Electrocution—Insp # 1615803 Memphis Light Gas & Water-Electrical Distribution

A **49 year old male** employee was electrocuted when his hand came into contact with a pin on an elbow of a 7,200v underground transformer while working to install it in a new subdivision.

On the morning of the accident, a Journeyman Lineman and a Crew Leader arrived at 7407 Barrett Oaks Cove to ring the lines so they could be marked. They also needed to top out the electrical pole by the street so they could run the wire to the underground transformers. Since there was not a bucket truck on site, they had scheduled one to stop by after lunch so they could use it for a few minutes to complete this job. At around 12:30pm, the victim (another Journeyman Lineman) and an Apprentice arrived onsite to let the first lineman use their bucket truck to top off the pole, which includes making a pothead and bringing the electrical wire to the fuse barrel.

While he was up in the bucket, the crew leader began to connect the elbows in the transformers to complete that part of the job. The apprentice and the victim went over to talk with him and were showing the apprentice how the connections had to be made. As they were finishing the work in the first transformer, the victim asked what the lineman was doing up in the bucket, as he noticed that he was getting his stick ready. He had his 2-piece stick in his bucket and that is what would be used to close the switch.

The crew leader then yelled at the lineman while also tapping his chest that he was going to close the circuit from down on the ground. The crew leader said he thought that the lineman acknowledged his instructions/signal. The apprentice stated he was unsure if the lineman acknowledged him or not. The lineman stated that he thought the hand signal that he was given was to go ahead and close the circuit by placing the fuse in the barrel and closing it. So, as the lineman was raising the bucket to close the circuit, the other three men walked to the second transformer to make the final connections before connecting it to the network.

As they got to the transformer, unbeknownst to them, the lineman had closed the circuit and made the wires in the transformers hot. The apprentice asked where they would place the test stick on the elbow to see if an underground transformer was hot. After he asked, the victim bent down and picked up the cable with his right hand and went to show him the pin with his left hand. This is when his hand came in contact with the energized wire and 7200 volts went through his body. The victim fell backward and to the ground. The wire then came in contact with the transformer box and blew the circuit. The crew leader ran to the company truck to call dispatch for emergency help. A fireman happened to be driving down the road at the time and he stopped and helped do CPR until an ambulance arrived and transported Mr. Nowlin to the hospital.

It was determined during the investigation that the employees had received training for this type of work and the employer had procedures in place for working with lines that are both energized and de-energized. The crew leader and the lineman did not hold an adequate job briefing after the victim and the apprentice arrived onsite. The employees were unsure who was going to close the circuit and when. Both of those issues should have been discussed in the briefing. Instead of using tags, they used hand signals that they made up. The use of the hand signals caused confusion as to who was closing the circuit and when.

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.

Violation 1 Item 1 **Type of Violation: Serious $0**

29 CFR 1926.952(b): The briefing did not cover at least the following subjects: Hazards associated with the job, work procedures involved, special precautions, energy-source controls, and personal protective equipment requirements:

On 8/11/22, a job briefing that was held on the Barrett Oaks Cove project after two additional employees arrived onsite did not adequately cover all of the required topics and procedures to be used. The employees were confused as to who was going to close the circuit, what communication would be used (hand signals were used), and when the equipment was to be energized. This lead to an employee being electrocuted.

Violation 1 Item 2 **Type of Violation: Serious $0**

29 CFR 1926.961(c)(13): The employer did not ensure that no one initiates action to reenergize the lines or equipment at a point of disconnection until all protective grounds have been removed, all crews working on the lines or equipment release their clearances, all employees are clear of the lines and equipment, and all protective tags are removed from that point of disconnection:

On 8/11/22, the employer did not ensure that all employees were clear of the underground transformer before the lines were energized. The employees, using hand signals instead of tags, became confused with the hand signals which allowed one employee to think the other employees were ready for him to close the circuit and energize the lines. This resulted in an employee being electrocuted when he touched the 7200-volt line with his hand.