

# Thumb Electric and Bay City Drive Down the Cost of Data

Utilities need up-to-date information to help them manage power flows, prevent equipment breakdowns, respond to emergencies, and expand customer services. In fact, collecting the right information in a cost-effective manner can be key to staying in business.

Thumb Electric Cooperative in Ubly, MI, runs a 27 MW system with 12,000 member-owners, serving an area of 3,200 square miles, approximately the size of Delaware. The coop performs generation, transmission, and distribution — one of approximately 30 U.S. cooperatives providing all three services.

Michael Krause, General Manager of Thumb, remarks, "Our cost per data point used to be very high." They had totalizers monitoring power flow, but the totalizers ran on leased telephone lines, constantly collecting data, even though Thumb typically needed data only in short time intervals.

Plus, the data wasn't very detailed. "From one totalizer, we knew what the load was at any given time, but we had no data beyond that, like breaker status, load flows, balance on the system, or power factor."

## Thumb Sees Fast Payback

Krause knew that deregulation would have an effect on competition and operational costs. "Wholesale deregulation makes the marketplace much more volatile," says Krause,

"so we have to know exactly what our needs are, what our resources are, and the level of our performance."

Thumb needed a better way to monitor real-time power flows, generation, purchases, and sales. They installed 7700 ION and 3720 ACM meters at substations, and set up dial-up phone connections for data transmission to PEGASYS software.

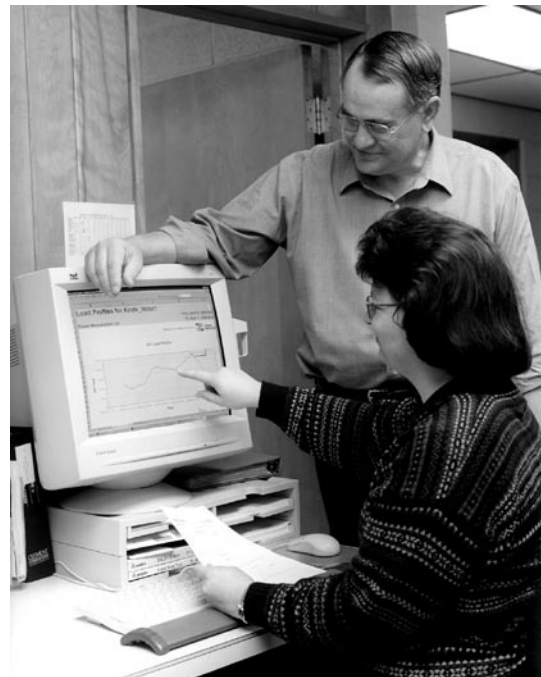
With the company's leased lines costing around \$20,000 per year, the decision to implement the new solution was "a no-brainer," according to Krause. "We'll get payback on the investment in three years or less, and we'll also have much better data."

Simplicity was another factor in the decision. "Because the people on our staff are heavily multi-tasking, we need equipment and systems that are easy to operate," says Krause. "And we'll be able to expand this solution gradually as we go along."

"The new setup allows us to monitor disparate systems so that we know what generation we have on-line at all times," Krause continues. "Along with monitoring our purchases and needs, it lets us to manage our sales to other utilities more efficiently."

# Case Study

<b>Application</b>	Utility
<b>System</b>	7330 ION meters 7700 ION meters 8500 ION meters 3710 ACM meters 3720 ACM meters PEGASYS® software
<b>Benefits</b>	Reduced costs Improved reliability Flexible billing options Fast problem response Simple integration Expandability



Michael Krause (left), General Manager, and Michelle Braun, view a load profile report.

Breaker monitoring has proven to be a cost-effective way of troubleshooting problems before they arise. For example, Thumb has several SS6 (gas) breakers. If gas pressure falls too low in these breakers, they won't function properly. With the meters and software, Thumb can see any pressure drops instantaneously. In the past, visibility to such anomalies was difficult to attain, creating a potential for problems beyond the breakers themselves.

"One breaker was showing 500 operations in a day," Krause notes. "We knew that couldn't be right. There's no way that breaker could be cycling at that rate. But when we went out and inspected it, we found that the breaker was indeed cycling in and out at that rate. It could have easily self-destructed under such stress, but we were able to quickly identify and resolve the problem."

### **Bay City Improving Information and Control**

Bay City Electric Light and Power, a municipal utility, is also upgrading its data management system.

"You have to keep pace in an informational world," says Kim Coonan, Metering and Substation Supervisor. "With deregulation on the horizon, the more information you can access, the better your competitive position."

Bay City has started by installing 3710 ACM meters at its substations. Next will be 8500 ION and 7330 ION meters at the company's six points of generation. All of them will communicate with PEGASYS software through radio links, mostly at 800 MHz to 900 MHz, and one at 2.4 GHz.

Bay City will use dial-up lines at the outset, and add radio communications as the upgrade moves towards completion.

"Being able to monitor everything remotely from a single point is a great advantage," explains Coonan. "Before, we had to physically go out to the sites, which was labor- and time-intensive. The new approach will be simpler, faster, and much more efficient."

They can also perform switching and track their loads using the meters and software. "It's now much easier for us to determine how best to balance the power system," says Coonan.

Additionally, he says, PEGASYS is an ideal tool for outage management, dramatically speeding up diagnostics and keeping customers better satisfied.

"We can monitor a problem in real time," says Coonan. "In the past, we had to rely on phone communications, driven largely by customer call-ins, and had to send a team out into the field to find the source. This typically had a hit-or-miss element. Sometimes you'd narrow the search and find the source quickly; in other instances, it could take a good deal of time to find and resolve."

Soon after the company deployed the first components, they resolved glitches that could have developed into major problems. "We're just scratching the surface of what we can do," he observes. "It's a tremendous tool for system analysis and troubleshooting."

Bay City also plans to use the meters and software as a means of revenue generation, enhancing their flexible billing options service with 8500 ION meters that will provide real-time,

revenue-accurate data.

"We offer various customers the opportunity to be billed on a time-of-use basis," says Coonan, "and many of them choose this option by using energy during non-peak times. Because we'll have a more detailed understanding of our utilization, we'll be able to leverage this information to our customers' benefit when it comes to billing."

### **Facing a Brave New World**

The initiatives underway at Bay City and Thumb Electric underscore the growing trend towards advanced power management solutions.

Electricity providers are quickly deploying these technologies and improving their infrastructures for the competitive years ahead.

### **For More Information...**

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