



# Overcoming POWER OUTAGE BARRIERS

## 5 ways to reduce crew response times

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North American utilities know that they can always count on power outages to occur. And, it's no secret that utilities have invested billions of dollars in transmission assets (lines and substations) and distribution substations. But, when a line is broken and power fails, restoration depends, in part, on how quickly crews assemble and head for the scene of an outage.

Response time affects reliability and reducing response time is a big part of keeping customers happy. So, here are five ways utility professionals can reduce response time, speed up restoration and shrink Customer Average Interruption Duration Index (CAIDI).

## IMPROVE SYSTEM READINESS

### #1 KEEP CALLOUT LISTS UP TO DATE

One imperative factor in reducing crew response time is keep callout lists up to date. And, make sure to have multiple ways (home phone, mobile phone, text and pager) to reach all line personnel. Another hallmark of system readiness is filtering your callout lists by job classification, which makes it faster to assemble specific crew members.

In September 2010, American Electric Power (AEP), one of the United States' largest generators of electricity, decided to automate its callout process, as part of their efforts to improve outage response times following the devastation left by Hurricane Ike in 2008.

"We've been studying how we can improve our service restoration for the past five years to improve reliability affecting CAIDI, or customer average interruption duration index," said Jim Nowak, Emergency Restoration Planning Manager for AEP. CAIDI is measured in units of time, often minutes or hours. It is usually measured over the course of a year, and according to the Institute of Electrical and

Electronics Engineers' (IEEE) Standard 1366-1998, the IEEE Guide for Electric Power Distribution Reliability Indices, the median value for North American utilities is approximately 1.36 hours.

AEP's automated callout system links dispatchers across 11 states and seven operating units, all available to initiate a callout for crews to restore power.

"Conservatively speaking, we can achieve a five to 10 minute reduction in CAIDI with our automated callout system when calling out a four-person service crew for restoration work," says Nowak. "When we have to call multiple people, multiple crews, the time savings really adds up."

### #2 KEEP CURRENT ON EMPLOYEE STATUS

Monitor the real-time status of your workforce. Dispatchers waste time if they're calling crew members who are on sick leave, vacation, rest or at training. If a crew that has been on the scene of an outage all night doesn't inform their supervisor the next morning, then their colleagues are left wondering if they are available for work, on the job or resting. Diligently monitoring employee status eliminates the "morning shuffle."

"Getting crews to an outage is all about safety, reliability and customer service," says Bill Herdegen, vice president of transmission and distribution for Kansas City Power & Light's service area. "And, with our old manual callout system, our CAIDI (response time) was sometimes two hours or more to send out crews, manually dialing and sometimes redialing crews who were on-call."

After automating its callout process, KCP&L was able to use its resources more cost-efficiently and more effectively. "We had working foremen dialing the phone, trying to locate crews to go to a call," says Herdegen. "Those were the people we needed working in the field, not sitting at the phone."

KCP&L's crew callout system became more effective when their system became automated: 30 minutes were shaved off the average response time of one hour and 10 minutes.

### #3 ENSURE LISTS FOLLOW UNION RULES

Don't create more work—and risk a union grievance—because you've assembled line crews in the wrong order. Construct your callout lists to mirror your union agreements, and make sure dispatchers have the latest copy to work from.

KCP&L incorporated union agreements into their automated callout process, which reduced many problems. "Each person must punch '1' on their phone when they are called to acknowledge the call," says Herdegen. "Now those employees can't say that they were not phoned for a call when their turn came up—it's on the record. We have fewer grievances from the union on this now."

### #4 TURBOCHARGE CALLS MODERATELY

While it's important to quickly work your callout list, it's equally important not to have crews accepting a callout when they're not needed. With a manual system in place, dispatchers or supervisors will be calling dozens or hundreds of available line personnel, so they'll have to coordinate calls to avoid overfill. There are "dumb dialers" on the market that call a list of phone numbers automatically—but be careful. These dialers don't take into account work rules and employee responses. Furthermore, automated dialers don't know when to stop making calls, which can lead to overfilling a callout and ultimately paying for more people than you need. If you want speed plus insurance against overfilling a callout, consider automated callout systems.

**TIP:** Once an outage crew call comes in, use your automated callout system to dial available crews—hundreds of personnel—from the database in a matter of seconds, factoring in each crew member's status and seniority.

### #5 REPORT ON RESPONSE TIME

Keep track of how long it takes to fill a callout. Put together a manual or automated process for tracking who is agreeing to take callouts and who isn't. Once a supervisor begins keeping this sort of information on file—and line workers see who is agreeing to calls—you'll see a positive bump in callout acceptance.

According to one executive with Southern Company, before the utility switched to an automated callout system, some line personnel would say, "I don't really want to go now, but if you can't find anyone—call me back." That meant sometimes going through the list twice just to gather a crew together, which took more time for restoration.

Reporting on response time or automating callout can cause an initial reluctance, however, eventually personnel will get use to the automated system.

In 2002, a utility in the southern United States had a SAIDI (sum of all customer interruption durations) average of 198 hours. After automating its callout process, the utility reduced that number in 2010 to 118 hours. The executives at this southern U.S. utility say they've realized a savings of two man years per year (on callouts)—not to mention a savings in the duration (response times).

There are more than five ways to reduce response time, of course. But, underlying the ideas here is the fact that an emergency response process works most efficiently when a utility is constantly editing and measuring its callout. While manual methods can show some incremental improvement, automating the callout process is where most utilities have seen the greatest improvement.

Making callout lists centrally available, including current employee status and automating the time-consuming callout process leads to improved system readiness and shorter response time.

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**Decrease outage times with automatic callouts**