



## Success Story: Electrical Monitoring System

### CLIENT BACKGROUND

The University of Delaware, Newark, Delaware.

The University's electrical distribution system, which feeds the majority of the campus, is operated by a local municipal utility. When the University expressed interest in reducing its overall energy costs, Enerwise installed an electrical monitoring system consisting of 15 supervisory control and data acquisition (SCADA) meters.

### SCOPE OF WORK

After being selected from among six competitors, Enerwise entered into an agreement with the University and the local municipality to design, commission, and maintain a monitoring system comprised of 15 metering devices and related on-site monitoring software. A major challenge was the fact that these devices were spread over 5 square miles. Enerwise designed a unique telemetering system to implement state-of-the-art Spread Spectrum radio frequency (RF) technology to create a single virtual metering point. The system subsequently expanded to include several devices at the distribution level. As a result, 21 electrical utility billing accounts were aggregated.

Enerwise later linked the metering devices to its web-based energy information management system (Enerwise Energy Manager) to enable the University to nominate and monitor historical gas usage at six locations. In addition, the University gained campuswide power quality and electrical consumption monitoring and reporting capabilities. The University application, called the "Enterpriser," provides the added benefits of commodity consolidation in a single comprehensive system and 24x7 access through a secure web site.

### APPROACH

Enerwise worked closely with the University to install the monitoring system and test all processes. The resulting system

monitors system status and activates alarms on predetermined values, evaluates energy usage and electrical system capacity, captures waveforms from system events, and is used to develop and implement energy cost allocation and reduction strategies.



### CLIENT BENEFITS

- As a result of using the system to aggregate the multiple facilities into one billing account, utility demand charges were reduced by 10 percent, with total annual energy savings of 5 percent for the University.
- The local municipality uses energy data collected through the system to prepare billing and record power system data (e.g., voltage, current, power factor).
- Power quality information is used by both the utility and the University to reduce system downtime caused by unexpected outages.
- Natural gas monitoring enabled the University to identify appropriate boiler capacity, resulting in \$400,000 in deferred capital expenditures compared to an initial design.