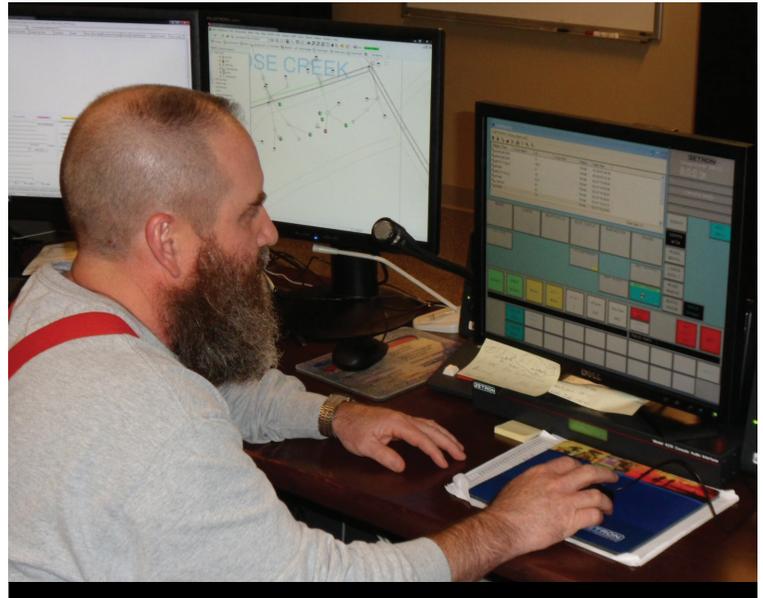


Case Study

Location: Jackson Energy

Product: Series 4000

Zetron/Kenwood NEXEDGE Solution Passes the 'Tornado Test'



Thanks to their new Zetron/NEXEDGE® system, Jackson Energy Cooperative was able to restore power to most of its service area within a few days after being hit by one of the worst tornado outbreaks on record.

In early March of 2012, the Southeastern and Ohio River Valley regions of the U.S. suffered one of the worst tornado outbreaks on record. In a two-day period, 65 tornadoes were confirmed and 41 people lost their lives.

One of the hardest-hit areas was Laurel County, Kentucky, which suffered several deaths, many injuries, and massive property damage. In addition, during the early hours of the storm, countless downed power lines and poles made the already dangerous area even more hazardous to storm victims and rescuers. But during this trying situation, one thing went right.

While most of the area lost all phone coverage, its energy provider, Jackson Energy Cooperative, had a new Zetron/Kenwood® NEXEDGE® radio solution that stayed up and running throughout the event. It enabled Jackson Energy to dispatch their service personnel wherever they were needed – first, to move debris and take care of downed lines and poles, and then to make repairs and restore power.

This was the event that proved to the customer the true worth of the new radio solution that had gone live only a few short months before.

Jackson Energy Cooperative

Located in McKee, Kentucky, Jackson Energy Cooperative was formed as a customer-owned distribution cooperative in the late 1930s. Like many energy cooperatives that were formed at the time, it was created to provide electricity to rural areas that lacked electric service.

The co-op began with only 380 members but grew significantly over the years. By 1971, it had 21,042 members. Jackson Energy currently serves 51,000 customers, primarily in Kentucky's Estill, Jackson, Rockcastle, Laurel, Clay, Owsley and Lee counties.

Why a new system?

Jackson Energy relies heavily on radio communications to dispatch and coordinate its meter readers and other service personnel. But before the recent installation, their radio communications left much to be desired.

"They had six repeaters placed throughout their seven-county region," says Kenwood project manager, Kurt Henningsen, who helped implement the new system. "Their repeaters weren't connected to each other, and their radio communications worked only when two people trying to communicate were both within range of the same repeater. Radio communications often had to be relayed through Jackson Energy dispatchers, who were busy with other tasks. This made it hard for Jackson Energy to coordinate operations in the field."

Narrowbanding spurs change

Jackson Energy made do, despite these problems. Then the FCC's narrowbanding mandate intervened.

In an effort to free radio airwave space, the FCC is requiring private land mobile radio users to migrate to narrowband radio channels by 2013 or risk losing their communication capabilities. For Jackson Energy, this was a blessing in disguise. It became the impetus for them to not only obtain equipment that would support narrowbanding, but to also install a new radio solution that would give them the functionality and coverage they needed.

Finding a solution

Jackson Energy approached several radio dealers, including Kenwood dealer and Zetron reseller London Radio Service, in search of new equipment. London Radio Service, in turn, asked Kenwood U.S.A to assist with a response. As a result, Jackson Energy invited Kenwood to give a presentation of an all-inclusive, turnkey solution based on Kenwood's NEXEDGE trunking system and Zetron's Series 4000 radio dispatch system. It was a winning combination. "After considering a number of options," explains Jackson Energy system operations director, Robert Youngman, "we decided that the Kenwood/Zetron solution was the best fit for us. We liked both the solution and the local support London Radio Service would provide after it's installed."

The solution Jackson Energy chose includes:

- A six-site NEXEDGE trunking system with two mid-point microwave sites.
- Zetron's Series 4000 dispatch system.
- Four positions of Zetron's Integrator RD console.
- Integrated Instant Recall Recorder.
- A GPS/automatic vehicle location (AVL) system.
- Kenwood NEXEDGE mobile and portable radios and control bases.

Kenwood U.S.A. and London Radio Service both played a major role in the system's design and implementation, with Kenwood serving as the primary contractor for the project.

The set up

The orders were placed, and all of the equipment was shipped to London Radio Service. "There were crates and crates and crates of equipment," says London Radio Service owner, Stewart

Walker. "When they arrived, we unloaded them and then rolled the antennas and lines out to all of the towers and put them in place. Then we unboxed the Zetron dispatch consoles and began installing them."

Kurt Henningsen then arrived to assist with the install. He says that the remoteness of the area and its mountainous terrain posed considerable challenges.

"From our hotel in London, Kentucky," he says, "it was a two-hour drive to one site and another three hours to another site at Happy Top mountain. The microwave paths were long and difficult - some are 22 miles long. And because cell coverage there is poor, it was hard to coordinate our crews. That was all resolved, of course, as soon as we got the microwave system up."

By contrast, the Zetron dispatch system installation was relatively straightforward. And once it was in, operators required only minimal training to learn how to use it.

"We set up the new consoles to mimic the buttons on their old consoles," says Henningsen, "so the dispatchers took to it quickly. Then, we tested the system to make sure coverage was as complete as possible. When everything was confirmed, we pulled the trigger and converted the whole fleet."

The 90/90 percent solution

Jackson Energy's Zetron/NEXEDGE solution went live in November of 2012, and it is providing the functionality the customer was hoping for. It supports narrowbanding and roughly 90 percent radio coverage 90 percent of the time on mobile radios, and 75 percent coverage 75 percent of the time on handheld radios. It also allows many more users to be on the system simultaneously.

Passing the tornado test

Even though the solution was performing as promised, the customer wasn't ready to pass final judgment until they'd had a chance to see it perform during a major storm. That opportunity arrived on March 2, 2012.

"The tornadoes hit, and we had 13,000 customers without power and multiple live lines down," says Bob Youngman. "But thanks to our new equipment, we had great communication and were able to dispatch crews to help with the emergency response. By the end of the second day, we'd restored electricity to all but about 250 customers. This showed us the system's real value." ■



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