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Reflections on Resilience: Lessons from Three Public Power Utilities

Betsy Loeff □10-12 minutes

One utility fought wildfires. One rebuilt after a massive tornado. One kept going despite a staff outbreak of COVID-19. Each of these utilities learned lessons from these tough times and offered perspectives on what resilience requires: united effort, adaptability, and connectivity with the community.

Relying on others and safety first

It's unlikely Allen Robbins, general manager and CEO at Sevier County Electric System in Tennessee, will ever forget the night eight of his utility's line workers were in the thick of a raging wildfire.

On Nov. 28, 2016, high winds caused a smoldering fire to erupt in the nearby national park and it spread quickly to surrounding communities. What began as a seemingly normal response to outages quickly escalated, and Robbins and his colleagues wondered if the crews would make it out alive.

"Fire trucks, ambulances, and police could not respond to the areas where they were getting calls because the roads were blocked by downed power lines," Robbins recalled, noting that his crews had to lead first responders into the flames. "Instead of responding to outages, these linemen were actually rescuing people."

One crew led a caravan of tourists — who had been trapped for hours — to safety. When it became clear that the lineworkers needed to manually switch a feed to power a water pump station that couldn't be reached via the utility SCADA system, crew members worked with a bucket truck in the air, surrounded by fire and fighting 90-mile-per-hour winds. They did it

without reliable communications. One of the lineworkers would drive until he had a cell signal, get as much information on the switching procedure as he could and drive back to the switch.

“He did this for a couple of hours,” Robbins said.

By the time the fire was vanquished, more than 2,400 of the 56,368 premises served by the public power utility had been destroyed. So had 125,000 feet of overhead conductor, 15,000 feet of underground line, 450 transformers, and more than 1,000 power poles.

Fighting this blaze left several workers traumatized. Robbins offered for workers to get psychological help, but he doesn’t think anyone took advantage of it. However, several told their stories in a book titled *Trial by Fire,* which is available on the utility’s website.

“That was their therapy,” Robbins said. “They got to tell their story. By the time the book got completed, the cloud that had been over our line department was lifted.”

Along with learning just how courageous his crew members are, Robbins said the experience taught him a few technical lessons about resilience. “Our infrastructure was really up to date when this happened,” Robbins said.

Replacement devices didn’t need to change much in terms of grid automation and sensing equipment, and the utility remained aggressive with vegetation management. “In your budgeting process, don’t divert from vegetation management. It’s so important to reliability and mitigating issues,” he said.

Robbins also stressed the importance of maintaining relationships with state agencies and mutual aid organizations. At one point after the 2016 fire, he had 17 crews helping out. In December 2020, he said mutual aid helped his utility shorten what could have been a seven-day outage into a four-day one.

Communication is crucial, too. “Our communication internally and externally has become better because of this event,” Robbins noted.

The utility now participates in a newly created emergency operations center that brings leaders from impacted fire departments, police, medical teams and local governments together in one place for decision-making. “I’m in direct communication with the operations center, which helps them know where there are issues and how to respond.”

Most important, Robbins said he’s committed to making sure his crews understand that utility

policy is safety first. “Linemen have the mentality that they’re the ones who go in and fix things, but sometimes that’s going to cost you or put you in harm’s way,” Robbins said.

In a recent windstorm, crews were ready to get power back on, but Robbins nixed it. “Go back to a safe place and respond once this thing passes,” he told his team.

Community decisions and adaptability

Early in May 2007, Greensburg, Kansas, didn’t stand a chance against a tornado that hit level five on the Enhanced Fujita scale. The winds topped 200 miles per hour, leaving 95% percent of buildings in the town of about 1,500 people toppled.

“We had a power plant that was destroyed and all of our overhead lines and infrastructure, too,” said City Administrator Stacy Barnes.

The city’s water distribution system was underground, and only suffered some damage requiring repair.

Greensburg made a name for itself with a citywide goal to rebuild sustainably. The town now has the most LEED-certified buildings per capita in the world and gets 100% of its power from a nearby wind farm that feeds into the Kansas Power Pool. This way, the utility gets the reliability support of being grid-tied yet still is one of the few communities in the U.S. powered exclusively by renewable energy.

These moves have made Greensburg famous. This town, which now has about 900 residents, has been covered by *USA Today* and Discovery Channel, and it was featured in President Obama’s 2009 State of the Union address.

Barnes noted that the meaning of the word “resilience” has changed for her over time. “It looks different when you’re looking at debris and devastation,” she said.

Now, she thinks about resilience as many small towns in the U.S. do. “Rural communities across America that are dwindling in population: How do we be resilient, slow that population loss and grow our communities?” she asked.

In Greensburg, the whole process of rebuilding sustainably reflects community input. “There were a lot of community meetings for public projects where people could come and put Post-it notes on layouts and designs to give feedback,” Barnes recalled.

The town still operates this way. Earlier this year, Barnes took plans for a new playground to a crowd at the elementary school, so the children — from kindergarten through fifth grade — could pick their favorite design.

Another important town addition came after a nonprofit organization was founded by locals to build and operate a building on Main Street that houses retail and office space as well as a restaurant.

“Nobody builds a town from scratch,” said Barnes. “There’s no manual you can pull off the shelf that says how to do it.”

To other communities facing a massive rebuilding process, Barnes said, “Don’t make rush decisions. It’s easy to want to have a sense of normalcy back, but make sure you’re gathering all the information you can to make the best decisions.”

As an example, she pointed to the facilities in town that put in their own wind turbines, then took them down again once they realized how much maintenance and upkeep they require. These include the local school, hospital, and a retail outlet.

Barnes also cautions that devastation will bring change, and communities should embrace it. “Be ready to evolve and change as part of resiliency,” she said. “If you’re not changing, you’re dying.”

“We couldn’t have done any of this without our community coming together to make it happen,” Barnes said.

Clear processes and helping hands

Natural disasters aren’t the only threat to a utility’s operations. The town of Newberry, Florida, which has nearly 7,000 residents, experienced a COVID-19 outbreak in

late 2020. At one point, the entire customer service department and a portion of finance department personnel needed to be isolated, thus straining continuity of services.

The outbreak occurred during an especially busy season for the utility. “Because of Florida homestead laws, we have a number of new customers seeking to close on their home before Dec. 31 with new service,” said Dallas Lee, the city’s finance director. “By doing so before the start of the year, it can save money on property taxes.”

December also comes with more planned time off, so when staff started testing positive they found themselves stretched even thinner.

How did the city manage to get through it? Staff had already begun to work from home months earlier when the utility shut down in March 2020, said Tammy Snyder, customer service supervisor for the city. In fact, she assisted with complicated procedures multiple times a day while working from home.

The pandemic-related shutdowns also prompted the utility to jumpstart a transition to online services, such as paperless applications, a chat feature on the website, and online outage reporting. “COVID prompted us to move into certain technologies faster than anticipated, but it was something we wanted to do,” Lee said.

Snyder has created what staff in the customer service department call “the bible,” extensive documentation that outlined how to perform any customer service task. “It may be the easiest thing to do, and it is 42 steps in our bible, but you could give it to a 4-year-old and they could process a utility bill for you,” Lee quipped.

This copious documentation may have been helpful to those who stepped in to support the customer service team. Many calls went to ENCO Utility Services, the call center service Newberry uses.

Lee stated that two employees — one who had previously worked in the department years ago — came to assist at the service counter and drive-up window.

“Everyone from the fire chief to the city manager offered their assistance. It was very heartwarming” Lee commented.

Lee said the experience taught him that cross-training — which already existed departmentally — should go beyond department divisions in a smaller utility like Newberry’s.

“Our experience proves that old motto, that we really are stronger together,” Snyder replied. “We truly have emerged stronger and wiser as a team on the other side of this pandemic.”