

# Recloser Communication Solution

## PPL Electric Utilities



### Company Profile

PPL Electric Utilities Corporation, a subsidiary of PPL Corporation that provides electricity delivery services to about 1.4 million customers in Pennsylvania, has consistently ranked among the best companies for customer service in the United States. PPL Corporation, headquartered in Allentown, Pa., controls more than 11,000 megawatts of generating capacity in the United States, sells energy in key U.S. markets and delivers electricity to more than 5 million customers in Pennsylvania, the United Kingdom and Latin America.

### Needs

PPL Electric Utilities has utilized electronic controlled reclosers for several years to improve system reliability and minimize customer interruptions. Line and tie-point recloser installations have grown steadily at PPL Electric Utilities. The company has deployed Cooper Form 4C and the newer Cooper Form 6 recloser controls. Some of the Cooper Form 4C controls had analog wireless modems, which were becoming obsolete and expensive to maintain. PPL Electric Utilities wanted a solution to provide reliable, cost-effective communications to all line reclosers.

PPL Electric Utilities wanted:

- A solution to provide wireless two-way communication with Cooper Form 4C reclosers using Cooper 2179 protocol.
- A solution to provide two-way communication with Cooper Form 6 recloser controls using the DNP3.0 protocol.
- Notification of events such as recloser open/close, momentary events, and alarms.
- A wireless solution with broad coverage across its entire operating geography, with minimal investment in infrastructure.
- An economical system that was easy to deploy and manage.
- The ability to implement a standard DNP3.0 interface to the SCADA system.

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



**Cooper Recloser on overhead feeder**

### Solution

PPL Electric Utilities deployed Telemetric Remote Telemetry Modules (RTMs) on Cooper Form 4C and Form 6 recloser controls installed at mid and tie-points along distribution feeders.

The Telemetric Remote Telemetry Module™ (RTM) is an intelligent wireless communication solution for remote monitoring and control of electronic controls (IEDs). In addition to support of standard polling, the RTM's processor monitors the recloser's status and provides report-by-exception or time-scheduled reports of any analog or digital points in the Cooper recloser control. This allowed engineers to create a powerful, yet efficient monitoring and control solution.



The RTM includes an integrated digital cellular radio that communicates using the GSM cellular data network, with extensive coverage throughout North America. Since the RTM uses the digital GSM cellular network, no additional wireless infrastructure is required. Technicians could install the RTM in the recloser control and be communicating in minutes.

The Telemetric RTM is available with native support for either DNP3.0 protocol or Cooper 2179 (also known as PG&E protocol). PPL Electric Utilities used DNP3.0 on the Cooper Form 6 reclosers and Cooper 2179 protocol on the Cooper 4C reclosers. In both cases, the RTM acts as an intelligent mini-master, looking for alarms or exception reports based upon customer-defined rules, and reporting these events via the digital network. Telemetric assisted PPL Electric Utilities engineers to create an RTM profile for each Cooper recloser control that met application requirements. The intelligent protocol support in the RTM resulted in a powerful and efficient control application that was very cost-effective.



Cooper Form 4C with Telemetric RTM Installation

Engineering and operations personnel use Telemetric's suite of Web-based applications to set up and manage the RTM devices, to view both current and historical recloser operations data, and to set up automated alarm condition reports that are sent via e-mail, pager or text message. With automated reporting of recloser operations or alarm conditions – PPL Electric Utilities gets near real-time information on distribution feeder problems and can quickly operate the reclosers, or dispatch crews to needed locations.

PPL Electric Utilities also implemented Telemetric's SCADA-Xchange™ software to integrate status and control of the Cooper reclosers into the SCADA system via a standard DNP3.0 interface. This integration will give operators the ability to see feeder level recloser status and operate the reclosers from SCADA. In addition, load data from the line reclosers will be provided to operators to give them a better picture of feeder loads.

### Benefits

- Operations personnel can now monitor and control line reclosers in the operations center, responding more rapidly to distribution feeder events.
- Engineers use the Telemetric web-based applications to view operations history and other historical data available via DNP or Cooper 2179 protocol.
- Engineers can access load data from line reclosers for system planning.
- Improved system reliability (SAIDI and CAIDI) because of more timely information that allows faster response to system disruptions.
- Ability to query any analog or digital settings on the recloser at any time.