

Hubbell & Border States Sta



When a home or business loses power, manufacturer, distributor, and utility must work together to get the lights back on as soon as possible. No other example illustrates this cooperation better than the response of Hubbell Power Systems and its distributor, Border States Electric, to the needs of utilities after a major, widespread ice storm in the North Central region of the United States.

Hubbell distributor

Border States Electric (BSE), a full-line distributor of Hubbell Power Systems products with corporate offices in Fargo, ND, has branches and offices in Arizona, Iowa, Michigan, Minnesota, Montana, New Mexico; North Dakota, South Dakota, and Wyoming, and a recent acquisition extends their service area into Texas. Operating through five different divisions (Automation, Datacom, Utility, Construction, Industrial MRO, and Power Utility and Gas), BSE has been a Hubbell distributor for many, many years. Aaron Vining, Utility Customer Service Su-

pervisor, BSE, says, "I've been here 10 years and have seen our relationship with Hubbell grow and get even better in that time. We have an excellent relationship with Hubbell."

The fine quality of that relationship is no coincidence. According to Patrick Novak, Marketing Manager, Utility Div., BSE. BSE maintains a dedicated storm inventory for emergencies during the winter months. "We have centralized locations where we bring in extra stock for overhead construction and maintain it through the storm season," he said, adding, "We have our own fleet of trucks plus we can rely on different carriers throughout our areas. As long as the roads are open, we can get the material to where it is needed. We have alliance accounts with utilities that were in the storm stricken area such as Otter Tail Power Company, Fergus Falls, MN; Northwestern Energy, Sioux Falls, SD; and



ny Prepared for Emergencies

Central Electric Cooperative, Mitchell, SD; and we maintain an inventory according to their particular needs. Also, we have 24-hour emergency numbers for our customers to contact us.

Our staff is available to come in and work extra hours, 24/7 if necessary, to get material to our customers.

Key to our ability to respond quickly is our relationship with Hubbell. They have always responded and serviced us in a timely manner with what we need so we, in turn, have been able to service our customers promptly in emergencies.”

This careful preparation by both Hubbell and BSE proved invaluable as BSE responded to the needs of their utility customers following a major post-Thanksgiving ice storm.

Worst ice storm ever hits

The worst ice storm ever to hit the eastern region of SD began as a gentle rain on Sunday of the Thanksgiving weekend, November 27, 2005. By Sunday evening freezing rain moved in and ice began accumulating on trees and power lines. On Monday strong winds brought blizzard conditions and power poles started toppling.

According to Novak, the storm with its freezing rain hit most of eastern South Dakota (SD) from North Dakota (ND) south to Nebraska (NE). It even extended into western Minnesota (MN). As described by Mike Sydow, General Manager of Maintenance and Construction SD and NE, Northwestern Energy, Sioux Falls, SD, “We had broken poles, broken crossarms, broken conductor, and broken insulators. The ice accumulated from $\frac{3}{4}$ inch to 2 inches radius on the lines and formed an airfoil. The blizzard Monday with sustained winds of 40 to 45 mph gusting to 70 mph caused severe galloping of the lines and literally trashed mile after mile of line. It affected virtually our entire customer base with everything from 4160-V distribution lines to 115-kV transmission.” According to the South Dakota Electric Cooperative Connections magazine, the storm caused an estimated \$20 million in damages to 19 of the state’s 29 electric coops; 12,000 power poles were down, about 9000 miles of power lines were damaged, and 21,800 cooperative members were without electricity.

Novak said that although Otter Tail Power Company and Northwestern Energy were the two investor-owned utilities most affected by the storm, the transmission system of East River Electric Power Cooperative, Madison, SD, was heavily impacted as were Cass County Electric Cooperative, Kindred, ND, Central Electric Cooperative, Mitchell, SD, Dakota Valley Electric Cooperative, Edgeley, ND, and Minnkota Power Cooperative, Grand Forks, ND. In Minnesota, Lake Region Electric Cooperative, Pelican Rapids, MN; Red River Valley Cooperative, Halstad, MN; and Travers Electric Cooperative, Wheaton, MN, were also severely hit. Andrew Specht, Material Standards Engineer, Otter Tail Power Company said, “We had broken poles and crossarms, and conductor breaks. The damage was primarily to our distribution and subtransmission system with about 800 poles broken.”

Speaking of East River Electric Cooperative, Dan



Wall, Manager of Transmission and Engineering Services, said, “East River is a transmission co-op delivering wholesale power to 21-member electric distribution systems and services the eastern half of SD from the ND border to the NE border and east to the MN border including 13 counties in MN. This was the worst ice and wind storm the co-ops have ever had to deal with in the state of SD.” East River Electric’s transmission consists of 69-kV lines on wood poles. All in all, the ice storm and blizzard destroyed 1200 East River transmission poles; 750 miles of transmission lines were affected by the storm; and 42 of the system’s substations went out of service.



Comparing this storm to others in his experience, Jim Edwards, Assistant General Manager of Operations, East River Electric Cooperative, said, “East River Electric has been hit hard by ice storms before, but never have I seen such a widespread event. Transmission lines and poles were just flat on the ground along a nearly 200-mile-wide corridor. From a quarter to a third of our load was off line due to the extensive damage.” Sydow said, “In the 28 years I’ve been here, this is the most widespread, largest single event that I’ve ever seen.”



Commenting on the challenges of restoring power to such a widespread area, Larry Ahrendt, Purchasing/Inventory Supervisor, East River Electric Cooperative said, “Along with broken poles we had broken insulators and broken and burnt conductor involving a wide variety of structures, conductor, and hardware. In getting material to our crews, we were working with many different sizes and needs which made getting the right supplies very challenging. Although we keep around 200 poles and structures on hand to rebuild in an emergency, this storm surpassed our safety stock by a lot.”

Central Electric Cooperative, Mitchell, SD, was one of the hardest hit distribution cooperatives. Douglas Schley, Materials and Plant Supervisor, said, “We had at least 3,000 poles down and probably some damage on every east-west line in an area 30 to 40 miles wide and 50 miles north to south. Over a third of our project was affected with six out of eight counties declared a natural disaster by FEMA (Federal Emergency Management Administration). Working with 196 outside linemen, it took us 17 days to get power restored to all customers.”



Restoring Power

Wall reported that because this storm covered such a large geographic area, East River Electric broke the work of restoration down into five regions and in effect ran five separate storm jobs and funneled materials into each region. He said, “We set up a command center for materials and linked this center to engineering. As reports from the field regarding damage came into engineering, they would issue material needs to the command center. In the field, we had the National Guard with snow moving equipment to open roads and help in getting people and equip-

ment up to the lines needing repair. Manufacturers brought materials to our pole yard where it was sorted and in many cases put on National Guard trucks going out into the field.”

Ahrendt said, “Normally an ice storm is centralized in one region. In this case we had 44 different locations in the five regions where we had storm damage. Just the magnitude of the damage was overwhelming. We had 150 people working in addition to our own crews. There was a lot of ingenuity at work to keep the crews supplied with materials and everyone working.”

At Northwestern Energy, Sydow reported power completely restored in the second week after the storm. He said, “We did a lot of temporary work then we went back to rebuild to permanent status. A few products were difficult to come by, such as 115-kV wishbone assemblies, 27-kV and 34.5-kV pin insulators, and ridge irons, because of the large volume required by both Northwestern Energy and neighboring utilities.”

Hubbell and Border States Respond

On Monday, November 28, 2005, at 6:30 am, Tim Kosir, Hubbell Power Systems Territory Manager, Victoria, MN, received a call from Border States to let him know that it was raining in eastern SD and beginning to freeze on the power lines. Kosir responded by notifying various product marketing managers who in turn put key Hubbell personnel on storm alert. Kosir said, “We received our first storm order late Monday afternoon and had it on the road that evening to Sioux Falls. We went into what Hubbell Power calls its storm response mode in which all personal such as customer service, order entry, manufacturing, warehousing, and shipping are available 24/7 to do what is necessary to get products to our customers.” Kosir reported that Otter Tail Power purchased more than 400 115-kV Ohio Brass (OB) polymer post insulators for their 115-kV line rebuilding. East River Electric ordered 1000 69-kV polymer suspension insulators late Friday afternoon (December 2) and Hubbell had 500 built and on the road



that evening, he said. On Saturday, December 3, East River Electric ordered 400 2 ½ inch 69-kV OB polymer post insulators which were manufactured and shipped on Monday, December 5, along with the remaining 500 polymer suspension insulators.

Novak said, “Hubbell had their customer service people available to us at all times. One of the major features of Hubbell is that we are able to place orders directly to their distribution center in Centuria, MO. They have the material there for the most part and deliver what we need on time. We can plan for the average storm, but this event was so large that we had to rely on our manufacturers and Hubbell had a great process to get us through it.” Novak said that on a scale of 1 to 10, “Hubbell rates a definite 10, absolutely, because they have a planned process to take care of any emergency, plus what they didn’t have in stock they were able to manufacture promptly. Hubbell even ships product on dedicated trucks so it gets here in less than 24 hours, rather than three to five days. From customer service to manufacturing, their response was top notch. The Hubbell people understood immediately that this was an emergency and reacted accordingly.”

Chad Low, Utility Inside Sales for Border States related, “We were getting daily trucks from Hubbell that would arrive at our warehouse sometimes late at night. The materials were unloaded then put on our trucks for delivery to our customers the next



morning. The following morning we'd have another Hubbell truck in. While we were working sometimes from 6:00 am to 2:00 am the following day, we could not have served our customers as well without the excellent response and help from Hubbell. No other manufacturer could have responded the way they did."

Citing an example of Hubbell's dedicated responsiveness, Sheila Larson, Inventory Planner for BSE said, "Jo Ann Peyton, our Hubbell customer service person for this area actually drove her own car to Columbia, MO, from Centralia, MO, on a Saturday to get some Fargo line splices on a plane to us for overnight delivery."

Central Electric Co-op was the first customer to contact BSE according to Brad Kvalheim, Utility Account Manager, Border States. He said, "That call came in just after midnight early Monday morning. They didn't know exactly what they needed, but knew they needed materials because they were out there dealing with storm damages all day Sunday. They said, 'We've got a list of material we're sending. We don't expect it right now, but we're going to need it tomorrow.'" Low said, "Monday was the first day of recovery and Central Electric was the only customer to get a delivery that day. The roads were nearly impassible, but our Border States warehouse foreman made the delivery, taking about 4 hours to travel the 75 miles from Sioux Falls to Mitchell."

Recounting the same incident, Schley from Central Electric said, "I placed my first order just after midnight Sunday night. I had Brad Kvalheim's home number and actually got him out of bed. He got the order filled early the next morning and got a truck on the road, realizing that if I was calling at that

time of the night, then there was something major going on."

Otter Tail Power dispatches out of a central warehouse. As explained by Specht, "Shipments come into our central stores and are repacked before going out to the field. Occasionally BSE would bypass our central stores and go right to the storm affected area. BSE got us virtually everything we needed and on time. The storm was so wide ranging that we exhausted the local supply. BSE was very creative in finding material from other areas."

Lori Peterson, Procurement Coordinator, Northwestern Energy, is responsible for all the purchasing for SD and NE. To get material to where it is needed for rebuilding, she said, "We use our own trucks, but also BSE delivered to any of our job sites directly as needed. They ran trucks continuously and were willing to make deliveries at any time of the day. Also BSE brought people from their Fargo, ND and Sioux Falls, SD offices to work in our warehouse facility. They helped expedite delivery on material needed. It helped that we didn't have to try and reach someone by phone."

Ahrendt said East River had ordered various sizes of Ohio Brass 69-kV polymer insulators: suspension, side-mount, and pole-top. He said "In many cases Hubbell was able to borrow from other customers who were not in as dire need as we were to satisfy the order. Also, Hubbell actually stopped the usual production lines and manufactured what we needed instead. I think that everyone at Hubbell did everything that was humanly possible to supply us with the necessary materials, such as running designated trucks to expedite delivery." Summing up his observations, Ahrendt said, "I think Hubbell and BSE did an extraordinary job to help us out of this situation. I really couldn't be happier with the results."

Conclusion

Through cooperation, careful planning, real preparation, dedicated personnel, and understanding and responding accordingly to their customer's needs, Hubbell Power Systems and Border States Electric always help utilities get the lights back on as soon as possible. ■

Photos provided by NorthWestern Energy of Sioux Falls, SD, Otter Tail Power Company, Fergus Falls, MN and East River Electric Power Co-op, Madison, SD.