Awareness
Todd Moore	Director of Safety Services
James Manuel	Manager of Safety, Pennsylvania Operations
Robert Robinson	Mine Engineer

Consol Pennsylvania Coal Company, Bailey Mine

Eric Schubel	General Superintendent
Larry Cassidy	Mine Foreman
Alan Hinderliter	Assistant Shift Foreman
Ronald Stull	Section Foreman
Michael Tennant	Safety Supervisor
Donald Farrell	Continuous Miner Operator
Jerrod Harteis	Right Side Mounted Roof Bolter
Mark Charley	Utility Man/Right Side Mounted Roof Bolter
Joseph Uzlik Jr.	Roof Bolter Operator
Alexander Skakandy	Loading Machine Operator
Ronald Stull Jr.	Mechanic

Mine Safety and Health Administration

Anthony Guley	District 2 Assistant District Manager, Inspection Division
William Gray	Technical Support-Pittsburgh, Roof Control
David Severini	Ruff Creek Field Office Supervisor
Jeremy Williams	Coal Mine Inspector/ Accident Investigator
Carl Kubincanek	Coal Mine Inspector/ Accident Investigator
Ronald Tolliver	Coal Mine Inspector

Pennsylvania Deep Mine Safety

Dennis Walker	Bituminous Division Chief
Paul Kerskin	Bituminous Mine Inspector Supervisor
Larry Stowinsky	Bituminous Mine Inspector

APPENDIX B VICTIM INFORMATION

Accident Investigation Data - Victim Information

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



Event Number:

6	2	2	1	3	6	2
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Victim Information: 1

1. Name of Injured/Ill Employee: <i>Robert Maust</i>		2. Sex <i>M</i>	3. Victim's Age <i>54</i>	4. Degree of Injury: <i>01 Fatal</i>																																												
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 06/24/2009 b. Time: 0:17</i>				6. Date and Time Started: <i>a. Date: 06/23/2009 b. Time: 16:00</i>																																												
7. Regular Job Title: <i>048 Roof Bolter Mounted</i>		8. Work Activity when Injured: <i>083 Setting Roof Jack</i>			9. Was this work activity part of regular job? <table style="margin-left: auto; margin-right: 0;"><tr><td>Yes</td><td><input checked="" type="checkbox"/></td><td>No</td><td><input type="checkbox"/></td></tr></table>		Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>																																						
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11. What Directly Inflicted Injury or Illness? <i>089 Broken Rock</i>				12. Nature of Injury or Illness: <i>170 Crushing</i>																																												
13. Training Deficiencies: Hazard: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table> New/Newly-Employed Experienced Miner: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table> Annual: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table> Task: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
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14. Company of Employment: (If different from production operator) <i>Operator</i>				Independent Contractor ID: (If applicable)																																												
15. On-site Emergency Medical Treatment: Not Applicable: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table> First-Aid: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table> CPR: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table> EMT: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table> Medical Professional: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table> None: <table style="display: inline-table;"><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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16. Part 50 Document Control Number: (form 7000-1)				17. Union Affiliation of Victim:																																												

APPENDIX C
PHOTOGRAPHS



The roof jack was installed by the crew members after the accident to support the top while performing First Aid/CPR on the victim.

APPENDIX C
PHOTOGRAPHS



Rock that struck victim was triangular in shape and measured approximately 4.5 feet by 3.1 feet by 3.5 feet, and ranged from 9 inches to 11.5 inches thick.

APPENDIX D
DRAWINGS CONT'D.

