

Copper theft threatens electric reliability, safety and lives

Would you risk being hit by lightning for \$100? That seems a bit ludicrous, but desperate times cause folks to do some pretty foolish things.

Across the country, thefts of copper, aluminum and bronze are on the rise at abandoned commercial buildings, construction sites, empty homes and – most dangerously – power lines along rural roads and electric co-op power substations near neighborhoods. In some cases, thieves are putting their lives on the line to steal just a few dol-



lars' worth of wire.

Many law enforcement officials believe that methamphetamine users are responsible for much of the problem. And these aren't victimless crimes: The damage done to the electric power transmission system can pack a big punch, since electric utility equipment can be ruined without the protection copper wires provide.

Copper wire is important to your co-op

Your electric cooperative uses copper to ground equipment, protecting it from electrical surges and lightning by giving electricity a safe path to ground. It also uses a lot of copper wire in substations, where high-voltage electricity arriving from distant power plants is stepped down before it travels to your neighborhood. Then another transformer near your home – mounted either on a utility pole or in a green box on the ground – lowers the voltage again so you can use the power at home. Copper is an essential component every step of the way.

Your co-op's linemen are highly trained professionals who understand the dangers of working with electricity and take proper safety precautions. To protect the public, the co-op surrounds its substations with secure fencing and posts warning signs.

On the other hand, when "in-service" copper is removed or stolen, it can create a potentially deadly hazard to the public and the co-op workers who are called to investigate and/or replace the lost wires. Missing ground wires, for example, can energize various system components that normally aren't energized.

"Electricity can be a silent killer, similar to carbon monoxide," says Jeremy Wilcox, operations manager for Southern Iowa Electric Cooperative, Inc., in Bloomfield. "The danger may be there, and you will not know it until it is too late."

Thieves want to sell the metal for scrap

To a would-be thief, stealing copper wire appears to be a quick way to make

The next target for copper thieves may be just down the road

Iowa's electric cooperatives certainly haven't been exempt from copper thefts. In fact, during the last year or so, many co-ops have been the victims of copper thieves at the cooperatives' facilities or along the side of the road where poles are located.

Here are some examples.

- At the end of last July, thieves simply followed the path of contractors who just had replaced about 40 storm-damaged poles for Harrison County REC in Woodbine – and stripped copper from several of the new poles throughout the cooperative's service territory.
- Last summer at Butler County REC in Allison, burglars cut holes in a

chain-link fence to gain access to the co-op's warehouse, where they loaded one of the co-op's trucks with 89 spools of copper wire and drove away. The truck was found later the same day, with no trace of the stolen copper.

- On the evening of Dec. 6, crooks broke into the Corning warehouse of Southwest Iowa REC, loaded about \$8,000 worth of copper onto one of the co-op's trucks and drove away. The three thieves from Illinois were apprehended a week later in Burlington, Kan., and admitted to the theft. Police found a map of the places they'd robbed or were planning to rob.

As far as anyone knows, there were no injuries associated with any of these burglaries. However, that may not have been the case during a November break-in at a substation near Drakesville, Iowa, owned by Northeast Missouri Electric Power Cooperative, which supplies power to Southern Iowa Electric Cooperative, Inc., and other co-ops in Iowa and Missouri.

According to Southern Iowa Electric's Wilcox, the thief or thieves cut the substation fence in two places and removed the copper ground wire from a section of the fence. The next stop was a regulator, where someone cut the unit's ground wire – possibly resulting in a massive electric arc flash or similar



a buck. Soaring metal prices – and the perception that metal theft is a quick, easy and harmless crime – likely are responsible for an increase in thefts of copper and aluminum, primary components of electric distribution lines.

Needless to say, a 542 percent increase in the price of copper since 2001 has prompted thieves to become bolder and more inventive. Burglars often climb power poles, scale or cut fences, and break into buildings to steal the precious metals.

But the problems go far beyond just the theft of materials. Recent thefts of copper wire and equipment from electric utilities have been responsible for power outages, additional maintenance and expenses, diminished service reliability and, in some cases, serious injury or death.

For example, at an electric co-op in Oklahoma last year, metal thieves took off with about \$100 worth of wire from a substation – but left behind a \$1 million repair bill after a fire destroyed regulators, switches and a \$600,000 transformer. More than 3,500 co-op

members temporarily were left in the dark after the incident, although the co-op moved quickly to reroute power to the affected areas.

In New Mexico, a man was found dead beneath a power pole, electrocuted while trying to cut copper wiring from a live transformer. A Texas perpetrator lost his life when he cut into a live power line while trying to steal copper wire. Similar metal-theft-related deaths have been reported in North Carolina, West Virginia, Illinois and Ohio.

What's the solution?

Stolen wire usually is taken to recycling centers and traded for cash. Although many state laws require recycling centers to keep records of transactions, enforcement can be difficult. Some electric cooperatives stamp copper and aluminum wire with an ID number to deter theft; without identifying marks, stolen wire is hard to track and rarely is recovered.

- You can help prevent these thefts.
- If you notice anything unusual

around co-op facilities such as an open substation gate, open equipment cabinet or hanging wire, immediately call your electric cooperative. If you see anyone other than co-op personnel or contractors around substations or other electric co-op facilities, call the police.

- Install motion-sensor lights and/or video surveillance systems on the outside of your house and business to deter possible thieves.
- Post “No Trespassing” or security system signs around your property.
- Eliminate easy access points to buildings and roofs, such as trees, ladders, scaffolding, dumpsters, and stacks of firewood or construction materials.
- Store tools and wire cutters in a secure location whenever you're not using them.
- If you work in construction, don't leave wires or plumbing unattended or leave loose wire at the job site, especially overnight. ⚡



Photos: Jeremy Wilcox, Southern Iowa Electric Cooperative, Inc.

After cutting two holes in the fence at Northeast Missouri Electric Power Cooperative's substation northwest of Drakesville, the thief or thieves started removing copper ground wire.



A large arc flash or similar event occurred when the thief cut the ground wire on this regulator, burning an 8-inch-wide, 4-inch-deep hole into the concrete under the unit – and likely injuring the perpetrator.



Photo: Jackie Androy, Harrison County REC

The staff at Harrison County REC believes crooks hooked up an SUV or pickup truck to the ground wire on several poles and broke away a 30-foot section of copper wire.

event that burned an 8-inch diameter hole 4 inches deep into the concrete under the regulator!

“Why it didn't kill or severely burn

the perpetrator, I'll never know,” says Wilcox, who also pointed out that local police found no burn victims at any medical facilities in the area.

However, the theft did affect 430 of Southern Iowa Electric's members, who experienced an outage lasting just a little more than an hour. ⚡