

May 10, 2011 (6:30 P.M. rev.) Entergy Arkansas Storm Restoration Progress

Transmission Reconstruction Continues Well After Arkansas Skies Have Cleared

The lights are back on, but the storm restoration in Arkansas is far from over.

Over the last month of storms 59 Entergy Arkansas, Inc. transmission line segments were knocked out, 26 of which required significant reconstruction to put back in service. All but two of those are back on now, and power is being routed around those two so they are not causing customer outages. But the two remaining damaged 500 kV segments are big ones, and for the next few weeks massive resources are being focused on getting them back in service.

What the public may see in the early morning or late evening is a parking lot full of utility trucks, a food caterer, and other services at the former Walmart on Bowman Road in west Little Rock. What they probably won't see are the 320 or so transmission linemen, engineers, safety specialists and others spending long days slogging through snake-infested flooded fields and steep terrain to get to where the trouble is. Mud boots, airboats, bucket trucks and helicopters move workers and equipment to where they need to be to get the power flowing again as quickly and safely as possible.

Both troubled transmission lines are very important to the Arkansas transmission grid and, in turn, to the system grid.

On the line between the Mabelvale and the Mayflower substations, which was hit by a tornado the afternoon of April 25, eight steel lattice towers are either damaged or on the ground. Four are on the high side of the Arkansas River levee, four on the river side. "It's been a challenge," said Allen East, manager of the Entergy Arkansas transmission/substation grid. "The work involves first deconstructing and removing the ruins of the old towers, then building new towers on dry land off-site and flying them into place with helicopters."

On the river side of the levee, floods have covered the foundations with 3-5 feet of water. The solution is to build a culvert around them, pump out the water, then mount the tower. About 130 workers are assigned to the job.

On the line between Keo and West Memphis, damage is considerably more extensive. In storms that hit the morning of April 15, 51 steel lattice structures were knocked to the ground.

To expedite the restoration, engineers determined the best course of action would be to replace the towers with steel H-frame structures. The vendor for these poles, Valmont Industries, Inc., based out of Birmingham, Alabama, is working double shifts to meet the tall order. Meanwhile, almost 200 workers are in the field rebuilding the line section damaged during the storm. The first step is to drive foundations – 48-inch-diameter steel caissons – at least 20 feet, but preferably 30 feet, into the ground. Using a pile driver (basically, a giant vibratory hammer) to drive the caissons, this takes anywhere from one to six hours to drive to the required depth, depending on the soil. The structures are transported to their location along the right-of-way with a helicopter.

Then it's a matter of bolting the uprights to the foundations, adding the cross arms and all the hardware for hanging wires, then, finally stringing up three heavy 500 kV aluminum conductors across 11 miles of rice, corn and soy bean fields and fish ponds.

Large-scale power restoration work has been likened to a military operation and all the logistics that go with it. Workers typically put in 14-16 hours a day when doing storm restoration, and when they're off they need to rest up and refuel their bodies. The approximately 150 contractors in from out of town sleep at any of several local hotels.

Some park their trucks at the work site and carpool in pickups to the staging site, then to their hotels. Some drive their bucket trucks everywhere they need to go.

Food is more complicated. "It got to the point that commercial restaurants couldn't handle the load," said Jay Hartman, who's regular job is manager of customer operations support for Entergy Arkansas, but during storms he's the go-to guy for logistics management. "It would take two hours to get breakfast sometimes." When time is money, that wouldn't do.

So Hartman set up a staging site at the former Walmart location on Bowman Road in west Little Rock, including a temporary catered restaurant/tent that can feed 150 people a hearty breakfast on-site and send the men into the field with a box lunch. In the evening they eat dinner at the staging area.

This arrangement will stay in place for up to three weeks.

"It's been a tough spring, but we have the expertise and the resources to get the job done," said East. "Most importantly, we have a can-do attitude to tackle the task and get it done safely. We have an amazing and dedicated group of people here in the transmission group, and they're really earning their keep right now. Kudos to the many contractors working on this project, too. We couldn't do these huge projects without them."