

Power Quality & Outage Notification Solution

Marietta Power



Company Profile

As the largest municipal electric utility in Georgia, Marietta Power is a community-owned utility serving over 45,000 electric customers. It was created by the City of Marietta in 1906 to provide low cost electric power to the citizens of Marietta and Cobb County. Marietta Power's mission is to provide high-quality, reliable and competitive electric services to its growing customer base. Marietta Power is a member of the American Public Power Association (APPA).

Needs

To enhance overall system reliability, Marietta Power wanted a system that could report steady state voltages and over/under voltage events from key points on their electric distribution system. In addition, distribution operations wanted automated outage reporting from these key points to supplement information from their existing SCADA and Outage Management System. By combining down-line power quality data with existing substation information – Marietta could achieve better real-time monitoring of their distribution system status.

Marietta Power's project goals were:

- Improve customer service
- Enhanced system reliability thru real-time power quality and outage monitoring at key distribution feeder points
- Enhanced responsiveness to power disruptions and quality issues thru automated systems that notify operations personnel with timely information
- An economical system that is easy to deploy and manage
- An interface to Marietta Power's SCADA system and the existing Outage Management System

Marietta Power sought a two-way communications solution that would be reliable, cost effective and work throughout their service territory. Marietta Power investigated several options before selecting a solution from Telemetric Corporation.



Solution

Marietta Power deployed over sixty Telemetric Voltage Monitors (TVM3) to monitor three phase voltage on their 12.47 kV distribution system. The TVM3 units were placed, primarily, at the end of feeders to monitor end-of-line voltage. The TVM3 units were connected to the 120V secondary of three phase transformers near the end of each distribution feeder. A few TVM3 units were placed at the first convenient three phase transformer from the substation.

The TVM3 monitors three phase line voltages and provides real-time notifications of steady state voltage, momentary/permanent outages and under / over voltage conditions. The TVM3 has user-programmable intelligence for power quality set points. The TVM3 is available for either 208Y/120V or 480Y/277V three phase secondaries.

Each TVM3 includes an integrated two-way cellular radio that communicates over the control channels of the cellular data networks, with coverage available to over 98% of the population in North America. The TVM3 units were easy to deploy, with no additional radio equipment, license or local cellular accounts required.

Marietta Power engineering and operations personnel use Telemetric's suite of Web-based applications to setup and manage the TVM3 devices. Engineers and operations personnel use the Telemetric applications to view both current and historical TVM3 data, as well as setup automated alarm condition reports that are sent via e-mail, pager or text message. With automated reporting of outages or OV/UV conditions at the feeder level – Marietta Power personnel get near real-time information on system problems and can quickly dispatch crews to needed locations.

Marietta Power also implemented Telemetric's SCADA-Xchange software to deliver TVM3 voltage reports and alarm data to the SCADA system via a standard DNP3.0 interface. This allows system operators to have access to selected TVM3 data at their workstation or terminal.

All of this distribution automation data will ultimately funnel, through the existing SCADA system, to Marietta Power's Outage Management System. This integration will expedite system reconfiguration and restoration when outages occur.

Benefits

- Marietta Power operations personnel have a more complete view of the distribution system status at the feeder level
- Operations personnel can respond more rapidly to power disruptions or power quality issues thru automated alarm reports with more accurate data
- Immediate notification of Over Voltage or Under Voltage conditions, thus improving responsiveness to potential system problems
- Improved system reliability (SAIDI and CAIDI) because of more timely information that allows faster response to system disruptions

Future Plans

With the Telemetric intelligent remote monitoring systems and software, Marietta Power was able to obtain valuable information about conditions on their distribution feeders. Marietta plans to automate 10% of their gang operated distribution switches each year using Telemetric wireless MicroRTU's. In addition, Telemetric Remote Telemetry Modules will be used to communicate with existing and planned distribution line reclosers. With large urban redevelopment projects ongoing, Marietta is installing submersible switchgear with motor operators on all switches or interrupters. This switchgear will be automated through the use of Telemetric products as well.