NV Energy Delivers Reliable Power Distribution with Sensus

NEVADA UTILITY BUILDS ON AMI INVESTMENT WITH DISTRIBUTION AUTOMATION



CHALLENGE

Create greater value for customers with existing communication infrastructure

SOLUTION

Harness the FlexNet Communication Network for Distribution Automation

REACH FARTHER

Add additional applications to optimize grid assets

The lights along the Las Vegas strip are so bright they can be seen clearly from space. Imagine the amount of energy it takes to run this city full of 24/7 entertainment.

That's a task that falls to NV Energy, which provides power for customers in Las Vegas and the rural communities of northern Nevada. With such a large and geographically diverse service territory, this electric utility handles a wide range of customer needs.

"We're always trying to do things to improve the lives of our customers," said Dan Zaccagnino, senior engineer, NV Energy. "That means proactively undertaking initiatives that will result in lower rates and more efficient service."

"We put together a business case and, after reviewing power quality before and after the Distribution Capacitor Automation Project (DCAP), we determined that we could deliver an average savings of $1.75 million per year, which we transfer to our customers through a reduction in fuel and purchased power."

DAN ZACCAGNINO, *Senior Engineer, NV Energy*

Seizing an opportunity

In 2009, NV Energy embraced the transition to advanced metering infrastructure (AMI), automating the process of meter data collection for a faster and more accurate view of their customers' electricity consumption. They deployed the Sensus AMI solution, using the FlexNet® Communication Network to connect more than 1.3 million smart electricity meters, and won accolades in the process.

"With a coverage area that includes mountains, deserts and cities like Las Vegas, we needed a versatile network that could communicate with meters across varied terrain," said Zaccagnino. "We believed the Sensus FlexNet system would provide us with a secure and reliable network to give us a clearer view of our customers' usage, and that's proven to be the case."

NV Energy went a step further to anticipate their customers' needs. The team explored other applications that could benefit their customers focused on Distribution Automation (DA).

DA uses Intelligent Electronic Devices (IEDs) placed strategically across the electric grid to collect and analyze data a utility can use to optimize power distribution across the grid. Data from DA devices can save money and lower rates for customers by allowing the utility to operate devices in real time to improve reliability and efficiency.

"DA has evolved over the years," said Zaccagnino. "At first it was a way to isolate faults on the grid network and identify outages; today as more and more Distributed Energy Resources (DERs) are connected to the grid it's a way to optimize energy delivery to our customers."

FlexNet provides the backbone

The key to NV Energy's DA initiative was the existing FlexNet system, a dedicated, two-way communication network that operates on a licensed spectrum for secure data transmission.

"The FlexNet system provided the communication backbone for our DA initiative," said Zaccagnino. "We have IEDs that bring back current and voltage, so we found that we could leverage these as DA assets to help improve power quality and provide voltage support for our customers."

Paying off in spades

The utility's FlexNet DA effort began in 2016 with a pilot deployment of 10 base stations concentrated primarily in the southern part

of the state. The initial results were so promising that NV Energy immediately moved forward with a full deployment across their entire service area.

"We put together a business case and, after reviewing power quality before and after the Distribution Capacitor Automation Project (DCAP), we determined that we could deliver an average savings of $1.75 million per year, which we transfer to our customers through a reduction in fuel and purchased power," said Zaccagnino.

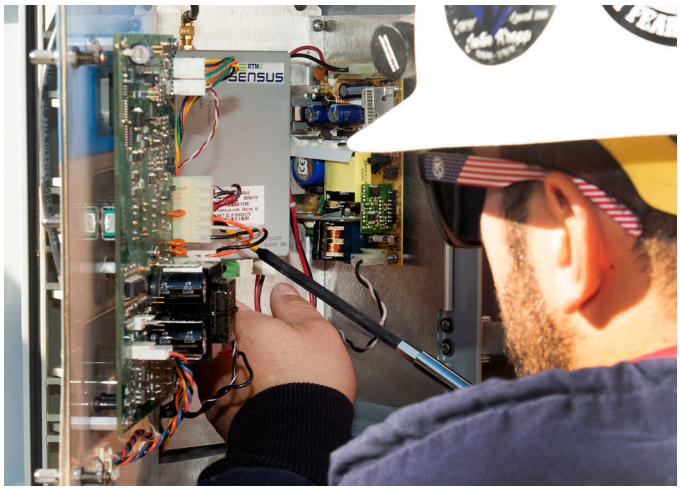
In addition to the AMI system already in place, NV Energy's DA system includes more than 2,400 Remote Telemetry Modules (RTMs), 2-way communication devices inside capacitor bank controllers, and Sensus AutomationControl™ software for field device control and network management. Using AutomationControl, NV Energy can quickly identify any equipment or system issues from any computer, even field crews using tablets or smartphones. The simple web interface complements existing distribution supervisory control and data acquisition (SCADA) systems and provides additional features for engineering, planning and operations.

"Now it only takes a few seconds to update the server where it used to take several minutes," said Zaccagnino. "When commands are issued, it refreshes on the web server a lot faster than it did before."

Another step on the journey

With the full deployment of the DA solution expected to be completed in 2019, NV Energy continues to look for new ways to deliver value to its customers. The utility will look for ways to leverage the DA solution for initiatives such as conservation voltage reduction (CVR) and phase detection.

"We want to deploy new technology to improve reliability and service to our customers, and we see DA as an opportunity to do that," said Zaccagnino.



The Sensus solution allows NV Energy to optimize power distribution across the smart grid.

©2018 Sensus 8601 Six Forks Rd, Ste 700, Raleigh, NC 27615
1-800-638-3748 sensus.com