

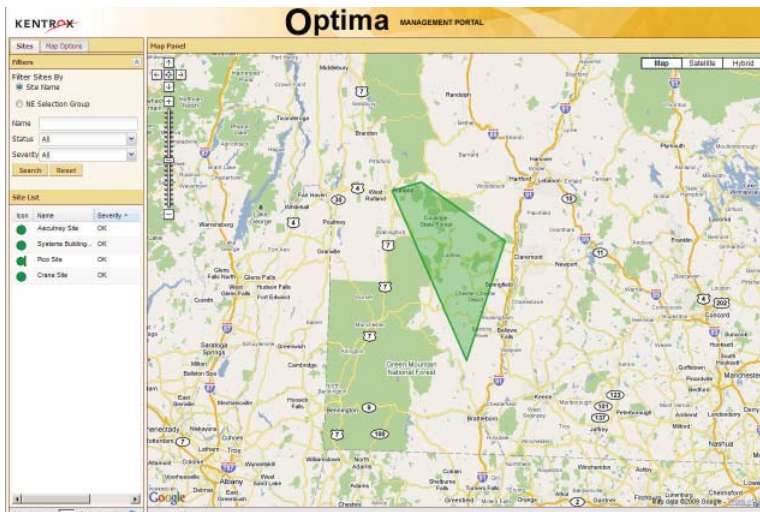
# Central Vermont Public Service

Central Vermont Public Service (CVPS) is the largest electric company in Vermont and services more than 159,000 customers in 163 communities. In 2009, J.D. Power and Associates ranked CVPS number two in the Eastern region for customer satisfaction among mid-sized utilities, and number four among all utilities in the eastern United States. CVPS ranks second in the country among mid-sized utilities on corporate citizenship and communications.

The CVPS telecommunications department manages telephone, radio, and microwave equipment in numerous electrical substations, corporate office buildings, and remote radio sites throughout Vermont. During a review of their networks during 2008, it was decided that remote management and monitoring were required to better manage the sites and equipment. In 2009, they chose the Kentrox Remote and Optima management system to provide comprehensive remote management and monitoring of their sites.

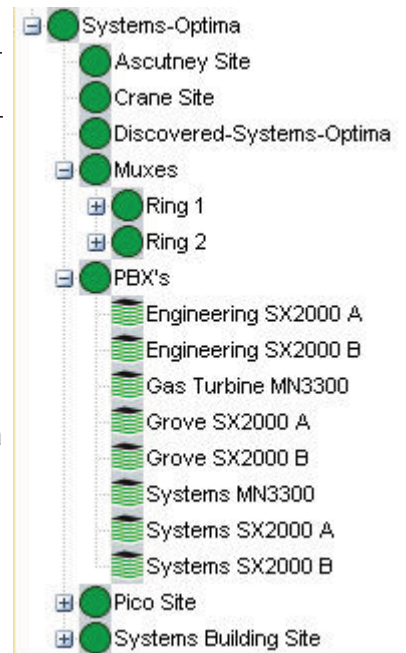
## Monitoring and management installation

CVPS has a microwave backbone network deployed throughout its operating territory, which links dispatch, scheduling, and other operations to 10 outlying districts geographically situated to provide customer service and system maintenance. The microwave network equipment is located at remote and difficult to access mountain-top communications sites. Reliability of the system suffered from the need for a small crew of telecommunications engineers and technicians to install, operate, and maintain a diverse system of battery plants, generators, HVAC, and radio equipment.



Maps enable real-time network views with point-and-click site and location visibility.

CVPS installed Kentrox Remote and Optima server devices to improve the monitoring capabilities of their remote sites. Kentrox Remotes reside at the remote site locations to collect performance data, monitor alarm contacts, and communicate with the operations center via TDM lines. The TDM network transports SNMP alarm messaging from the Kentrox Remote via a Cisco router at each site which manages the TDM to IP conversion.



CVPS view showing status of each network element.

With the implementation of SNMP, all remote site data and alarming information is forwarded to Optima. The Optima server presents this information on the corporate network in a graphical format as alarm events with graphs and tables and is intended to display real-time status as well as history and trending.

Currently, CVPS is using the Remotes to collect environmental information for both indoor and outdoor temperatures and indoor humidity, power systems that monitor commercial power and batteries, generator status, and security to identify door intrusion and motion detection. Optima, which is located in their operation center, then collects the information from the remote substations, monitors and trends the information, and reports on the site performance.

According to Satish Angur, Telecom Network Systems Engineer for CVPS, "Optima provides us with real time reports so we can see the health of our system at anytime from anywhere. We can look at maps to see where problems may occur if we don't intervene. This enables us to prioritize our technician's time and efforts."

# Success Story

The versatile Optima system provides the ability to create adaptor modules to interface and integrate with any vendors' managed equipment to gather external data and events for reporting in Optima. Kentrox built two Optima interface adapters for CVPS, a Mitel® PBX system adapter to monitor service affecting alarms on their primary telephone system and a GE JungleMUX adapter to monitor any alarms that are generated in a fiber optic network. The adapters provide CVPS real-time monitoring and alarming of their critical systems, warning them of a problem situation.

## Environmental conservation

CVPS is also interested in protecting the environment. For example, they are involved in a Vermont Bald Eagle Restoration Initiative and an osprey restoration program. Additionally, the CVPS Greenteam volunteers time and effort towards helping at a federal fish hatchery, cleaning up a local reservoir, and the construction of a town park.

"By using Kentrox products at our remote locations, we can reduce the number of times we need to send a technician to a site to check the health of the system," comments Angur. Through remote management and monitoring of CVPS' sites, greenhouse gas emissions are reduced by decreasing the number of required technician dispatches. Optima provides remote troubleshooting and repair capabilities to improve maintenance and reduce or eliminate site visits. Additionally, there are improved

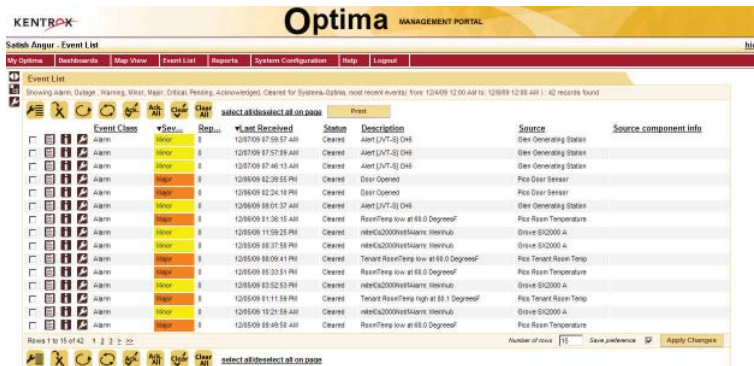


CVPS report to simultaneously view site status and the associated alarm.

no longer need to wait until a problem occurs to find out the network isn't healthy. Using the Kentrox products, we can review our equipment and site facilities at any time and see where potential problems may occur. The proactive warnings enable us to improve our network availability and fix issues faster when they do occur."

Using Kentrox products has allowed CVPS to reduce costs by minimizing site visits, ultimately reducing fuel costs and environmental impact. CVPS is also improving energy efficiencies by managing their remote equipment, whether by turning a generator on and off remotely or adjusting the temperature only when required. Remote and Optima provide the detailed monitoring, remote control, and management to cost-effectively manage CVPS communications sites.

"We have implemented Kentrox as our network standard remote management and monitoring solution," states Angur. "Their products have changed how we operate, and CVPS will expand the use of Remote and Optima by utilizing additional functionality and installing in more locations as our network and requirements continue growing."



The CVPS events list provides notification of degradations, events, thresholds, and alarms, helping technicians accomplish proactive repairs before service is affected.

energy efficiencies. Proactive performance management ensures CVPS that equipment using large amounts of energy, such as air conditioning systems and generators, run more efficiently. These systems can be monitored remotely, so when a thermostat setting needs to be changed, for example, a technician can do this without driving to the site. Additionally, Kentrox can automate the schedule to change a thermostat setting, such as when seasons change.

## Benefits of remote management and monitoring

Implementing a management and monitoring system for remote sites is critical for having a more reliable network. CVPS has experienced many benefits by introducing Kentrox Optima and Remote into the network. "Our greatest benefit is that we are now proactive," explains Angur. "We



Optima report showing room temperature over time.

For more information, visit [www.kentrox.com](http://www.kentrox.com), email [info@kentrox.com](mailto:info@kentrox.com) or call 800-733-5511 or +1 614 798 2000.