

Fall from ladder—Insp # 1629501 Mid-South Electric Contractors, Inc.

A **47 year old male** employee was troubleshooting an LED lighting fixture from an 8-foot step ladder when he received an electric shock which caused him to **fall from the ladder**, striking his head on a cubicle. He succumbed to his injuries 6 days later. He was a member of a five-person work crew but working alone on the 4th floor.

The victim had been tasked with troubleshooting an overhead light emitting diode (LED) lighting fixture where only half of the fixture was illuminated. Each section was approximately 18 inches long, and the fixture was approximately 36 inches long overall. The fixture's driver housing was mounted on top of a metal lighting cable tray just below the ceiling and above the fixture. The driver, basically an electronic transformer (similar to a ballast for a fluorescent lighting fixture), converts the incoming 277 volts alternating current into the outgoing 24 volts direct current for the fixture. The wiring connections inside the driver housing utilized WAGO® Push Wire Wall-Nut connectors.

According to the foreman, the victim used an eight-foot step ladder to access the driver housing. It was determined that the victim required electrical power to test the functionality of the fixture, so he did not de-energize the power supply for the lighting fixture. The victim would have used a remote control to program the lights. He opened the driver housing and cut the wires from two WAGO® Push Wire Wall-Nut connectors. He stripped the insulation from the ends of all the wires. He used wire nuts to reconnect the first set of the wires to eliminate the possibility of any loose connections. The second set of wires were not reconnected.

The VP stated that the victim may have been trying to insert a wire into a quick connect and not necessarily a wire nut. The quick connect served as disconnect feature that is totally enclosed in an insulating material where the wire is inserted like the back of a 120-volt receptacle. The breaker had tripped after the accident. Also, the VP explained that the light fixture has two ballasts. One is an emergency ballast that has a constant hot wire feeding it. The second ballast has a switch leg feeding it. It was determined that the constant hot wire and the switch leg were crossed at the light fixture. It was repaired after the incident.

Apparently at some point while the victim was working in the driver housing, an energized 277v wire contacted the driver housing, as evidenced by the arc residue on the exterior of the driver housing. At approximately that same moment, something contacted, or was already in contact with, the exterior of the RF Modulator box, as evidenced by the arc residue on the exterior of the RF Modulator box.

According to a witness, the victim was seen on the ladder struggling right before he fell. The witness added there were bright sparking lights before the victim fell from the ladder.

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The medical examiner's report indicated that the victim's right hand may have contacted the energized 277v wire and the driver housing simultaneously. The back of his left hand may have been in contact with the RF Modulator box sustaining a 277v electrical shock which was enough to throw him off balance causing him to fall from the step ladder after receiving that electrical shock. The victim then fell onto the cubicle furniture before landing on the floor which caused blunt force head injuries from the fall.

Citation(s) as Originally Issued

A complete inspection was conducted at the accident scene. Some of the items cited may not directly relate to the fatality.

Citation 1 Item 1 **Type of Violation:** **Serious** **\$4000**

29 CFR 1926.416(a)(1): Employee(s) were permitted to work in proximity to an electric power circuit that the employee could contact in the course of work and was not protected against electric shock by de-energizing the circuit and grounding it or by guarding it effectively by insulation or other means:

In that an employee was not protected from electric shock when he contacted an energized 277 VAC wire in the driver housing for an LED lighting fixture above Cubicle #4-272 when performing tasks such as troubleshooting/repairing

Citation 2 Item 1 **Type of Violation:** **Other-than-Serious** **\$500**

TDLWD Rule 0800-01-03-.05(1)(a)2: Within twenty-four (24) hours after the in-patient hospitalization of one or more employees or an employee's amputation or an employee's loss of an eye, as a result of a work-related incident, the employer did not report the in-patient hospitalization, amputation, or loss of an eye to TOSHA.

In that an in-patient hospitalization, resulting from a workplace incident that occurred on 10/12/2022 at the jobsite located at 6077 Primacy Pkwy, Memphis, TN, was not reported to TOSHA.



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