

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface
(Crushed Broken Limestone)

Electrical Accident Fatality Report
September 13, 2025

Ste. Genevieve Facility
Tower Rock Stone Company
Sainte Genevieve County, Missouri
ID No. 23-00781

Accident Investigators

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Mine Safety and Health Inspector

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Originating Office
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OVERVIEW

On September 13, 2025, at approximately 8:14 a.m., Chase Conrad, a 21-year-old electrician with over 1 year of mining experience, was electrocuted while replacing a light fixture.

The accident occurred because the mine operator did not: 1) have lockout/tagout (LOTO) procedures in place for electrical work in the new mine office building, 2) provide adequate task training, and 3) conduct a workplace examination prior to beginning work.

GENERAL INFORMATION

Tower Rock Stone Company owns and operates the Ste. Genevieve Facility (Tower Rock), a surface crushed broken limestone mine located in Ste. Genevieve, Sainte Genevieve County, Missouri. Tower Rock employs 186 miners and operates two 9-hour production shifts, 5 days a week. Shovels load material from the pit into haul trucks which then transport the material to the plants for sizing and separation. Tower Rock has a barge and train loadout facility to load customers with material.

The principal management officials at Tower Rock at the time of the accident were:

Eric Osterhage
Clay Metzger
Timothy Dobbela

General Manager
Environmental Superintendent
Director of Safety/Electrical Supervisor

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on July 2, 2025. The 2024 non-fatal days lost incident rate for Tower Rock was 3.82, compared to the national average of 1.23 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On September 13, 2025, at approximately 6:00 a.m., Conrad arrived at the mine to start his shift. Conrad checked the message board in the shop and found that work was needed at the new office building. Conrad traveled from the shop with Kevin Johnson, electrician, to the new office building. Matthew Garrison, second shift electrician, told the day shift crew that the second shift had started replacing light fixtures the night before. During the previous day there was a power surge caused by a piece of farm equipment that contacted an overhead powerline in a field adjacent to the mine property.

At 6:30 a.m., Johnson and Conrad noticed a light in the hallway that was not on and needed to be changed out (Appendix A). They turned off the wall switch in the hallway before starting work. As Johnson began to unwire the light fixture by removing the wire nuts, he heard arcing that indicated that the light was still energized. Johnson stopped work, went to the basement to the main lighting panel (Appendix B), and de-energized circuit breaker 34. This de-energized all the 277-volt alternating current (VAC) first-floor lights and activated the first-floor emergency lighting.

When the emergency lights came on, Johnson realized that the hallway light fixture that he was working on had remained energized when they turned off the wall switch in the hallway until circuit breaker 34 was de-energized. Johnson and Conrad replaced the hallway light fixture, and Johnson went back to the basement to re-energize circuit breaker 34 to verify that the light was fixed. Once the light came on, Conrad yelled down the stairwell next to the light; and said it was fixed. Conrad and Johnson went to the production supervisor's office and saw that a light in the office was not on (Appendix C). They turned off the production supervisor's office wall switch and began replacing the light fixture in the office. Johnson helped Conrad get the old light fixture down and placed it along the wall in the office. Johnson handed Conrad a new light fixture.

At this point, Johnson went around the inside of the building to see which other lights were not functioning while Conrad continued to install the light fixture in the office alone. Once Johnson identified several other lights that were not functional, he stopped to check on Conrad and asked if he was good. Conrad said, "yes," and was working on a ladder in the drop ceiling with one tile removed to access the wiring (Appendix D). Johnson returned to the basement where they stored new light fixtures and counted how many they had left. He heard a loud thud; and the sound of the ladder hitting the floor. Johnson ran upstairs and found Conrad lying on the floor propped up against the wall and the ladder knocked over.

Mike Draves, fleet manager, who was working in his office, also heard the noise and came running into the office. Draves checked on Conrad, who was unconscious and not breathing. Draves called 911 at 8:14 a.m. Johnson performed cardiopulmonary resuscitation. Draves and Johnson applied an automated external defibrillator (AED), but the AED did not advise administering a shock. At 8:27 a.m., Sainte Genevieve Ambulance District arrived and took over

resuscitation efforts. Eric Basler, Sainte Genevieve County Coroner, pronounced Conrad dead on mine property at 9:26 a.m.

INVESTIGATION OF THE ACCIDENT

On September 13, 2025, at 8:38 a.m., William Kettinger, production superintendent, called the Department of Labor National Contact Center (DOLNCC) to report a serious accident. The DOLNCC notified Anthony DiLorenzo, supervisory mine safety and health inspector. DiLorenzo informed Nicholas Lands and Daniel Bradley, supervisory mine safety and health inspectors. Bradley sent Steven Dingess, mine safety and health inspector, to the mine. Dustin Galloway, staff assistant, sent Jason Noel, mine safety and health inspector, to the mine and assigned him as the lead investigator.

At 1:30 p.m., Dingess and Bradley arrived at the mine. Dingess 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. At 3:15 p.m., Noel arrived at the mine.

The MSHA accident investigation team conducted an examination of the accident scene; interviewed miners and mine management; and reviewed conditions and work procedures relevant to the accident. Refer to Appendix F for a list of persons who participated in the investigation.

On September 15, 2025, Bub Whitfield, supervisory mine safety and health specialist, assisted with testing of building electrical systems. Whitfield assisted with testing and inspection of electrical panels, wiring, and electrical equipment.

On November 20, 2025, William Clark, supervisory mine safety and health specialist, assisted with technical testing of the lighting circuit. Clark assisted with specialized insulation testing of components and circuitry specific to circuit 34.

Items collected during the investigation were tested on April 30, 2026 by MSHA Technical Support. Items collected were directly involved in the circuit that include an emergency light, circuit breaker, wall switch, and a section of wiring from the incident light fixture.

DISCUSSION

Location of the Accident

The accident occurred on the first floor of a two-story office building, built in 2022. The mine operator refers to this as the “new office building.”

Equipment Involved

On September 12, 2025, a power surge occurred at the new office building, when a piece of farm equipment contacted an overhead powerline in a field adjacent to the mine property. A similar power surge had occurred 2 years earlier. Both times, the light fixtures inside the building became damaged and stopped functioning.

The light fixture involved in the accident was a Cooper Lighting Solutions Model Metalux 277-VAC fixture. The circuit wiring was a Metal Clad-Light Emitting Diode (MC-LED) cable with armor conduit containing five wires. The black wire was the power wire, the white wire was the neutral wire, and the green wire was the grounding wire. The purple and grey wires were used for the dimmer function of the circuit. The dimmable wall light switch in the production supervisor's office was a Lutron Diva 120-277 VAC switch (Appendix E).

The Eaton 480-VAC main panel supplying the circuit was in the basement of the building and readily identifiable for electricians. Circuit breaker number 34 was an Eaton 20-amp switch-rated duty (SWD) circuit breaker. The distance from the office to the main panel measured 77 feet. A pad-mounted 750-kilovolt amperes (kVA) transformer located outside the back door approximately 10 feet from the building powered the main panel. Citizens Electric, a power company, owned three pole-mounted fuses that fed the transformer.

Investigators examined the production supervisor's office where the accident occurred. Conrad used a 7-foot step ladder with fiberglass legs, aluminum steps, and a plastic top. The ceiling height is approximately 8 feet to where the light fixture is located. There are three light fixtures in the office, all controlled by the same light switch. The light fixture farthest from the light switch was being replaced at the time of the accident.

Investigators examined the electrical system and determined that the wiring on the light fixture involved in the accident was partially fed through a junction box to the leads on the new light fixture. The neutral wire was fed through the junction box of the new light fixture with a wire nut over the end of the wire. The black wire was left open with no wire nut and exposed copper conductors (Appendix D), which provided a direct energized path to anyone exposed to the conductor. According to interviews, the light switch was functioning and was used to turn off the other two light fixtures in the office before replacing the light fixture involved in the accident. During on-site testing, the light switch was stuck in the open state (off) regardless of the light switch's physical position.

Investigators measured a 2,000-ohm electrical resistance in circuit 34 between the black and neutral wires. The black and neutral wires were traced to an emergency light near an exit door in a stairwell. The emergency light was removed and investigators found mechanical damage to the white wire's outer insulation that exposed the inner bare conductor inside of the ceiling junction box.

MSHA Technical Support analyzed the following equipment and determined:

1. The MC-LED cable passed all visual, mechanical, and electrical testing, including insulation resistance testing. There was no evidence of molten copper, thermal damage, arc pitting, or compromised insulation.
2. The Lutron Diva dimmable light switch was found to be inoperative. It measured open (off) regardless of the state of the switch. Internal inspection revealed that the internal 10-ampere fuse was open (de-energized). Continuity testing across the switch's internal latching relay indicated the relay contacts were in a closed (on) state. This indicates the

switch was actively passing 277-VAC line voltage to the load circuit (light fixture) before the switch's circuit board lost power when the internal fuse opened. There was no internal or external visual evidence of thermal cracking, rupture, heat deformation, soot, carbon tracking, or vaporized traces. Evidence indicates the fatal electrical shock and the current that caused the internal fuse to open involved different electrical paths that occurred simultaneously or very close in time.

3. The Compass CCR emergency lighting unit passed all visual, mechanical, and electrical testing. Electrical measurements correlated with an identical exemplar unit. The fixture was powered on and operated as designed.
4. The Eaton 20 Amp single pole SWD circuit breaker for circuit 34 passed all visual, mechanical, and electrical testing. The unit operated within specifications.

Additionally, investigators identified several hazardous electrical conditions in other areas of the building, including improperly installed panels, loose connections, short circuits, mislabeling of circuit breakers, and visible damage.

Electrical Repair Procedures

The mine operator had previously developed and implemented LOTO procedures for electrical work in other areas of the mine. The mine operator trained miners on these procedures using a PowerPoint presentation. Conrad received LOTO training on June 5, 2024. Johnson and Dobbela received the same training on February 11, 2025. However, the mine operator's procedures did not include locking out or tagging out single pole circuit breakers. Additionally, the mine operator did not provide the single pole LOTO devices needed for the type of electrical circuit being replaced. Investigators determined it was common practice for electricians to de-energize light fixtures in the new office building using only the light switches and not de-energize circuit breakers at the electrical source.

On the day of the accident, Conrad and Johnson were working in the building with circuits energized, while Draves was working in his office. There was no signage or indication of any work being performed on those circuits. Additionally, surveillance footage shows that Johnson retrieved a multimeter from the mine's service truck, located in the parking lot in front of the building, to check if voltage was present after the accident. A non-contact voltage detector was also located in the hallway, but during interviews miners stated it was not used on the day of the accident. Investigators determined that the lack of LOTO procedures for electrical work in the new office building contributed to the accident.

Examinations

Garrison conducted tests of the emergency lights in August 2025, testing light function and brightness. All emergency lights passed the test as indicated on the records. No other examinations were conducted inside the new office building. The mine operator did not conduct any continuity and resistance tests of the new office building's grounding system.

The mine operator did not conduct a workplace examination in the new office building before the work on the first-floor lighting began. A workplace examination would have identified the

electrical hazards and tools needed to safely complete the electrical work. Investigators determined that the lack of a workplace examination contributed to the accident.

Training and Experience

Conrad had 1 year and 14 weeks of mining experience, all at Tower Rock, as an electrician. Conrad received annual retraining on February 13, 2025. Conrad had 6 months of experience as a high voltage distribution electrician outside the mining industry prior to starting at Tower Rock, along with an Associate of Applied Science (AA) degree in Electrical Distribution Systems. The mine operator did not provide Conrad with adequate task training on how to properly lockout and tagout the types of electrical equipment and circuit breakers found in the new office building, nor verify that power was de-energized. Investigators determined that the lack of task training contributed to the accident.

ROOT CAUSE ANALYSIS

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

1. Root Cause: The mine operator did not have proper LOTO procedures in place for electrical work in the new office building.

Corrective Action: The mine operator developed and implemented a new written LOTO procedure that includes provisions from 56.12017 and the types of electrical equipment and devices used for LOTO for electrical work in the new office building. The procedure requires workers to identify the specific circuit to be serviced, confirm its location on the breaker panel schedule, and fully de-energize it. Each involved worker must apply a personal lock and tag, and zero voltage must be verified at the work site prior to beginning any task. Upon completion, personnel must be notified before the circuit is re-energized, all locks and tags must be removed, power must be restored, and the circuit's proper operation must be confirmed. The mine operator trained all miners on these procedures.

2. Root Cause: The mine operator did not provide adequate task training.

Corrective Action: The mine operator developed and implemented a new written LOTO procedure for all electrical work in the new office building. The mine operator trained all miners on this procedure.

3. Root Cause: The mine operator did not conduct a workplace examination prior to beginning work.

Corrective Action: The mine operator has provided workplace examinations for the work area. The mine operator developed and implemented a written procedure requiring workplace examinations to be conducted for work areas in the new office building. The mine operator trained all miners in this procedure.

CONCLUSION

On September 13, 2025, at 8:14 a.m., Chase Conrad, a 21-year-old electrician with over 1 year of mining experience, was electrocuted while replacing a light fixture.

The accident occurred because the mine operator did not: 1) have LOTO procedures in place for electrical work in the new office building, 2) provide adequate task training, and 3) conduct a workplace examination prior to beginning work.

Approved By:

Mary Jo Bishop
Acting District Manager

Date

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Tower Rock Stone Company.

A fatal accident occurred on September 13, 2025, at 8:14 a.m. This order is being issued under the authority of the Federal Mine Safety and Health Act of 1977, under Section 103(k) to insure the safety of all persons at the mine, and requires the operator to obtain the 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 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)(1) citation was issued to Tower Rock Stone Company for a violation of 30 CFR 56.12017.

On September 13, 2025, an electrician was replacing a 277 Volts Alternating Current LED light fixture in the new office building production supervisor's office when he was electrocuted. Standard practice in the new office building to deenergize lighting circuits is to turn off the wall light switch to the specific room they are working in and leave the electrical source energized at the circuit breaker. There were no warning signs indicating anyone was working on electrical circuits. Multiple electricians were working in the building with circuits energized. The mine operator failed to ensure that power circuits were deenergized before work was done on such circuits. Suitable warning signs were not posted by the individuals who were performing the work. Switches were not locked out or other measures taken which would prevent the power circuits from being energized without the knowledge of the individuals working on the circuit. The mine operator engaged in aggravated conduct constituting more than ordinary negligence. This is an unwarrantable failure to comply with a mandatory standard.

3. A 104(d)(1) order is issued to Tower Rock Stone Company for violation of 30 CFR 46.7(a).

On September 13, 2025, an electrician was replacing a 277 Volts Alternating Current (VAC) LED light fixture in the new office building production supervisor's office when he was electrocuted. Multiple electricians were working on 277-VAC lighting circuits without properly locking and tagging out the circuit breaker and verifying that the circuit is deenergized. Mine management has not provided adequate training on how to properly lockout and tagout the electrical circuits and verify that power is deenergized. The mine operator engaged in aggravated conduct constituting more than ordinary negligence. This is an unwarrantable failure to comply with a mandatory standard.

4. A 104(d)(1) order is issued to Tower Rock Stone Company for violation of 30 CFR 56.18002(a).

On September 13, 2025, an electrician was replacing a 277-volt Alternating Current LED light fixture in the new office building production supervisor's office when he was electrocuted. A competent person designated by the operator did not examine each working

place at least once each shift before miners began work in that place, for conditions that may adversely affect safety or health, that included any hazards that would be encountered during work, power sources identified, and tools needed to safely complete the work. The mine operator engaged in aggravated conduct constituting more than ordinary negligence. This is an unwarrantable failure to comply with a mandatory standard.

APPENDIX A – Hallway Light Fixture



APPENDIX B – Lighting Panel Circuit Directory

CIRCUIT DIRECTORY	
1 A/C # 1 TRANSFORMER	2 FURNACE # 5
3 A/C # 1 TRANSFORMER	4 FURNACE # 5
5 A/C # 1 TRANSFORMER	6 FURNACE # 5
7 A/C # 5	8 FURNACE # 1
9 A/C # 5	10 FURNACE # 1
11 A/C # 5	12 FURNACE # 1
13 A/C # 4	14 FURNACE # 1
15 A/C # 4	16 FURNACE # 3
17 A/C # 4	18 FURNACE # 2
19 A/C # 2	20 FURNACE # 4
21 A/C # 2	22 FURNACE # 4
23 A/C # 2	24 FURNACE # 4
25 A/C # 1	26 FURNACE # 3
27 A/C # 1	28 FURNACE # 3
29 A/C # 1	30 FURNACE # 3
31 A/C # 3	32 BASEMENT LIGHTS
33 A/C # 3	34 1 st FLOOR LIGHTS
35 A/C # 3	36 2 nd FLOOR LIGHTS
37	38
39	40
41	42
(OVER)	
114B361H01	

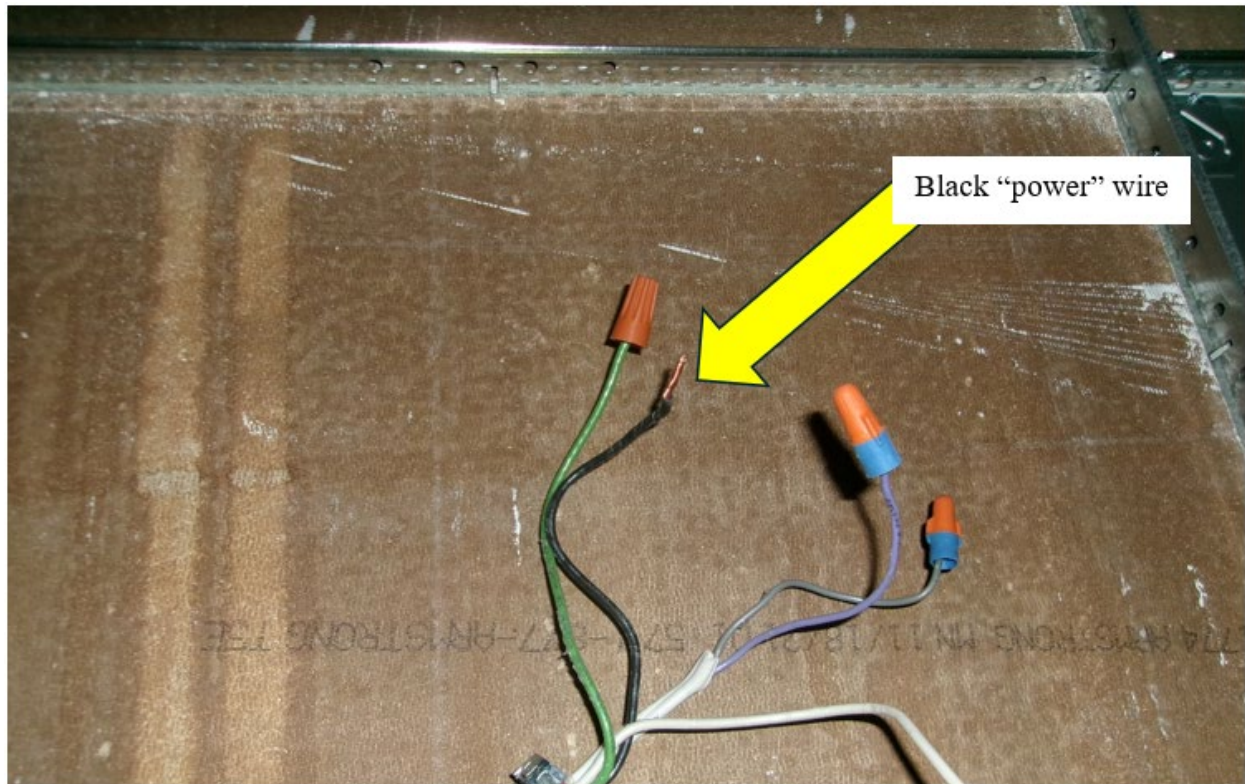
NOTICE

Breaker 34, labeled
"1st Floor Lights"

APPENDIX C – Light Fixtures in the Production Supervisor’s Office



APPENDIX D – Light Fixture Wiring



The black wire was the power wire, the white wire was the neutral, and the green was the grounding wire. The purple and grey wires were used for the dimmer function of the circuit.

APPENDIX E – Lutron Diva Dimmable Wall Light Switch in Production Supervisor's Office



APPENDIX F – Persons Participating in the Investigation

Tower Rock Stone Company

Eric Osterhage	General Manager
Timothy Dobbela	Director of Safety/Electrical Supervisor
Clay Metzger	Environmental Superintendent
Michael Draves	Fleet Manager
William Kettinger	Production Superintendent
Brent Carlson	Electrician
Jeremy Haegle	Electrician
Kevin Johnson	Electrician
Matthew Garrison	Second Shift Electrician
Steven Smith	Miners Representative

Mine Safety and Health Administration

Mary Jo Bishop	Acting District Manager
Kevin Hirsch	Assistant District Manager
David Stepp	Assistant District Manager
Dustin Galloway	Staff Assistant
William Clark	Supervisory Mine Safety and Health Specialist
Bub Whitfield	Supervisory Mine Safety and Health Specialist
Daniel Bradley	Supervisory Mine Safety and Health Inspector
Steven Dingess	Mine Safety and Health Inspector
Jason Noel	Mine Safety and Health Inspector
Maxwell Clark	Electrical Engineer, Technical Support
Samantha Zeigler	General Engineer, Technical Support