



Case Study:

Fast Outage Response with the TWACS Power-line Communications Technology

Lake Country Power, Minnesota

In rural Minnesota, where many residents own cabins in remote locations, an extended power outage can spell disaster. Delays in outage reporting combined with long travel times for response crews can result in frozen pipes and ruined vacations.

As the largest energy cooperative in Minnesota, providing electricity to 43,000 members in the northern region of the state, Lake Country Power (LCP) possesses a keen insight into the importance of efficiently managing power outages in rural communities. LCP uses Aclara's Fault Detection and Localization (FD&L) solution to increase outage visibility and improve outage response time for its customers.

LCP's service territory, which spans just under 11,000 square miles, receives heavy snow accumulations in the winter and powerful windstorms in the summer. These storms can be severe, often knocking down large trees, which Ryan Ferguson, senior engineer of metering and SCADA at LCP, estimates cause 70% of outages in the region.

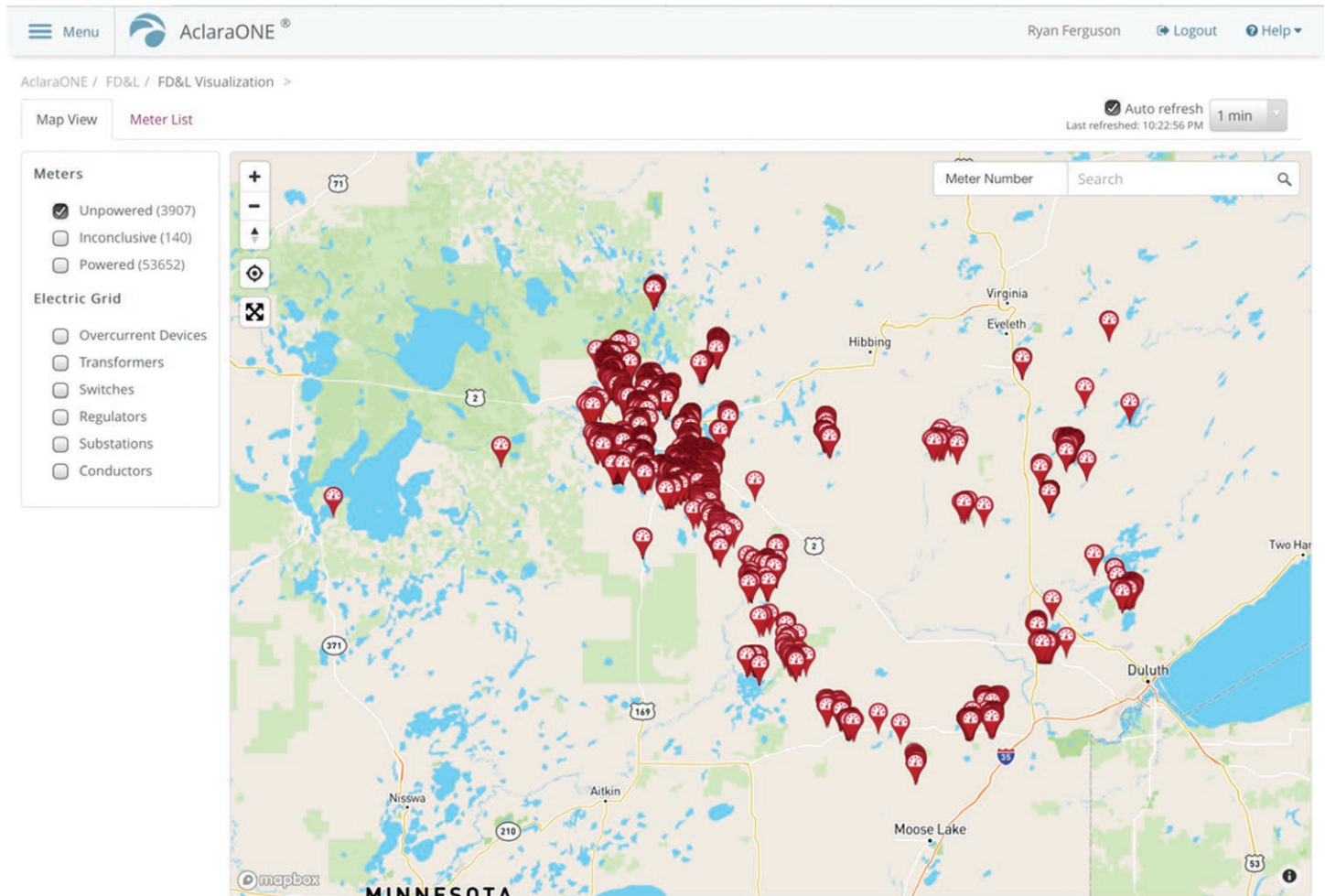
Business Challenge

While LCP had provided reliable power to regions in Minnesota for years, the company recognized the need for an upgraded response solution that would enable them to identify outages faster. "We have many seasonal members with a lot of lake cabins. Historically, cabin owners would drive up from the Twin Cities only to realize they are without power at their cabins," explains Ferguson.

Ferguson and his team sought a solution that would enable them to identify outages faster, reduce response time, and improve communication around restoration status. After researching and surveying potential partners, an eight-member committee from LCP traveled to see Aclara's FD&L system firsthand at a utility in North Carolina. Impressed by the system, the team decided to implement the outage management solution for their own customers.

Case Study:

Fast Outage Response with the TWACS Power-line Communications Technology Lake Country Power, Minnesota



The FD&L Dashboard shows the location of unpowered meters in LCP's region.

Solution Overview

The FD&L solution identifies faults on the Aclara two-way communications system (TWACS), which is an advanced metering infrastructure (AMI) solution that operates on the cooperative's power lines. FD&L is a module in AclaraONE® software that performs essential functions such as network management, distribution, operations, and analytics for TWACS.

AclaraONE collects critical meter data from TWACS, and the FD&L module employs sophisticated algorithms to determine when and how often meters should be pinged. During restoration, meters are pinged as often as every five seconds to identify the scope and duration of the outage. This frequent pinging enables cooperatives to quickly identify and handle nested outages that occur when power is restored for some residents but remains disabled for others due to unnoticed damage.

LCP also utilizes the AclaraONE software app's network management, distribution operations, and analytics functions to improve the technical operation of their grid.

FD&L offers insight into 100% of meters that are not communicating, a significant upgrade over other industry solutions that may provide visibility of less than 80% of meters that are out, explains Jeff Little, Hubbell Director of Product Management. The system's frequent pinging capabilities enable Ferguson and his team to find nested outages immediately, whereas other programs make it difficult to locate and restore clustered outages. "Within an hour we are going to know the full extent of what is not communicating. That really allows us to have an idea right out the gate of what we are up against," explains Ferguson.

Case Study:

Fast Outage Response with the TWACS Power-line Communications Technology Lake Country Power, Minnesota



FD&L was able to detect an outage at this rural Minnesota cabin where responding linemen found an unreported home explosion due to a propane leak.

Business Justification

The LCP team and its members have reaped the benefits of FD&L since 2019, including saving valuable time and energy by restoring communication and power simultaneously. Whereas other solutions require line workers to repair power and communication separately, FD&L automatically restores communication capabilities when power is turned back on.

Lake Country Power continues to be an active user of Aclara's FD&L software, utilizing the technology to identify outages faster, reduce response time, and improve communication regarding restoration statuses. The FD&L system's map updates in real-time as power is restored, displaying a precise picture of how an outage is affecting a particular area.

Aclara's FD&L software utilizes patent-pending algorithms to detect when a fault occurs, eliminating reliance on customer calls to notify LCP of an outage. The precision of the system's data visualization tools and real time mapping have helped the LCP team capture more accurate information on outages. This data, which includes details on affected lines, circuits, and meters, has



Case Study:

Fast Outage Response with the TWACS Power-line Communications Technology Lake Country Power, Minnesota

enabled LCP to respond to outages more efficiently, even before customers can call them in.

As Ferguson and his team continue to work with FD&L, they are excited about its ability to provide further insight into power outages in rural areas as the system continues to expand its capabilities. “We’re seeing the additional improvements and enhancements we’re looking for come to life,” shares Ferguson.

For an in-depth view into how Aclara’s FD&L system works, or if you’re interested in learning more about FD&L and other solutions, please contact our sales team today at 1-800-297-2728 for a demo.



FD&L enables LCP to quickly react to poles downed by storms, like the one pictured above.



A proud member of the Hubbell family.

©2024 Aclara. All rights reserved.
Hubbell and the Hubbell logo are registered trademarks or trademarks of Hubbell Incorporated. All other trademarks are the property of their respective owners.
Aclara.com | info@aclara.com | 800-297-2728

ACL-ACL-CH-EN-01673 | 03/2024

