

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Facility
(Cement)

Fatal Electrical Accident
August 9, 2024

Eaton Corporation (B3089)
Grapevine, Texas

at

Maryneal Quarry and Mill
Buzzi Unicem USA
Maryneal, Nolan County, Texas
ID No. 41-00283

Accident Investigators

Jerry Whitehead
Mine Safety and Health Inspector

Robert Teeter
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Dallas District
1100 Commerce Street RM 462
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Brett Barrick, Acting District Manager

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OVERVIEW

On August 9, 2024, at 2:47 p.m., William Harger, a 64-year-old electrician from Eaton Corporation, with over 38 years of electrical experience, was burned from an arc flash from 4,160-volt components in an electrical panel. On August 22, 2024, Harger died from his injuries.

The accident occurred because the mine operator and the contractor did not: 1) ensure that the disconnecting device to an electrical circuit was locked out and tagged out before work began, and 2) ensure proper protective equipment was worn before working in an energized electrical panel. Additionally, (3) the mine operator did not ensure that the contracted electrician received the proper site-specific hazard awareness training.

GENERAL INFORMATION

Buzzi Unicem USA operates the Maryneal Quarry and Mill in Maryneal, Nolan County, Texas. The mine and mill employ 134 miners on rotating eight-hour shifts, seven days a week. The mine extracts crushed and broken limestone using excavators, front-end loaders, and haul trucks. Belt conveyors transport the material to the mill where it is processed into cement and sold to customers. The mine operator contracted with Eaton Corporation to provide an electrical panel for a motor control center. The mine operator also contracted with Southwest Electrical Contracting Services to terminate control circuits.

The principal management officials at the Maryneal Quarry and Mill at the time of the accident were:

Michael McHugh
Tonya Osteen

Plant Manager
Safety and Health Manager

The principal management officials for Eaton Corporation at the time of the accident were:

Hope Hartwell
Michael Johnson
Corey Walton

Environmental Health and Safety Manager
Environmental Health and Safety Manager
District Operations Manager

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on May 8, 2024. The 2023 non-fatal days lost incident rate for Maryneal Quarry and Mill was 2.84, compared to the national average of 1.57 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On August 9, 2024, at approximately 10:30 a.m., Harger arrived at the Shipping Control Center to install an “86” relay (a relay setup to run a sequence of devices) and to troubleshoot existing problems that came up during the commissioning of the SYW1387541-010 electrical panel. A second contractor, Southwest Electrical Contracting Services, had completed some control circuit terminations on wires in the panel. According to the interview with Leo Lucero, Superintendent, who oversaw this project, Harger started loading the new relay settings into the programmable logic controller. Lucero said Harger closed the main switch and tried to get the power to come on in the panel, however it would not energize.

The SYW1387541-010 electrical panel had two doors. The outer door to the electrical panel was opened. Harger determined that the micro screw on the blown fuse indicator device needed to be adjusted. Harger reached inside the electrical enclosure to adjust the micro screw. While Harger was doing this work, energized 4,160-volt components and 110-volt components were in the electrical panel and were within Harger’s reach.

At approximately 2:20 p.m., Nicholas Clemons, District Support Engineer for Eaton Corporation, called Lucero, to discuss problems identified in the logic sequencing. Lucero returned to his office in the administrative building to call Clemons.

Harger continued to work and at approximately 2:45 p.m. he contacted the 4,160–volt energized components in the SYW1387541-010 electrical panel which created an arc flash. Harger received burns on his arms and torso from the arc flash.

Raul Perez, Safety Manager for Southwest Electrical Contracting Services, saw Harger was on fire, got a fire extinguisher, and put the fire out. The Buzzi Emergency Response Team arrived at 2:49 p.m. and placed Harger on a stretcher to move him out of the room for first aid treatment.

At 2:50 p.m., Kasey Williamson, Control Room Supervisor, called 911. At 3:18 p.m., an ambulance from Sweetwater, Texas Fire Department arrived on the scene and transported Harger to the hospital. On August 22, 2024, Charles Addington II, MD, pronounced Harger deceased at 5:57 p.m. due to complications from injuries sustained during the accident.

INVESTIGATION OF THE ACCIDENT

On August 9, 2024, at 2:55 p.m., Allan Price, Heating, Ventilation, and Air Conditioning Technician, contacted the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted John Powers, Supervisory Mine Safety and Health Inspector. Powers contacted Neal Davis, Supervisory Mine Safety and Health Inspector, about the accident. Davis contacted Robert Teeter, Mine Safety and Health Inspector, and instructed him to go to the mine. Teeter arrived at the mine at 10:30 p.m. and issued an order under the provisions of Section 103(k) of the Mine Act to ensure the safety of the miners and preservation of evidence. Brett Barrick, Assistant District Manager, contacted Jerry Whitehead, Mine Safety and Health Inspector, and assigned him as the lead accident investigator.

MSHA's accident investigation team conducted an examination of the accident scene; interviewed miners, mine management, contractors, and contractor management; and reviewed conditions, policies, and work procedures relevant to the accident. See Appendix A for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred in the Shipping Motor Control Center in Panel SYW138741-010 (see Appendix B). According to interviews, Harger was adjusting the micro screw on the blown fuse indicator device on the switchgear portion of the electrical panel.

Personal Protective Equipment (PPE)

Buzzi Unicem USA has a safety policy that requires arc flash suits to be worn when exposed to arc flash hazards. Eaton Corporation provides its employees with protective clothing based on the incident energy involved and where de-energization has not otherwise been confirmed. Eaton Corporation has a safety policy that states for incident energy levels above 8 cal/cm² that has not been placed in an electrically safe work condition, field service representatives must don 40 cal/cm² suits with a 40 cal/cm² balaclava. Additionally, the following PPE must also be worn: safety glasses; hearing protection; rubber-insulated electrical gloves with leather protectors; hard hats; and leather, steel-toed boots. The investigation revealed that Harger was not wearing an arc flash suit, nor rubber insulated electrical gloves. Investigators determined not wearing an arc flash suit, nor rubber insulated electrical gloves contributed to the accident.

Equipment Involved

The equipment involved in this accident was an electrical panel labeled SYW138741-010 supplied by Eaton Corporation. According to interviews, Harger was adjusting the micro screw on the blown fuse indicator device on the switchgear portion of the electrical panel (see Appendices C and D). This panel was energized by a 4,160-volt alternating current busbar. The

power to the Shipping Motor Control Center was provided by the S02 Substation. The electrical power to the electrical panel was not de-energized, locked out, and tagged out prior to work began. Investigators determined that this contributed to the accident.

Examinations

Perez conducted a workplace examination in the Shipping Motor Control Center on August 9, 2024. Investigators determined the examination was adequate and did not contribute to the accident.

Training and Experience

Harger had 38 years of electrical experience. Eaton Corporation provided an extensive list of training provided to Harger from 2018 to 2024, including de-energization, lock out, tag out, and PPE, including arc flash PPE. Harger received inadequate site-specific hazard awareness training on August 2, 2024, which contributed to the accident. Investigators determined this training did not contain information or instruction on the safety risks of the work that he was contracted to do. Harger did not receive other Part 46 Training because of his frequency and duration of work in mines.

ROOT CAUSE ANALYSIS

The accident investigation team conducted an analysis to identify the underlying causes of the accident. The team identified the following root causes, and the mine operator and the contractor implemented the corresponding corrective actions to prevent a recurrence.

1. Root Cause: The mine operator and the contractor did not ensure that the disconnecting device to an electrical circuit was locked out and tagged out before work began.

Corrective Action: The mine operator and the contractor retrained all electricians, as well as employees who are responsible for overseeing projects, in de-energizing, locking out, and tagging out verification procedures for working on electrical equipment and/or circuits.

2. Root Cause: The mine operator and the contractor did not ensure proper protective equipment was worn before working in an energized electrical panel.

Corrective Action: The mine operator and the contractor retrained all electricians, as well as employees who are responsible for overseeing projects, in the use of arc flash protective gear.

3. Root Cause: The mine operator did not ensure that the contracted electrician received the proper site-specific hazard awareness training.

Corrective Action: The mine operator produced a training outline regarding the hazards while installing, commissioning, repairing, and maintaining an electrical panel.

CONCLUSION

On August 9, 2024, at 2:47 p.m., William Harger, a 64-year-old electrician from Eaton Corporation, with over 38 years of electrical experience, was burned from an arc flash from 4,160-volt components in an electrical panel. On August 22, 2024, Harger died from his injuries.

The accident occurred because the mine operator and the contractor did not: 1) ensure that the disconnecting device to an electrical circuit was locked out and tagged out before work began, and 2) ensure proper protective equipment was worn before working in an energized electrical panel. Additionally, (3) the mine operator did not ensure that the contracted electrician received the proper site-specific hazard awareness training.

Approved by:

Brett Barrick
Acting District Manager

Date

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Buzzi Unicem USA.

A fatal accident occurred on August 9, 2024, at approximately 2:47 p.m. This order is being issued under the authority of the Federal Mine and Safety Act of 1977, under section 103(k) to ensure the safety of all persons at the mine and requires the mine operator to obtain approval of an authorized representative of MSHA of any plan to recover any person in the mine or to recover the mine or affected area. This order prohibits any activity in the affected area. The mine operator is reminded of the obligation to preserve all evidence that would aid in investigating the cause or causes of the accident in accordance with 30 CFR 50.12.

2. A 104(d)(2) order was issued to Buzzi Unicem USA for violation of 30 CFR 56.12016.

An accident occurred on August 9, 2024, at 2:47 p.m., in the shipping motor control center. While work was being performed on the electrical panel labeled SYW1387541-010 the mine operator did not deenergize the 4,160-volt alternating current bus and lock and tag the disconnecting device at the S02 substation. This condition resulted in the contracted electrician receiving serious electrical burns to his arms and torso. This violation is an unwarrantable failure to comply with a mandatory standard.

3. A 104(d)(2) order was issued to Buzzi Unicem USA for violation of 30 CFR 56.15006.

An accident occurred on August 9, 2024, at 2:47 p.m., in the shipping motor control center. A contracted electrician was working on the energized 4,160-volt alternating current electrical panel labeled SYW1387541-010. The mine operator did not ensure that the contracted electrician donned the appropriate protective equipment and clothing to perform the work safely. An arc flash occurred, resulting in the contracted electrician receiving serious electrical burns to his arms and torso. This violation is an unwarrantable failure to comply with a mandatory standard.

4. A 104(a) citation was issued to Buzzi Unicem USA for violation of 30 CFR 46.11(d).

An accident occurred on August 9, 2024, at 2:47 p.m., at the shipping motor control center. A contracted electrician received site-specific hazard awareness training on August 2, 2024, and it did not contain information or instruction on the safety risks of the work that he was contracted to do. While working on the energized electrical panel labeled SYW1387541-010, the contracted electrician was not instructed to de-energize and lock out the equipment or don the appropriate equipment and clothing to perform the hot work safely. An arc flash occurred, resulting in the contracted electrician receiving serious electrical burns to his arms and torso.

5. A 104(a) citation was issued to Eaton Corporation for violation of 30 CFR 56.12016.

An accident occurred on August 9, 2024, at 2:47 p.m., in the shipping motor control center. While working on the electrical panel labeled SYW1387541-010 a contracted electrician did

not de-energize the 4,160-volt alternating current bus. This condition resulted in the contracted electrician receiving serious electrical burns to his arms and torso.

6. A 104(a) citation was issued to Eaton Corporation for violation of 30 CFR 56.15006.

An accident occurred on August 9, 2024, at 2:47 p.m. in the shipping motor control center. While working on the energized electrical panel labeled SYW1387541-010 a contracted electrician did not don the appropriate protective equipment and clothing to perform the work safely. An arc flash occurred, resulting in the contracted electrician receiving serious electrical burns to his arms and torso.

APPENDIX A – Persons Participating in the Investigation

Buzzi Unicem USA

Michael McHugh	Plant Manager
Antonio Cruz	Operations Manager
Leo Lucero	Superintendent
Tonya Osteen	Safety and Health Manager
James Johns	Shipping Manager
Robert Stieglitz	Maintenance Manager
Kasey Williamson	Control Room Supervisor
Braxton Allen	Administration
James Buckley	Electrician, Miner's Representative
Shane Roberts	Mechanic, Miner's Representative
Blake Harris	Mechanic, Miner's Representative
Mark Wicker	Mechanic
Edward Rose	Heavy Equipment Operator
Travis Anderson	Plant Man
Kevin Espinosa	Plant Man
Eddie Rosas	Plant Man
Allan Price	Heating, Ventilation, and Air Conditioning Technician

Eaton Corporation

Hope Hartwell	Environmental Health and Safety Manager
Micheal Johnson	Environmental Health and Safety Manager
Corey Walton	District Operations Manager
Nicholas Clemons	District Support Engineer
Donald Hall	Field Service Technician

Southwest Electrical Contracting Services

Patrick Mason	Industrial Division Manager
Mark Ervin	Project Manager
Arturo Saenz	Electrical Foreman
Raul Perez	Safety Manager

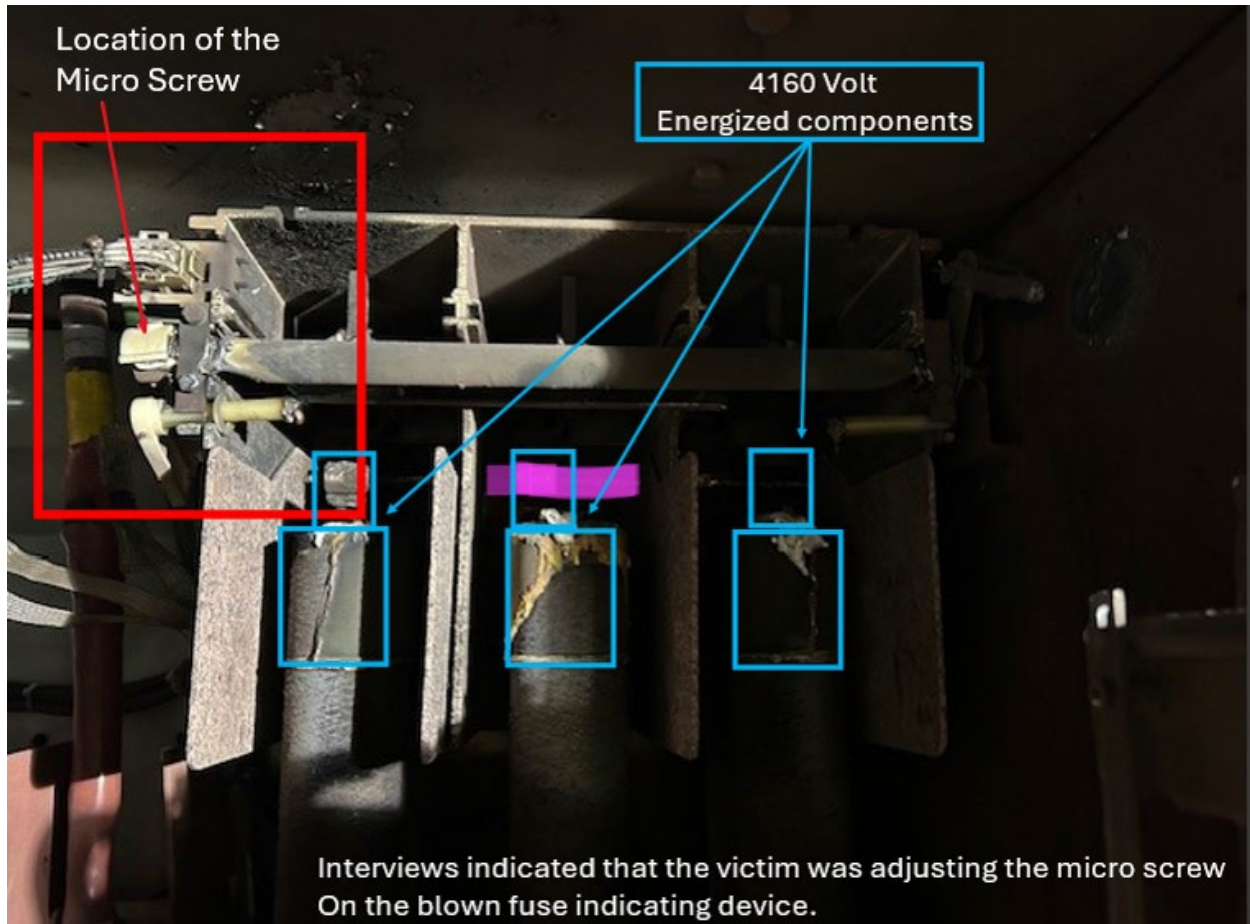
Mine Safety and Health Administration

Robert Teeter	Mine Safety and Health Inspector
Jerry Whitehead	Mine Safety and Health Inspector

APPENDIX B – Aerial View of the Plant



APPENDIX C – Photo of the Damaged Switchgear



APPENDIX D – Photo of Damaged Switchgear Linkage

