

# **Out-of-State Electrician Electrocuted While Restoring Service at a Personal Residence**

**Incident Number: 08KY065**



**Photo of electrical lines being serviced by electrician. Photograph by KY FACE.**

**Kentucky Fatality Assessment and Control Evaluation Program  
Kentucky Injury Prevention and Research Center  
333 Waller Avenue  
Suite 242  
Lexington, Kentucky 40504  
Phone: 859-323-2981  
Fax: 859-257-3909  
[www.kiprc.uky.edu](http://www.kiprc.uky.edu)**



## **Kentucky Fatality Assessment and Control Evaluation (FACE) Program**

**Incident Number: 08KY065**

**Release Date: September 8, 2011**

**Subject: Out-of-State Electrician Electrocuted While Restoring Service at a Personal Residence**

### **Summary**

On a late summer day in 2008, a 29 year-old male lineman (decedent) was electrocuted while restoring service to a residence. The lineman and three other (out-of-state) employees assisted a local Kentucky power company in restoring power due to outages because of a severe wind storm. The decedent was wearing insulated electrical gloves and sleeves. He was working in an elevated bucket on a live 110 V line when he came in contact with a live wire. A witness saw the decedent shake and slump down in the bucket. The crew brought the bucket to the ground and removed the decedent from the bucket and began to administer first aid. Emergency medical services were contacted. They arrived and transported the decedent to the nearest trauma hospital where he was pronounced dead.

To prevent future occurrences of similar incidents, the following recommendations have been made:

**Recommendation No. 1: Power should be shut-off power at the breakers during service restoration.**

**Recommendation No. 2: Personal protective equipment testing should be performed on a regular schedule.**

**Recommendation No. 3: Insulated gloves and sleeves should be field tested prior to each use.**

### **Background**

The company the decedent worked for provided electrical services to utility companies. Established in 2004, the company employed approximately 47 people. At the time of the incident, the decedent had been employed by the company for approximately 1 ½ years and had taken several classes in safety. There was an established safety culture among the workers and an implemented safety program at the company.

Temperatures on the day of the incident ranged from 60 degrees Fahrenheit to 85 degrees Fahrenheit. There was no recorded precipitation.

## Investigation

The Kentucky Fatality Assessment Control and Evaluation program was notified via online news media of an occupational fatality involving an electrician from out-of-state working in Kentucky. A site visit was made, and photographs were taken. Representatives of the Kentucky Occupational Safety and Health Administration, the electrical company, and an electrical engineer were interviewed. Copies of the police report and the OSHA report were obtained.

One late summer day, a severe windstorm swept through Kentucky. High winds downed trees, and power lines causing loss of electrical service to over 100,000 businesses and residents all across the state. Within a week of the storm, 2,000 electrical contractors from other states arrived to assist local electric companies in restoring power to their customers.

More than 80,000 customers lost power in one community. Within days after the storm, 1,000 out-of-state contractors arrived to assist the local power company in restoring power to their customers. Among these contractors, a four-man crew consisting of a lineman (W1, the decedent), a mechanic (W2), a journeyman (W3), and a mechanic/ grounds man (W4) arrived with all tools and equipment, complete with bucket truck and safety apparatus to help restore power.

On the day of the incident, the work crew began working at approximately 9:00 AM. They breakfasted at a restaurant around 10:00 AM then proceeded to work on restoring power. Later in the day, box lunches were brought to the crew in the field. At approximately 6:00 PM, the work crew took a break at a local corner store. During the break, a female homeowner who lived down the street approached the workers and asked if they could restore power to her home. They explained they had to have a work order and she should contact the utility company and get on the restoration list. She explained she had called and should be on the list. Shortly after this discussion, the work crew received a work order for the woman's address. At 8:15 PM, the crew was restoring power to her home. W1 was elevated in the bucket working to restore power to the woman's home. He was wearing Class 2 rubber insulated sleeves, Class 3 rubber insulated gloves, leather gloves over the rubber gloves, a hard hat, and was utilizing a fall protection harness. W1 had shielded all live electrical lines with insulated covers and was making a hot leg from a 110V line when W4 saw a connector drop to the ground. Another worker saw a spark and W1 remove his left glove and begin to shake. W4 went to retrieve the connector from the ground when he heard W2 and W3 running toward the bucket truck. W4 brought down the bucket and removed the glove from W1's right hand. The three men tried to remove W1 from the bucket. A neighbor saw the men struggling to remove W1 from the bucket and assisted. Cardiopulmonary resuscitation was administered by a member of the crew and emergency medical services (EMS) were contacted. Local law enforcement and EMS arrived who transported W1 to a nearby hospital where attempts to resuscitate him failed.

The sleeves and gloves used by W1 were taken into custody by local law enforcement then given to a Kentucky Occupational Safety and Health representative for testing. Testing results revealed a visible hole in the right glove and a visible hole in the right sleeve.

## **Cause of Death**

The death certificate states the cause of death as due to electrocution during work related activities.

## **Recommendations and Discussions**

### **Recommendation No. 1: Power should be shut-off power at the breakers during service restoration.**

The electrical crew was working on 110 voltage lines, which are considered low voltage. When restoring electrical service to personal residences on 110 voltage lines, it is common practice to not shut off the service at the breaker and work "hot". W1 was the lineman and was the only crew member allowed to shut off power at the breaker. Shutting off power at the breaker would have also cut off power to a neighboring residence. Because of the low voltage, the crew decided to work hot and not inconvenience the neighbor or take time to throw the breaker. It is recommended that even while working on low voltage lines and near personal residences, the breaker should be thrown until all lines are restored to working order. 29 Code of Federal Regulations 1910.333(a)(1) requires that live parts be deenergized before working on or near them unless the deenergizing would cause or create additional hazards. "Deenergized parts" are live parts to which an employee may be exposed shall be deenergized before the employee works on or near them, unless the employer can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be deenergized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

### **Recommendation No. 2: Personal protective equipment testing should be performed on a regular schedule.**

29 Code of Federal Regulation 1910.137(b)(2)(viii) states that electrical personal protective equipment be tested with the frequency stated in Table I-6. The gloves, therefore, were to be inspected every six months, and the sleeves every 12 months. Electrical protective equipment must be maintained in a safe and reliable condition, and 29 Code of Federal Regulation 1910.137(b)(2)(iv) requires insulating equipment that is compromised with a cut, hole, laceration, or tear to be taken out-of-service. Documentation from the company revealed the glove and sleeve were past the inspection date by approximately one month.

### **Recommendation No. 3: Insulated gloves and sleeves should be field tested prior to each use.**

Company safety protocol required insulated gloves and sleeves to be field tested daily prior to use. Field testing consisted of blowing up the gloves and sleeves with air and checked for holes. One witness stated that W1 performed the required field test and both glove and sleeve passed. It is unknown whether the field test was performed once that day or prior to each use. 29 Code of Federal Regulation 1910.137(b)(2)(ii) states "Insulating equipment shall be inspected for

damage before each day's use and immediately following any incident that can reasonably be suspected of having caused damage. Insulating gloves shall be given an air test, along with the inspection.” This incident occurred at the end of the day after the crew had taken a break. Gloves and sleeves should be field tested prior to each use to ensure the material has not been compromised between jobs. After the incident occurred, the right glove and sleeve were tested by Kentucky OSHA in a lab. Testing results revealed a hole in the right glove and a hole in the right sleeve.

## **Keywords**

Class 3 Rubber insulated gloves  
Class 2 Rubber insulated sleeves

## **References**

29 CFR 1910.333(a)(1)  
29 CFR 1910.137(b)(1)  
29 CFR 1910.137(b)(2)(iv)  
29 CFR 1910.137(b)(2)(viii)  
OSHA Electric Topic Page: <http://www.osha.gov/SLTC/electrical/index.html>.

## **Acknowledgements**

Electrical engineer  
Kentucky Occupational Safety and Health Administration representative

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