

# CoServ Electric Uses Exacter Predictive Technology to Identify Impact of Massive Lightning Storms



## Summary

- CoServ took SAIDI from 92 to 35 in several years time
- Average 4 million lightning strikes per year
- Exacter found over 30 failed lightning arresters in 180 miles in areas already patrolled & investigated
- Because of lightning, Exacter found 1 deteriorated component every 2.7 miles
- Exacter survey prevented over 500,000 Customer Minutes of Interruption (CMI)

## An Integrated Reliability Program Takes SAIDI from 92 to 35

CoServ Electric began a unique, integrated systems approach to improving system reliability in 2011. Two years after initial field investigations of some of the most significant outage sites, they have reduced system SAIDI from approximately 92 to 35. After mitigating the more overt points of weakness on their system, CoServ discussed what needed to be done to maintain this level of quality and reliability and try to push the number down even further. Reliability Manager Brian Flage believed that CoServ needed to use predictive methods to identify at-risk conditions and elements that could represent the next generation of outages.

## Davey Tree Brings a Predictive Reliability Solution

In 2015, Davey Tree introduced CoServ to its strategic partner, Exacter, Inc. of Columbus, Ohio, a provider of predictive overhead health assessments. "It was May 2015 and we were in the middle of the worst lightning storm season in CoServ's history. I was particularly interested in how our lightning defenses were holding up," Flage said. "For the pilot program with Exacter,

I assigned them some of our newer circuits in densely populated areas to see if they could find any unseen problems."

Using patented sensors, Exacter surveyed 180 miles of 3-phase circuits in some of the more densely populated areas of the system to help identify locations with conditions indicating at-risk potential for a power outage or equipment failure.

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**Brian Flage,**  
*Reliability Manager, CoServ Electric*

The results from the Exacter survey were both surprising and insightful to CoServ. It was surprising because the areas surveyed were parts of the system recently rebuilt. Some of the locations were in places the company had done in-depth visual investigations. "At several locations identified by Exacter we had done extensive on-the-ground forensic studies of lightning arresters and grounds," Flage said. "Exacter found failed and failing arresters that were showing no visual signs of problems."

## What Exacter Found

Exacter found 67 problematic conditions on 67 poles – approximately one problem every 100 poles. 48 percent of the findings were insulators, 40 percent were lightning arresters, and Exacter also identified two transformers that were arcing. Typically, Exacter will find one problematic location approximately every 8 miles. For CoServ, they found one problematic condition every 2.7 miles. The reason behind the high number of findings was a record 4 million lightning strikes during the month of May, which is more lightning strikes than CoServ experienced in 2013 and 2014 combined. Flage

said the lightning arresters interested CoServ the most "because they are our defense-shield against the many storms we have."

Armed with the Exacter data and locations of problematic equipment, CoServ was able to remove and replace the degraded components and fortify those locations before any further outages occurred.

## A Predictive Tool to Stay Ahead of Problems

When the survey was over, Brian Flage was excited by the new opportunities for predictive maintenance using Exacter technology. He sees the technology as an excellent tool for proactively maintaining continuous improvement on the system and eliminating points of risk and weakness.

Exacter's ability to identify deteriorating overhead equipment in a quick manner over large geographic areas has been an effective means for utilities to stay ahead of outages and make their systems more resilient to storms.

**CoServ has estimated that the assessment data provided by Exacter in the heavily populated area had the potential of preventing over 500,000 customer minutes of interruption.**

"Having the Exacter field intelligence on deteriorating equipment is a game changer for utilities like CoServ that are data-driven," he said. "It's the difference of working smart versus just working. This kind of information helps keep costs down and improves the quality of service to members at the same time."

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