

NORTHEAST UTILITIES DEVELOPS "FLEX-AMR" TO MEET DIFFERING CUSTOMER NEEDS

Northeast Utilities is a diversified energy company located in Connecticut with operations throughout the Northeast. Through its competitive and regulated subsidiaries, NU provides a full range of energy products and services to millions of residential and business customers from Maine to Maryland. From delivering electricity and natural gas, to marketing energy commodities, to operating and maintaining power plant facilities, NU is committed to safety, reliability and expanding consumer's energy options.

New Challenges for Today's Markets

During the late 1990s, as deregulation unfolded, NU reassessed its approach to meet the challenges of reliability, operating efficiencies and providing quality customer service. For most of these goals, improving performance would require better and timelier information about the company's operations.

Information from the Meter

NU began trials of automated meter reading (AMR) in the early 1990s as a way to get data from hard-to-read electric meters. Then the utility installed additional projects until, by 1999, about one third of its customers were on AMR, mostly drive-by radio. But NU began to see that the main benefits of AMR would only come with a full-scale commitment.

All its gas meters were already read remotely, and NU sought the same success for

the electric side of its business. David Scott, NU Manager, Meter Engineering & Systems, took on the challenge of engineering the conversion to 100 per cent AMR by 2003 in NU's Connecticut Light & Power and Western Massachusetts Electric operating companies.

Scott had been involved with AMR since 1988 and had both an engineering and business background. He was aware that AMR was still developing so he anticipated numerous changes ahead — software, hardware, infrastructure and suppliers.

NU's Approach to AMR

NU needed a simple, flexible, cost-effective meter reading system that would work now and could be upgraded in the future. Also, NU wanted accurate information for internal and external customers. Increasingly, they wanted 'near-real-time' meter data for utility operations, for large customers and for third parties, like ISO New England, which uses the data for settlement pricing on the New England power grid.

By reaching 100 per cent AMR coverage and minimizing commitments to proprietary technologies, NU could:

- Reduce operating costs while providing improved customer service,
- Eliminate costs of supporting multiple proprietary meter protocols;
- Access most data electronically, including load profile, demand and billing data.

Flexibility is the Key

NU developed 'Flex AMR', a comprehensive approach to achieving the utility's objectives. Under Flex AMR, NU would be able to install a variety of solid-state meters and 'plug-in' a variety of communications solutions. Flex AMR would require cooperation from and among suppliers.

The system would allow NU to mix and match devices as best suits its data and communications needs: from simple kWh reads to interval data; from telephone to radio — perhaps changing over time.

Flex AMR Handles Differing Customer Needs

NU's Flex AMR program provides three types of services:

- 1) Silver Service: basic drive-by meter reads for over 1.2 million residential and 100 thousand commercial and industrial (C & I) customers. Also, about 4 thousand Silver Service customers will use telephone communications.
- 2) Gold Service: telephone communications plus selected data services such as demand profile and customer specified dates for meter reads.
- 3) Platinum Service: telephone communications plus enhanced data services, including near-real-time interval data over the Internet. The regulated, fee-based Gold and Platinum services currently serve approximately 2 thousand C & I customers.

Inbound Telephone Options

At NU, telephone communications include:

- 1) Standard telephone, sharing the customer's line;
- 2) Dedicated phone line installed by customer;
- 3) 2-way public network wireless for approximately 250 customers where telephone is unavailable. NU has found telephone communications to be low cost and well received by its customers.

Since telephone based AMR would have to fill more complex data needs of Gold and Platinum customers, in addition to some Silver customers, it was very important to choose a reliable communications system supplier. After evaluation, NU chose Nertec to answer the majority of its interval data collection needs and this important market segment.

According to Scott, "Nertec had the proven reliability, engineering depth and flexibility to work with NU's meter

Continued on page 38



Northeast Utilities **Continued from page 35**

manufacturers and meet utility specifications.”

As part of NU's Strategy, the flexible AMR technology choices focus on solid-state meters using the ANSI C12.19 standard table protocol. NU works with several meter manufacturers. However, for customers using telephone communications, SchlumbergerSema provides most of the meters: either its Centron™ single-phase meter or its Sentinel™ polyphase meter.

For NU's polyphase requirements, NERTEC tailored its NCTR801 to integrate smoothly with the Sentinel meter. NCTR801 acts as a telephone modem and gateway to access the data stored in the Sentinel. The NCTR801 meets ANSI standards C12.19 and C.12.21 and can be programmed locally via the optical port using the ANSI C12.18 protocol.

For single-phase Centron meters, Nertec's NCTR101 acts as an interval data recorder (IDR), satisfying NU's single-phase load survey needs. The NCTR101 also provides momentary outage logging and real time power outage notification.

NERTEC Answers the Call

At NU's operations center, a server running NERTEC SerView communications software answers inbound AMR telephone calls and does initial data handling. SerView provides an FTP link to transfer the field data to NU's Itron MV-90™ system. SerView also delivers momentary outage data to NU's Energy Delivery group. In the future, NU may use the NCTR101's real-time outage notification capabilities and link directly to NU's GIS and SCADA systems.

Simple and Cost Effective

Northeast Utilities wanted a comprehensive AMR system that would have a simple, cost-effective architecture, based on proven technologies. To achieve this, NU challenged suppliers to be flexible and to coordinate with each other. Now NU is on track to achieve 100 per cent AMR deployment in 2003.

And, with their goal in sight, NU is already realizing operating efficiencies and data availability — a success story for the utility and a fulfillment of the promises of AMR.

For more information about Northeast Utilities, visit www.nu.com.

*For more information about NERTEC, visit www.nertec.com . **ET***