MultiSpeak® Use Case Study: Wake EMC

The following case study is part of a series examining the significant values and benefits that MultiSpeak® provides to both electric utilities and software vendors. For the entire series of case studies, please visit MultiSpeak.org.

What is MultiSpeak?

Distribution optimization is a key role of America's Electric Cooperative that relies on seamless, cyber secure, cost-effective, and reliable data interoperability. A critical challenge in achieving distribution optimization is de-risking technology integration in the electric distribution system. MultiSpeak® is the worldwide leading software interoperability standard and connectivity solutions for electric distribution utilities. It facilitates data sharing between independent systems in a seamless, cyber secure, cost effective, and standardized way.

Since 2000, MultiSpeak® has benefitted both software vendors and utilities by simplifying software integration and minimizing expenses for custom interface solutions. MultiSpeak® is the only interoperability standard of its type listed in the NIST-SGIP Catalog of Standards. MultiSpeak® is used in more than 800 plus electric cooperatives, investor-owned utilities, municipals, public power districts, water and gas utilities, universities, and Department of Defense in more than 21 different countries worldwide.

Utility Background

Wake Electric is a 42,000 meter distribution co-op headquartered in Wake Forest, NC. While some of the service area remains rural, much has become suburban as the Raleigh-Durham and Research Triangle Park metropolitan areas have expanded.

Wake Electric began researching companies in late 2012 for a dynamic and autonomous conservation voltage reduction (CVR) solution to reduce the financial impact of demand charges by lowering the overall demand during peak load. Several software companies were vetted, but only OATI at that time offering a fully automated solution, which could integrate with the current advanced metering infrastructure (AMI) vendor, Sensus, and only required the operator to set the CVR time and date in the software.

The first several months of the project involved weekly meetings to discuss integration challenges, implementation, and enhancements since Wake Electric was the first

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cooperative CVR customer using the OATI solution. One of the biggest integration challenges was sending OATI's CVR application the AMI data it needs to function properly. Without frequent meter voltage data reads, the software would have no way of knowing if system voltage was too low and needed to be raised.

MultiSpeak® Implementation and Benefits

In order to provide the meter voltage data, Wake decided to set up a MultiSpeak® connection between their Sensus AMI system and OATI. Sensus took the lead on setting up the connection using MultiSpeak® 3.0. Setting up the interface between OATI and Sensus was "a pretty easy process," according to Don Bowman, manager of engineering at Wake Electric. However, in addition to MultiSpeak®, it took countless hours of coordination, testing, and discussions to get to the targeted yield of the system. Figure 1 shows how the entire system works together and where MultiSpeak® fits into the solution.

Systems Overview

Conservation Voltage Reduction (CVR) Solution:
OATI CVR solution can surgically reduce consumption through voltage changes on target distribution circuits by deliberately and actively controlling voltage-regulating devices.

Advanced Metering Infrastructure (AMI):
Sensus AMI provides accurate data measurement, consistent billing, and operational efficiency.

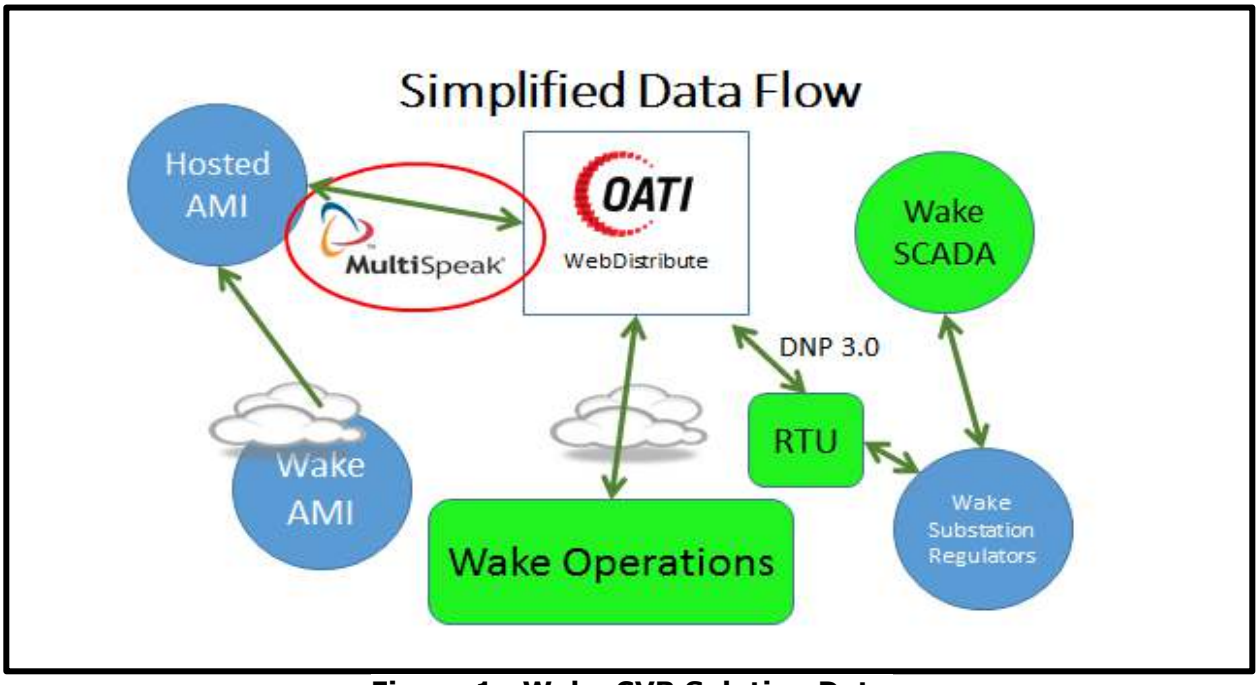

Figure 1: Wake CVR Solution Data

Kelly Fritz, manager of information systems at Wake Electric, had been familiar with MultiSpeak® for several years through MultiSpeak® workshops at TechAdvantage

conferences. "MultiSpeak® is always our go to integration protocol when trying to integrate new distribution technologies with current or legacy systems," says Fritz.

Wake Electric began by deploying the CVR solution to one substation and has now expanded to 68 feeders controlled by OATI's software during a CVR event. Bowman believes the pay-off was well worth the effort. With a finely tuned system and perfect conditions, Wake Electric is able to reduce their peak by up to ~4 percent or $95,000/month for seven months out of the year, generating significant potential savings for the co-op:

Total Potential Savings:
$665,000/year

The next phase is to focus on improving the CVR factor for each feeder on the system to maximize each event. Says Fritz, "We intend on squeezing out every bit of savings for our membership with this system."

Lessons Learned

Wake Electric learned several valuable lessons throughout the project:

- Consider what Multispeak® interfaces you may need when contracting with a vendor. Wake Electric's connection was negotiated into the package price of the CVR system implementation, saving them money and time later in the process.
- Fritz encourages all utility beneficiaries and users of MultiSpeak® to become official subscribers/members. This is an important step because MultiSpeak® subscribers have greater access to free training & technical support, and this demonstrated member support shows vendors that there is a strong community actively engaged in the MultiSpeak® standard.

Contacts for More Information and Questions

For more information on MultiSpeak® or to become involved visit http://www.MultiSpeak.org or contact:

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Appendix A: Common Acronyms

AMI – Advanced Metering Infrastructure

BTS – Business & Technology Strategies

CIS – Customer Information System

CPR – Continuing Property Record

CRN – Cooperative Research Network

CVR – Conservation Voltage Reduction

EA – Engineering Analysis

GIS – Geographic Information System

IVR – Interactive Voice Response

OMS – Outage Management System

RFP – Request for Proposal