

Turn Up the Juice

A Live Line Demonstration



Team Members:

Barb Garringer, Jay Linder, David Dohner, Mike Whitaker

Introduction

Electricity is a necessity in our modern world. It is the one constant in everyone's life that provides the amenities we have grown accustomed to. Many people take the luxury of electricity for granted, which can be expected. It is, for the most part, a constant that most people do not think about until it is gone. According to the US Census (2024) over 80,000 residents live on the 554 square miles that make up Kosciusko County. From Syracuse to Silver Lake and Etna Green to Pierceton, electricity flows through power lines on electric utility poles and buried power lines. Through backyards and alleyways, over our garages and business, and most people are unaware. Electricity is great until it becomes dangerous due to unforeseen circumstances like auto accidents, storms, falling trees, and many weather-related issues. The dependency on electricity has foreshadowed the dangers that can come with it. The public needs to be educated to protect themselves from various electricity-related issues. This is why The Live Line Trailer was developed and built by Kosciusko REMC.

Background

The Live Line Trailer built by Kosciusko REMC in 2024 is mainly used to give educational demonstrations at special events such as Family Safety Day, Camp Hero, and many other events where the public gathers. While giving the demonstrations, it became apparent that the electrical safety programs once offered to our elementary school children were no longer available. In the 1980s, there was a good chance that kids watching Saturday morning cartoons would have watched a commercial with Louie the Lightning Bug. Alabama News Center states that Louie the Lightning Bug was created in 1983. (2023) He was a lightning bug with a light bulb for a body singing a song that said, "You never fly your kite where power lines go, and you never climb trees near power lines." Local REMCs used Willie Wiredhand to promote electrical safety among young

children. Private companies like NIPSCO and member-owned cooperatives like REMC presented programs to elementary children, but they eventually faded away.

Problem

Each year, approximately 2,400 children suffer severe shock and burn, according to the Indiana Electric Cooperatives (2016). The National Library of Medicine states that “childhood deaths due to electrocution are rare and are more likely to occur when children are playing around electrical wires or equipment, and often result from either faulty apparatus, or a lack of understanding of the potential dangers involved.”(1992) Educational programs are not tailored toward younger children in elementary schools but more so for the average adult, even though adult electrical deaths are uncommon. The local elementary schools’ basic electrical teachings start in the fourth grade. These basic electrical teachings cover the two fundamental types of electrical circuits, in series and parallel. This is mainly how switches and outlets in your home work. Turn the light switch on, and the light comes on. Plug the phone charger into the outlet, and the phone starts charging. These educational opportunities do not discuss or educate about the dangers of electricity. They do not discuss the difference in measurable voltages from outside the home, which is 7200 volts, to inside the home, where the voltage measures 120/240 volts. Working to build a lasting relationship with the local schools will allow both parties to educate the youth about the dangers and basic properties of electricity together. If a student watching the live line demonstration can avoid one serious accident or death, the program is worth it.

Solution

Invite the local fourth-grade classes from the elementary schools to Kosciusko REMC to watch a presentation of the live line demonstration. For the schools that would prefer the live line demonstration to come to their school, a brief inspection must be done first to determine if there is an electrical hook-up for the trailer. If possible, the demonstration can then be scheduled for a later date. The schools that want to come to KREMC will bus the kids to REMC, where they will be given a quick tour of the facility to see some of the equipment used to maintain the electric grid. During the tour, a brief Q&A about the equipment will be provided. The kids will then sit on the floor in front of the live line demonstration trailer. The presentation starts, and the action begins. The kids will experience some of the dangers of working with electricity and what can occur if you are not paying attention when electric lines are overhead. Trained linemen use tools used by electrical linemen to demonstrate the dangers, what those dangers look like, and what occurs when an electrical fault occurs on the power line. An electrical fault is an abnormal condition in an electrical system that disrupts or impairs its normal operation, potentially leading to equipment damage, safety hazards, or power outages. The kids will also be made aware of the dangers of low-voltage electricity inside their homes.

Conclusion

Electricity is a necessity in our modern world, and life would not exist as it does now without it. We depend on electricity and do not think about it much until it is gone, and we cannot live our everyday lives. Educational programs designed in the past to educate our youth have disappeared. Other than basic electrical circuit education, the average elementary student does not understand the dangers of electricity. To educate the public and focus on the youth in our county's elementary schools, the live line demonstration trailer was built by linemen at Kosciusko REMC. The goal of Turn Up the Juice is to educate as many people in our county as possible while focusing on our county's youth. Giving as many Live Line Demonstrations as possible to hopefully eliminate a serious injury or death.

Sustainability

In addition to the demonstrations that have already been given, Turn Up the Juice would like to continue to grow. Public safety events such as Family Safety Day and Camp Hero will continue to be annual events, and new demonstrations will be implemented at Kosciusko REMC and elementary schools in our county. The initial investment in buying the trailer and the construction of the demonstration side of the trailer has already been completed. Several elementary schools have already requested live line demonstrations for next school year. These demonstrations are possible, but any money awarded would be used to improve the electrical hook up at the elementary schools, like high voltage electrical outlets. This would ensure that no elementary school would be excluded from the demonstration if they could not bus kids to KREMC.

Works Cited

IEC. (2015) Electrical Outlet Safety. IEC Editorial Staff

CDC. (1992) Reports of the Surgeon General. National Library of Medicine

US Census Bureau. (2024) Quick Facts Kosciusko County, Indiana

Alabama News Center. (2023) Alabama Native, Louie the Lightning Bug, turns 40. Sznajderman