

Quick Response Energized Rescue Efforts and Restored Safety to Homes and Businesses Following Devastating Alabama Tornadoes



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Greg Rohan
Whitehead & Associates

Challenge

In April 2011, tornadoes ripped through 132 miles in northern Alabama causing more than \$300 million dollars worth of damage and killing more than 120 people in 19 counties across the state. A state of emergency was declared by Governor Robert Bentley and the damage was so widespread it affected thousands of homes and businesses and knocked out power to nearly 200,000 homes and facilities.

Despite the storms being the worst tornado outbreak in more than 30 years in that area, Alabama Power was able to restore power to more than 95 percent of its customers within a week after the devastation, more than half received power within three days.

“We knew immediately that they were going to need assistance. It was bad enough that the communities were trying to help the sick, injured, and lost. The very last thing we wanted was for them to go without power, too,”

explained Greg Rohan, from Whitehead & Associates.

Aided by tell-tale smart grid diagnostics employed by Alabama Power, outages were reported and Whitehead worked with MacLean Power Systems to supply the equipment needed to make repairs.”

Prior to the spring tornadoes, Alabama Power company’s Outage Management System (OMS) was integrated in late 2010 into an Advanced Metering Infrastructure (AMI) System. The addition of the AMI system allowed the utility to quickly assess which meters were without power in order to obtain up to date outage information following the storm event.

The tornado damaged a number of transmission facilities in addition to leveling homes and businesses. The challenge was not only to identify which structures needed power but to also procure parts for the damaged



transmission facilities, which can take several weeks under normal circumstances.

Solution

“Transmission materials are really hard to come by, even in a normal situation,” says Rohan. “It typically takes a few weeks. In this case, not only was time of the essence but the power company was getting real-time reports of damage as its people went out to inspect the transmission facilities. So they weren’t exactly sure at first what equipment was needed, only that power wasn’t working at those facilities.

“Fortunately, in working with MacLean, which has manufacturing facilities in Birmingham, Alabama, we were able to turn its’ manufacturing facilities into a storm restoration operation center and get Alabama Power more than 100 custom assemblies in less than a few days.”

“We were glad to create a solution that worked quickly for all of us,” said Anthony Popwell, Birmingham Director of Operations at MacLean Power Systems. “As part of the community we were also affected deeply by the storms and the resulting damage they did. We have never seen anything like it. The priority for us was to try to do anything we could to help emergency efforts and get critical services back up and running as soon as possible.

“Doing so wasn’t easy. Many times, including in this case, the equipment used by a utility is specific to its needs or the needs of individual facilities. Assemblies are put together to meet specific requirements and it usually takes weeks, or even months, to pull everything together and test it. We had days,” explained Popwell.

More than 80 percent of those without power saw it restored within the first week following the storms.

The assemblies were 500 Kv and made specifically for Alabama Power. Throughout the project Whitehead worked with distributor partners to supply more than 4500 hotline clamps, 2,390 fiberglass 2-phase brackets, 2,170 fiberglass 1-phase brackets, 14,750 automatics, 1,462 transmission clamps and their assemblies, and 1,858 cutouts.

Following restoration of power to the majority of the affected areas, Whitehead and MacLean also worked with Alabama Power to get the equipment necessary to address individual projects. They also provided additional manpower and expertise when needed.

“We all live here so this is our community. It is more than just another job. We were fortunately able to rally together and get these parts made and installed so people could at least have power,” says Rohan.

In the five months following the storms, Whitehead, MacLean and Alabama Power have worked together to restore three transmission facilities and two substations, which power roughly 180,000 facilities in the Tuscaloosa and Birmingham areas.