With SurvalentONE DVR, Scottsboro Electric Power Board has trimmed electricity costs and increased stability to its distribution network.

Case Study

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Scottsboro uses SurvalentONE DVR to Benefit from Energy Conservation Programs across Alabama

Scottsboro Electric Power Board (SEPB) is a municipally owned utility in the City of Scottsboro, Alabama, that delivers electric, cable, Internet, and phone services to 8,500 customers.

The city's electrical network is fairly compact: it has seven substations, two of which are primary substations that receive power from SEPB's supplier, the Tennessee Valley Authority (TVA). In 2003, SEPB retired an old, outdated SCADA system, replacing it with SurvalentONE SCADA. Since then, the utility has gradually expanded its ADMS capabilities to include OMS, Power Factor Control, WebSurv, and several other SurvalentONE applications. The utility currently has one full-time ADMS operator, backstopped by two other qualified employees who operate the software on a part-time basis, as needed.

In 2014, TVA invited SEPB to participate in a new conservation voltage regulation (CVR) program that encourages utilities to minimize voltage levels throughout their network, thereby reducing power consumption and lowering costs. SEPB subsequently became one of the program's five initial participants.

"Getting involved with TVA's CVR program was a way we could help our customers, SEPB and TVA, " said Bradley Potter, a field engineer at SEPB. "It was something we could do on our end to help them."

To meet the technical demands of the CVR program, SEPB was required to purchase and deploy voltage regulation software capable of monitoring the entire electrical network.

Moving Forward with SurvalentONE DVR

Preferring a voltage regulation system that would integrate seamlessly with their existing ADMS, SEPB turned to Survalent for a solution. During the utility's 11-year relationship with Survalent, the two companies had collaborated on numerous projects, so managers at SEPB knew they could expect a high standard of quality and service if they partnered with Survalent once again

SEPB soon determined that Survalent's Dynamic Voltage Regulation (DVR) software was not only capable of supporting their initial CVR effort, but could also be used to maintain voltages within an even tighter band during peak demand hours.

In fact, the utility later implemented a separate voltage regulation regime for daily peak periods under the auspices of TVA's Dispatchable Voltage Regulation time-of-use program.

At the beginning of the CVR project, SEPB was still using traditional one-way meters, which prevented SurvalentONE DVR from reading true end-of-line voltages. The utility upgraded the voltage regulation control panel for each feeder and, as an interim step, changed the capacitor bank controllers over from one- to two-way communication, making it possible for SurvalentONE DVR to read those voltages and use them to regulate each feeder.

Later, when SEPB had introduced a sufficient amount of advanced metering infrastructure (AMI), SurvalentONE DVR began to rely more heavily on the worst-case, end-of-line voltages returned by the new two-way meters and less on measurements taken at the capacitor banks. Survalent personnel worked with SEPB to program the zones for CVR and, later, DVR operations.

As a participant in the CVR program, SEPB is required to submit daily reports containing comprehensive hourly voltage readings to TVA. Survalent helped SEPB configure the system to ensure that the reports conformed with TVA's official templates.

"Survalent had a good idea of what TVA's reporting templates looked like and what we wanted to do with the DVR system," said Potter. "In the end, it all came out the way we wanted."

"Over the last two years, SurvalentONE DVR – supported by the deployment of new voltage regulation equipment and extensive AMI – has enabled Scottsboro Electric Power Board to trim electricity costs and increase the stability of its distribution network."

Reaping the Benefits

For the first year of the CVR program, SEPB performed on-and-off testing of the new voltage regulation system, during which SurvalentONE DVR was active every other day, allowing TVA to collect baseline load measurements. "Since installing the SurvalentONE DVR as part of our voltage regulation program, we benefit by having a reduced wholesale cost from TVA," commented Potter.

The voltage regulation system has been continuously running in CVR mode since the beginning of the second year.

Potter credits SurvalentONE DVR for having a positive impact on the network, saying, "We used to send out emails and run messages on our local SEPB channel asking customers to conserve electricity during peak demand hours, but we no longer have to do that because now we're rounding off those sharp daily peaks with the SurvalentONE DVR system."

Working behind the scenes, SurvalentONE DVR leverages SEPB's recent investment in AMI technology to provide valuable situational awareness of the network. For example, at one point in the project, the software detected unusually low voltage at several locations within Scottsboro's network: the utility was able to correct the situation by revising the system's programmed zones.

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Our unwavering commitment to excellence and to our customers has been the key to our success for over 50 years.

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