

City of Westerville, OH Uses Exacter Technology to Predict Potential Problems & Improve System Reliability



Summary

- Exacter found problem that would have taken out 80% of the city's electric
- Exacter identified burning cross arm that would have taken out 551 customers
- Exacter found recurring flicker problem that had been going on for months
- Westerville has used Exacter for 10 years

In 2007, Exacter performed multiple patrols of the city's 135 miles of overhead distribution in its first year of service to Westerville. In its first full survey, Exacter identified 43 locations exhibiting failure signatures. The Westerville field crews were initially skeptical because at most of the locations there were no visible signs of failure. However, after investigation at some of the sites, real problems became apparent. In addition, the crews were involved in verifying arcing at each pole location using ultrasonic technology. As each location was visited, they began to open-up to the idea that this new technology could be a useful new tool in their toolbox.

“While preventing outages is a tangible benefit, the Exacter system is more of a strategic information tool.”

Andrew Boatright,
*Electric Utility Manager
for The City of Westerville, OH*

One of the locations identified was a 69-kV transition from overhead to underground

that serves five of Westerville's six substations. Some minor arcing was identified at the interconnection. After locating the site, Westerville field crews discovered one of the arrestor leads was completely burned and the other two were in the process of burning! The source of the problem was a cable shield strap that attached just below the termination. It had broken loose and was blowing around in the wind. When it made contact with the arrestor lead, it formed a circuit, which caused the burning. This was an imminent failure that would have taken out 80% of the city's electrical system and would have resulted in a significant rebuild.

“Achieving reliability is still an inexact science, but with tools like this, utilities can get a much clearer picture of what is happening on their systems.”

Exacter Finds a Smoking Cross Arm

At another location identified by Exacter, the Westerville crew immediately noticed smoke coming from the cross arm brace. Here, one of the aluminum cap dead-end insulator bells had failed. After isolating the component, the smoking stopped. Had they not been alerted to the condition, the cross arm would have burned in two, causing an outage impacting 551 customers.

A Hard-to-Find Flickering Issue

Several months into the Exacter process, Westerville started receiving a significant amount of customer complaints about a recurring flicker problem. The utility sent

technicians out several times over a two month period into the area, but could not locate the source of the flickering.

The field superintendent suggested reviewing some of the previous Exacter survey field data to see if any problems were located in that area. Sure enough, Exacter had identified a condition on the problematic circuit. It was a stinger (a conductor wire that attached equipment to the distribution feeder) that had a hard to find intermittent connection causing the issue. The repair was made, and the customer complaints disappeared.

For more than ten years the City of Westerville has continued to use Exacter technology as a means for predicting at-risk conditions on their overhead distribution system. It remains one of the standard reliability-improvement tools for the city.

