ELECTRIC LIGHT&POWER

KCP&L Shortens Storm Lengths

by Tom Burke, Kansas City Power & Light

Kansas City Power & Light's (KCP&L's) Bill Herdegen has a plan for trimming the length of storms. He can't stop lightning strikes or wind gusts, but he can control how fast line personnel begin outage repairs.

As vice president of transmission and distribution operations for the Kansas City, Mo.-based utility, Herdegen manages storm preparation and restoration across the utility's 18,000-square-mile service area. He constantly updates the company's Storm Evaluation and Response Plan (SERP), which KCP&L enacted in 1983 after the previous year's storms challenged the company and its resources.

"What makes or breaks you in a storm is first, how fast you get people in to respond to the problems," Herdegen said. "Second, it matters how quickly you get information from the field to determine the resources needed. And, third, getting a handle on what information you can give to stakeholders, such as regulators and the media, regarding how well you're managing the storm."

Author

Tom Burke is superintendant of dispatch operations at Kansas City Power & Light.

Safety First

SERP brings together technology, processes and eyes on the street. Safety is always the first priority. Every restoration begins with a safety briefing and expectation that no one will get hurt. Then, KCP&L obtains field intelligence. For example, two-person SERP crews hit the streets in vehicles once it's safe to traverse pre-determined service area routes. Crews consist of employees with jobs across the company, including attorneys and accountants drafted for storm work. One person keeps his or her eyes on the wheel while the other reports fallen poles, downed wires and the like. They spend no more than two hours investigating damage. This information goes back to the dispatch center or emergency operations center and complements KCP&L's outage reporting system (ORS), which shows managers whether an outage is at the transformer level or even a single house.

Duane Jolliff, KCP&L operations and restoration manager, keeps his eyes on the skies and calls neighboring utilities north and west of KCP&L to augment what technology tells him.

It's important not to take on a bunker mentality where the information to be acted upon comes solely from technology, said Les Boatright, KCP&L emergency response manager.

"There's no replacement for eyes in the field," Boatright said. "With data from our systems and our people, we can take a disciplined approach to making repairs."

For instance, when KCP&L begins restoring power under SERP, it assigns crews to specific circuits or substations vs. geographic areas. This way, utility managers know who's on a circuit and avoid throwing a fuse while people still are working on a line.

Getting line personnel in to restore power after a storm challenges most utilities, Herdegen said. KCP&L often gets called to help other utilities after storm damage. Its crews have learned firsthand that some organizations excel at quick recovery, and others initially face confusion. The key, Herdegen said, is getting work to the people in the field as quickly as possible, thus, shortening the length of the storm. At KCP&L, the storm isn't over until the power is back on for everyone.

Automating Callout

Experts from the University of Missouri have deemed SERP one of the best plans in the industry. Nevertheless, KCP&L debriefs after storms and modifies and improves its storm plan. As the utility reviewed its storm preparation and restoration plan, it zeroed in on callout.

Until a few years ago, callout began when a dispatcher or working foreman combed through a paper list of line personnel. The callout consisted of manually dialing each lineman and determining his or her work availability, Herdegen said.

"As we dissected the callout process, managers asked, 'How long does it take us to do callout this way, and how long does it take line personnel to accept a job?'" Herdegen said.

In some cases, it took up to two hours to start restoring outages. KCP&L automated its callout process with technology from ARCOS Inc. The ARCOS callout and resource management software enabled KCP&L to make hundreds of calls to line personnel in seconds while observing complex union rules governing the order and to whom jobs may be parceled out, Herdegen said.

"We were able to cut 30 minutes off the storm CAIDI process because we were reducing the time it was taking us to call people," he said.

The callout works like this, for example: A storm hits KCP&L's service area, which includes 820,000 customers in 47 northwestern Missouri and eastern Kansas counties.

Utility managers realize it will take 10,000 man-hours to restore power. ARCOS shows that the utility has only 4,000 man-hours of resources available. Managers know immediately to call more people. Any management employee can tap into the automated callout system to see the line personnel list and determine how many internal people are available. The quicker the emergency operations center knows how many people can come in, the quicker Herdegen and his colleagues can determine how much assistance they need from contractors or neighboring utilities.

Too often, utilities focus on compressing the timeframe for fieldwork, Herdegen said. The inclination is to find line work efficiencies, but managers must not overlook ways to trim the time between alerting crews and getting them into their trucks.

Reprinted with revisions to format, from the September/October 2010 edition of **ELECTRIC LIGHT & POWER**

Automating callout and resource management has helped KCP&L cut its time to restore power after storms.

Manage the Work

Another storm preparation and restoration strategy is perfecting how KCP&L dispenses storm-related work, Herdegen said.

"When you've assembled your crews, especially from contractors or neighboring utilities, you have to be good at assigning the work, giving them a ticket and having a scout take them to where the work is," he said. "You don't want any downtime."

Herdegen has a storm-related mantra.

"Manage the work so the work doesn't manage us," he said.

Herdegen said teams should look at planning and execution holistically. For example, focusing too many resources against too few customers or locations delays other restoration work, he said. Herdegen advises four things:

1. Review reports detailing specific materials crews need for specific jobs.
2. Don't let crews leave without the things they need to do their jobs.
3. Ensure crews work the circuits that will bring the most customers back online fastest.
4. Continue scrubbing computer data to eliminate tickets that have been addressed with other work. This dramatically reduces the "OK on arrivals" that normally happen during the end of storms.

Completing steps three and four ensures that the tail of the storm takes less time to clean up, customers are more satisfied and utilities won't waste time and resources.

Posting real-time information to its website has helped KCP&L shave up to 30 percent off call volume it sees during and after storms. Journalists, too, go to the website first instead of lobbing calls the moment weather strikes. The strategy has freed lines for customers reporting outages, Herdegen said.

"Having that real-time information at your fingertips via the website absolutely satisfies customers," he said. "In the past, customers were calling us for information. Internally, we would be calling someone we knew in dispatch for an update. Everyone was getting information from different points of contact."

A Willingness to Improve, Learn

The first driver of customer satisfaction is price and value. The second is reliability. And the third is delivering timely, accurate information, Herdegen said. Consistently providing real-time, accurate information about estimated restoration time has helped KCP&L win a national and regional ReliabilityOne award from PA Consulting Group. The award is a benchmark for outstanding reliability and customer service.

SERP, Herdegen said, works because it employs strategies across the organization and the plan isn't a static document. After a storm passes and power is restored, KCP&L compiles an after-action report. A list of what worked and what didn't comes from the report. Managers edit the plan to reflect what employees learned. The utility also relies on online training, classroom exercises and role-playing to keep its work force familiar with SERP, especially the two-person SERP crews that normally might work outside transmission and distribution.

Rooted in KCP&L's storm preparation and restoration planning is a willingness to look elsewhere for ideas. The utility ranks Florida Power & Light Co. (FPL) near the top for storm preparedness. FPL encounters so many weather issues each year that it has mastered moving people, information and resources in the shortest possible time.

Some coastal utilities are turning to logistics companies that can set up tent cities—complete with restrooms, laundries and cafeterias—in 24 hours to temporarily house line personnel restoring power. KCP&L watches these kinds of industry developments and tries to factor them into its SERP. No matter how strong a utility's storm plan, it must execute the plan well, Herdegen said.

"Sometimes we don't always execute as well as we could, and that impacts how well we mop up after a storm," he said.

When KCP&L falls short in an area, the utility looks for solutions in ways similar to the way it revamped its callout process. KCP&L also trains for the worst. It stages joint drills with cities, counties and the state to learn if its priorities are in sync with those of first responders, Boatright said.

"If money were no object, I'd like to see more dollars spent on regional exercises," he said. "As a publicly traded company, we can't access Homeland Security money. But when we train together for storms, we learn a lot about our systems and the needs out in the community." ELP