

# PENNY POACHERS

Wireless video security making its mark against copper theft

By Keith Jentoft

Duke Energy is using revolutionary wireless video technology to fight copper theft at its substations and operations centers. For those who haven't heard, copper theft is the new epidemic plaguing infrastructure, construction sites and commercial property. Thieves pocket easy cash for something in or on every building—copper.

The Department of Energy estimates that copper theft is now a \$1 billion problem. With copper prices surging from 80 cents to more than \$3 per pound, enterprising criminals have created a new commodity industry supplied by power lines, air conditioners, wiring and plumbing. And thieves are growing more audacious: Repair crews arrived after a storm-caused power outage in Halifax, Nova Scotia, recently to discover almost 10 miles of power lines had been stolen overnight.

## COSTLY LOSSES

Normally copper theft is not so dramatic. In a November 2006 article, "With the Price of Copper Up, the Plumbing Can Go Missing," the New York Times reported, "Though the news media has reported thefts of copper wire from streetlights, electrical substations and cell phone towers across the country, most of it is taken from abandoned homes or homes under construction, usually by drug addicts looking for quick cash."

Unfortunately, victims of copper theft find that the loss of actual copper is not

what is most expensive. The damage done removing \$200 of wire or plumbing often costs thousands of dollars to repair.

"The Gompers Center suffered \$35,000 in damage to its nine air-conditioning units, leaving the 55,000-square-foot facility without air for up to two weeks," said Phoenix Mayor Phil Gordon. "Thirty-five thousand dollars worth of damage. And what did the thieves get? Fifty dollars worth of copper."

Even repair costs do not take into account the increased fire and operational risk when thieves remove copper lighting rods or grounding bars from commercial properties. Much of the risk is found in areas difficult to secure with traditional security systems or CCTV surveillance cameras.

## ELECTRICAL SUBSTATIONS

Substations are an obvious target for copper thieves, so Duke Energy has become an industry leader in substation security. Duke experimented with various options. The company asked its security supplier, USA Security Group of Charlotte, N.C., to combat copper theft in its substations and operations centers.

Traditional sensors had to be used outdoors and created too many false alarms. CCTV was impossible in all but a few areas with power, and even then it was simply too expensive. USA Security worked with RSI Video Technologies to create a substation security solution that met Duke's requirements. The system was built around the Videofied outdoor sensor/camera, in conjunction with a cell-based Videofied panel.

"Motion activates the integrated night vision camera and sends a 10-second video of the intruder over the cell net-

work to the monitoring station and site manager," said Clayton Kemp, founder and owner of USA Security.

This battery-powered solution could be installed anywhere. One of Duke's largest substations—the size of two city blocks—required 40 cameras and took USA Security less than one day to install. Duke finally had a solution that was both effective and affordable.

## CELL TOWERS

Copper theft also has afflicted the communications industry, especially at cell phone towers. Because they are the highest structures in a given area, cell towers are predisposed to take lightning strikes and are designed with large copper grounding plates. If these plates are stolen, the expensive switching equipment housed near the base of the tower is at risk. An ungrounded strike often costs more than \$250,000 to repair, not including the cost to cell service.

Wireless video security has resolved the copper theft issue in cell towers where it has been installed.

"We have been protecting cell towers with Videofied for more than a year and not had a single loss," said Mike Corbuly, vice president of national accounts at SNC, based in Hutchinson, Kan. "We have seen thieves attempting to steal copper, dispatched police and foiled the robbery. Now the police are able to catch the thief."

## A/C UNITS

Air-conditioning coils are other major targets of copper thieves. In 2007, Arizona passed a tougher law specifically aimed at deterring copper theft that has damaged thousands of Arizona air conditioners.

The Arizona Copper Theft Committee, composed of several hundred business owners from across the state, estimated damage of copper theft in Arizona between \$50 million and \$100 million annually. The trouble with securing air-conditioning units is that they are usually outside or in locations that are difficult to supervise. Thieves routinely climb on the roof where they remain out of sight—and where there is no security—and rip out the coils, then toss them to the ground.

The recent theft of a rooftop unit at a major supermarket cost more than \$100,000. The grocer has since installed wireless video security systems. Cooling units in remote communication towers and switching stations also are routinely targeted. Often the replacement unit is stolen as well. These sites are difficult and expensive to secure when what is stolen is on the outside of a building.

New technology makes outdoor wireless video affordable. A new outdoor camera/sensor now exists that operates down to -20 degree Fahrenheit. The system is wireless—every device operates on a single set of batteries for months—and communicates to the monitoring station over the cell network. Obviously, the RF environment around an electrical substation is noisy, yet Duke has found a wireless solution that is reliable.

Today's affordable wireless video products can save businesses and citizens time and money in the fight to avert copper theft.

*Keith Jentoft is the president of RSI Video Technologies.*



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