

A **23 year old male** employee was **electrocuted** while installing a new HVAC unit at a residential home. This incident occurred on Sept 22 but was not reported until Oct 11; therefore, the job was completed at the time of inspection.

The employer was hired to remove the old system and replace it with a newer system. The old system was removed and moved to the side so the new system could be installed. The systems were similar setups, based on them both being gas powered units, however the gas intakes were in different locations of the units. Because the gas intake was on the opposite side of the new system, additional gas pipe needed to be installed to hook up the gas. Employees were cutting pipe to the appropriate size, then were required to use a pipe threader to create threads on the cut pipe so it would fit into the elbow fittings.

The pipe threader that was used required electricity to function. Because there was no outlet outside to power the threader, an adapter cord was used to create a plug for use. This adapter cord is manufactured with a female end and three cords with alligator clips on the other. The three cords are designed to connect to the hot, neutral, and ground wires of an HVAC unit to create a plug. For the adapter cord to work, the panel housing the electrical wires needed to be removed. This panel was located on the right-hand side of the new HVAC system where the gas intake was also located. The HVAC system sits on a small metal stand which has openings large enough for the gas pipe to slide through.

The two employees ran a piece of gas pipe through the openings under the unit from the left side to the right side. After the pipe had threads added to it, the employees were going to thread it into the elbow fitting on the right side of the system. The victim was kneeling down on the right side of the unit attempting to line up the gas pipe and the elbow fitting so the employee on the left could twist the pipe into the fitting. The victim leaned towards the front of the system, where the open panel with the adapter cord was located, in what is believed to be an attempt to get a better view of the pipe and elbow fitting. It was at this time that the victim came into contact with energized electrical wires. It was unclear to what wires the victim contacted; however, a burn mark was visible on the interior of the system and melted copper was found at the base of the unit. The right side of the victim's face, near the ear, contacted the energized wire. The incident resulted in the victim being hospitalized until he passed away from his injuries.

It was explained by the employer that there were two hot wires in the electrical system of the HVAC; one used to power the adapter cord and the other had a wire nut end. Also, the hot wires were tested, and each had 125 volts of electrical energy. It is uncertain which wire the victim contacted; however, the owner stated that he will never use the adapter cord again.

Based on information obtained, the victim was working within proximity to energized electrical wires installing metal gas pipe and was not protected against electrical shock by de-energizing or guarding the circuits.

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** **\$1500**

29 CFR 1926.416(a)(1): Employees were permitted to work in proximity to electric power circuits and were not protected against electric shock by de-energizing and grounding the circuits or effectively guarding the circuits by insulation or other means:

In that employees were exposed to energized parts when working to install the copper gas line pipe on the inside of the HVAC unit.

Citation 2 Item 1 **Type of Violation:** **Other-than-Serious** **\$1000**

TDLWD Rule 0800-01-03-.05(1)(a)1: Within eight (8) hours after the death of any employee as a result of a work-related incident, the employer did not report the fatality to the TOSHA Division of the Tennessee Department of Labor and Workforce Development:

In that the fatality of the employee that occurred on 10/4/2021 as a result of injuries sustained during an accident on 9/22/2021 at the jobsite located at 935 Old Hwy 52, was not reported by the employer to the Tennessee Department of Labor and Workforce Development (TOSHA).

Citation 2 Item 2 **Type of Violation:** **Other-than-Serious** **\$200**

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 the in-patient hospitalization of the employee that occurred on 9/22/2021, as the result of an accident, at a jobsite located at 935 Old Hwy 52, was not reported b the employer to the Tennessee Department of Labor and Workforce Development (TOSHA) within 24 hours.

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