



Sumter EMC Expands Coverage with MOTOTRBO™ and Wide Area Network



Sumter EMC's new MOTOTRBO IP Site Connect radio network, combined with a wide area point-to-point solution, has provided full communications coverage throughout its 2,200-square-mile territory.

Background:

Sumter Electric Membership Corporation (EMC) is a not-for-profit electric utility that provides reliable, cost efficient power to its 19,500 members throughout 11 counties in southwest Georgia. As a service cooperative, Sumter EMC is owned by those it serves and provides electric power at cost to its members, who actively participate in setting policies and making decisions.

Challenge: Ensure safety, improve service, and reduce expenses.

Reliable, clear communications are critical for the safety and productivity of the linemen and other field workers responsible for maintaining Sumter EMC's 3,000 miles of distribution line that covers 2,200 square miles throughout southwest Georgia. With heavily wooded terrain that extends through both city and rural areas, anything less than seamless coverage throughout the entire footprint was not an option.

"Even though we were using a three-repeater system, the old 800 MHz system just couldn't penetrate in a lot of areas with dense foliage, or reach all the way to the fringes of the area," says David Brokamp, vice president of engineering, Sumter EMC.

With a nearly 20-year-old 800 MHz analog system that could no longer be maintained without significant expense, as well as coverage issues that could have compromised worker safety and productivity, Sumter EMC began to look for new technology to upgrade its communications capability. In addition, as a not-for-profit corporation, Sumter EMC was also always on the lookout for ways to increase the efficiency and productivity of its workforce and reduce costs for its members.

"When we dispatch a field worker to an outage, we try to send the truck that is closest to the outage site," Brokamp says. "With the old system, we really didn't have any way to track their exact location. Without that knowledge, we took the chance that we were dispatching a truck that was 30 miles away vs. a team who might have been closer and could have had the customer back in service much more quickly."

About Albany Communications

Albany Communications, Inc. has been serving southwest Georgia counties for more than 35 years, engineering, designing, and supporting effective wireless communications solutions for a variety of business, industrial, and public safety users.





Solution: MOTOTRBO™ IP Site Connect with Motorola Point-to-Point Wireless Broadband Solution for Wide Area Coverage.

Brokamp contacted Stephen Woodham, sales consultant, Albany Communications, a Motorola channel partner, and explained the situation. Woodham recommended MOTOTRBO digital radios, a reliable communications solution that delivers significant functionality for a highly competitive price.

MOTOTRBO is a digital two-way radio system designed to meet the requirements of organizations that require a customizable, business-critical communication solution using licensed radio spectrum. MOTOTRBO provides a complete dual mode (analog and digital) system including repeaters, mobile and portable units, data applications, and accessories for a customizable, affordable solution that meets the specific needs of the business. The IP Site Connect capability of MOTOTRBO allows a number of radio sites to be easily connected to provide seamless coverage. The MOTOTRBO RDAC (Repeater Diagnostic Alarm & Control) feature allows a system administrator the ability to easily monitor and control the remote transmitters throughout the system.

Woodham also recommended Motorola's Point-to-Point solution to complete the connection of the three repeater sites, creating a wide area network that would cover Sumter EMC's entire 2,200-square-mile coverage area.

"The great thing about this solution is that it puts everybody on the same channel," Brokamp says. "If a lineman on the far side of our territory needs to contact me, I know he'll be able to get through. If I need to leave the office, I can take my radio with me and talk to them just like I'm sitting in Dispatch. It's effective, efficient, and gives us that added flexibility."

Customized applications that take flexibility to new heights.

MOTOTRBO is capable of both standard and customized applications that enable even greater business value to users. The MOTOTRBO Application Developer program provides tools that help customize end user solutions with easy to use programming interfaces

and the ability to port both in-house and third-party applications. Sumter EMC developed a program using Comtran Associates' Street Trek software that, along with MOTOTRBO's built-in GPS, enables Dispatch to enter the location of a reported outage, identify the closest maintenance truck, and then dispatch that truck to the outage. Sumter also leverages the versatility of the TurboVUI application from CTI Products for radio dispatch via an IP connection. This unique MOTOTRBO capability can also allow Sumter to maintain radio dispatch connectivity from remote locations.

"This has helped us significantly reduce our response time and enables our field workers to deliver improved service for our customers," Brokamp says.

Benefits: Safety first, safety always. Power outages don't just happen from 9 to 5 and with a workforce that often works alone at night in inclement weather, having the ability to track in near real-time where employees are located is invaluable.

"You hope you never have a need to call on that feature but if you do, the response time can mean the difference between life and death," Brokamp says. "You just can't put a value on safety."

MOTOTRBO also allows Sumter EMC to take a proactive stance on safety issues by helping to prevent catastrophic accidents. For example, whenever the utility needs to energize a line after an outage, they need to make sure all personnel in that area are out of the way prior to flipping the switch.

"We used to have to call and check with each worker first to make sure they're clear," says Brokamp. "Obtaining clearances from all workers using only a manual checklist, no matter how carefully done, still involves the risk of human error. Now with the GPS application, we can verify that the list of cleared workers includes all those in the vicinity of the outage. Although we still do the manual checks, the GPS is an invaluable failsafe in case we miss somebody or if someone decides on their own to go do some work somewhere without telling us."

"MOTOTRBO™ has given us nearly 100% coverage and the audio quality on the fringe is crystal clear, even when the background is noisy."
—David Brokamp, Vice President of Engineering, Sumter EMC



Other benefits include:

• **Coverage from one end to the other**

Sumter EMC's territory stretches 66 miles from the furthest point to point, a distance too far for the old system to span. "MOTOTRBO has given us nearly 100% coverage and the audio quality on the fringe is crystal clear, even when the background is noisy," says Brokamp.

• **Improved response time**

With GPS providing location of the trucks, Sumter EMC has been able to reduce the response time between when they get a call reporting an outage to the time the unit gets to the site and repairs the line.

• **Ease of use**

Intuitive controls, an easy to read screen, and simple programming changes make the radios both easy to use and easy to manage. "A couple of our guys needed their radios programmed and I was able to quickly do it myself," says Brokamp. "It's good, easy software."

• **Reduced Operational Cost**

Service fees—Sumter EMC was also on a carrier network that supplemented its existing 800 MHz system. With MOTOTRBO, they no longer needed that additional system, which will save them over \$12,000 in annual service fees.

Maintenance expense—No longer having to bear the cost of purchasing expensive replacement parts or paying an increasingly costly maintenance fee for an end-of-life system has saved the company another \$10,000 annually. "Doing away with the monthly service fee on the carrier network, as well as the eliminating the maintenance cost helped justify our payback on the system," says Brokamp.

Fuel costs—The overall per-mile cost on the large utility trucks can be overwhelming, not to mention the wear and tear on the vehicle itself. The location application shortens trips, significantly reducing fuel expense and the cost of vehicle maintenance.

• **Enables accountability**

Occasionally, a customer will wrongfully blame a field worker or meter reader for damage on the property. With the records kept by the location application identifying which truck was in which location at any given time, it's easier to prove or disprove accountability.

• **Rugged**

"Our guys have to wade through swamp bottoms, climb hills in remote areas, and deal with some grueling environmental challenges," says Brokamp. "The radios have to be rugged and MOTOTRBO radios are built to withstand the beating they get out in the field."

Sumter EMC counted on Motorola to come through with a solution that would enhance field worker safety, expand coverage throughout the territory, help them improve service to their members, and lower operational cost.

That confidence was put to the test recently when heavy storms blew through central and northern Georgia, knocking down power lines and leaving customers without power. Responding to a call for help from several other Georgia EMCs, Sumter EMC's field teams used direct mobile-to-mobile communications to safely work through the night helping to restore power and get the EMCs' customers back online quickly and efficiently.

"We've been working with Motorola since the late 1970s and have always had a good relationship with them," says Brokamp. "They have a long history of product excellence and a proven support system that backs it up. In fact, the local support that is available through Albany Communications was a key factor for choosing this solution."

What's next?

Sumter EMC is planning to leverage the bandwidth of the Point-to-Point wireless broadband solution to implement Distribution Automation applications which will enable Sumter EMC to monitor and control downline devices.



MOTOROLA

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