

Power Quality & Outage Notification Solution

Buckeye Power, Inc.

Company Profile

Buckeye Power, Inc. is the wholesale power supplier for the 25 electric distribution cooperatives operating in Ohio. The 25 cooperatives combined serve more than 380,000 homes and businesses in 77 of Ohio's 88 counties. This combined service territory covers about 40 percent of Ohio's land area, including a majority of the state's rural sections. It is in this area that Ohio's major source of agricultural business is produced for the state's population, as well as a large export market.

Needs

To enhance system reliability, Buckeye Power wanted a system that could report outages from the more than 330 delivery points on their system. In addition, operations wanted power quality information from the delivery points as well. By combining outage data with power quality information Buckeye could achieve better real-time monitoring of the delivery points on their system.

Buckeye Power's project goals were:

- Improve service to member cooperatives and their ultimate customers
- Enhanced system reliability thru real-time outage monitoring at all delivery points on their system
- Ability to obtain power quality information such as over and under voltage events
- An automated system that notifies operations personnel with timely information and documents the events
- Ability to share alarms and data with member cooperatives
- An economical system that is easy to deploy and manage
- Capability to interface to Buckeye's SCADA system in the future

Buckeye Power sought a two-way communications solution that would be simple to install and setup, reliable, cost effective and work throughout their

Buckeye Power

service territory. Buckeye investigated several options before selecting a solution from Telemetric Corporation.

Solution

Buckeye Power deployed over 330 Telemetric Voltage Monitors (TVM3) to monitor three phase voltage at the delivery points on their system. The TVM3 units were placed in substations with the input source coming from voltage regulators or bus PT's. To facilitate future maintenance work Buckeye installed safety switches between the TVM3 units and the input source as shown in the pictures.



For 12 kV delivery points a bank of 1.5kVA transformers were installed and the TVM3 was mounted on the pole. At some delivery points where an overhead transformer already existed they simply added two additional 1.5kVA units and used the secondary from the existing unit to minimize the cost of the installation.



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 simple to setup and install, with no additional radio equipment, license or local cellular accounts required.



Buckeye Power engineering and operations personnel use Telemetric's suite of Web-based applications to setup and manage the TVM3 devices. All configurations are remotely programmable. Engineers and operations personnel use the Telemetric applications to view both current and historical TVM3 data. They are able to setup automated alarm condition reports that are sent via e-mail, pager or text message. The messages are sent simultaneously to Buckeye personnel and the member cooperative responsible for the delivery point involved. With automated reporting of outages or OV/UV conditions at their delivery points – Buckeye Power personnel and member cooperatives get near real-time information on system problems and can quickly dispatch crews to needed locations.

Buckeye Power did not implement Telemetric's SCADA-Xchange™ software to deliver TVM3 outage reports and alarm data to their SCADA system, but the application can be implemented at any time in the future. The application allows system operators to have access to selected TVM3 data at their workstation or terminal.



Benefits

- Enhanced system reliability thru real-time outage monitoring at all delivery points on their system
- Engineering and operations personnel have the ability to obtain power quality information such as over and under voltage events at their delivery points
- 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
- Improve service to member cooperatives and their ultimate customers
- An automated system that notifies operations personnel with timely information and documents the events
- Ability to share alarms and data with member cooperatives
- An economical system that is easy to deploy and manage