



The waters of the Knife River flooded southern parts of Beulah. Photo courtesy Julie Van Inwagen, taken March 23, 2009.

POWERLESS

FLOOD • ICE • BLIZZARD • THUNDER • LIGHTNING • SNOW

By Erin Huntimer, Tracie Bettenhausen and Kelly Jo Wald

It could have been a scene from any given Saturday. A handful of people from a south Beulah neighborhood gathered around an old pickup truck, taking a break from the afternoon's chores, sipping a cold one.

But taking a step back, you realize this is far from normal. Chunks of ice litter front lawns. Trees are snapped in half. Sheetrock, couches and carpet are piled at the curb.

These weren't chores; these were recovery efforts. Neighbors were taking a much-needed break from picking up the pieces after the flood waters of the Knife River had left their homes in ruins.

It was a scene likely repeated in Hazen, Linton, Bismarck, Fargo, Valley City and many other North Dakota towns this spring. Run off from record snowfall and large ice jams pushed rivers over their banks in March, inundating homes and businesses and washing out roads and bridges.

To add insult to injury, two winter storms hit after the waters had risen, piling almost a foot of snow and ice on top of the flood. Inevitably, temperatures warmed up, and the snow melt from the late storms caused rivers to crest again in mid April.

Basin Electric's employees, member co-ops, and its facilities were among those deeply affected by what has been called a 100-year flood event. Following are some of the stories that emerged as the waters receded.

Leland Olds shuts down, employees step up

On March 24, as tributaries dumped more and more water into the Missouri River, two ice jams – one to the north of Bismarck, the other to the south – sent flood waters flowing into low-lying neighborhoods. To help alleviate flooding, for the first time in history the U.S. Army Corps of Engineers cut flows from the Garrison Dam to zero. Normal spring releases from the dam are approximately 20,000 to 22,000 cubic feet per second.

Basin Electric's Leland Olds Station, located along the Missouri River south of Stanton, relies on the river for cooling water and steam production. By March 26, both units of Leland Olds Station were shut down for lack of water. To compensate for decreased generation while the Leland Olds units were shut down, Basin Electric started its peaking units at Groton, SD, as needed, and also bought power on the open market.

Mark Thompson, Leland Olds Station plant manager, says that while the units were off line, employees worked hard to keep critical plant

systems available. "For example, the river provides the majority of the cooling water for the plant. We had to ensure alternate water sources for cooling during the off period. Second, the fire protection system was charged with the diesel-fired pump, which is located at the river intake," he says.

The Corps resumed releases to 9,000 cubic feet per second by the weekend, and both units were restarted early the morning of Sunday, March 29. However, Unit 1 was restricted to 100 megawatts through the afternoon of March 30, and Unit 2 was not released for full-load operation until early March 31 because of low water levels.

When Missouri River levels rose again in mid April, the Corps again cut releases to about 5,000 cubic feet per second. Thompson says fluctuations in river levels have affected the power plant's ability to produce both boiler-quality water and potable water.

Wayne Backman, Basin Electric senior vice president of Generation, says the impacts of the spring floods cost the cooperative approximately \$800,000. "This was a historical



A diver prepares to set a diesel-powered submersible pump near the intake of the Leland Olds Station. The pump provided water to the fire protection system while the power plant was off line.

situation in several ways. No one was expecting a flood of this magnitude, and this was the first time ever the Garrison Dam has been completely shut down. While this impacted our operations, we appreciate the Corps' efforts to balance the many public interests associated with operating the dams on the main stem Missouri," he says.

Coproduct sales and shipments from Dakota Gasification Company's Great Plains Synfuels Plant have also been impacted by spring flooding. Synfuels Plant Manager Bob Fagerstrom says soggy conditions have kept farmers out of the field, reducing demand for fertilizer products from the plant. Also, he says road restrictions have remained in place longer than usual, meaning the trucks that do haul fertilizers from the plant must carry lighter loads.

"In a typical year, toward the end of April we'd be loading 60 to 80 trucks a day. Our best day so far has been 20 trucks," he says.

During the height of the flooding in Mercer County, trucking routes

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The same storm that hampered the flood response in North Dakota in late March first hit Gillette, WY, on March 23. Heavy snow accumulation and near-zero visibilities stopped construction on the Dry Fork Station for about a day. The blizzard buried four Kubota tractors on site, shown here in a photo taken March 24.



Northern Plains member Chelsea Schwinn helps with emergency sandbagging.

south and east of the Synfuels Plant were closed, also affecting product movement.

Through the floods and the blizzards, Basin Electric employees stepped up in a big way. When waters threatened homes in south Bismarck, Basin Electric CEO and General Manager Ron Harper encouraged Headquarters employees to help with emergency sandbagging operations. Employees at Leland Olds, Antelope Valley and the Synfuels Plant helped their neighbors by sandbagging, hauling furniture out of basements, volunteering as emergency responders and more.

Basin Electric employees donated more than \$2,000 through the cooperative's Dollars for Jeans program in support of their flooded comrades. That money was combined with a corporate donation of \$20,000 to the American Red Cross of North Dakota.

In a memo to all employees, Paul Sukut, Basin Electric deputy general manager, said, "The recent flooding across the state has impacted many, including several of our own. Basin Electric appreciates all your efforts,

whether it was volunteering your time, strength, homes or dollars to help out flood victims. . . . For those of you impacted by the flood, you remain in our thoughts."

Floods cause scattered outages

In North Dakota, chunks of river ice rammed into utility poles with the force of out-of-control automobiles.

In northeast Wyoming, two feet of snow plodded onto the spring-warmed earth.

Power was out. And the weather was making it tough to get to the source of the problem. Co-op employees were working long hours to get the lights back on.

KEM Electric

The flooding in Emmons County started on Saturday, March 21. Ken Berreth, KEM Electric's interim general manager, says each of their linemen put in at least 80 hours over the next week.

Twenty utility poles came down during the Beaver Creek flooding.

The flood waters spread far from the creek's banks. "The rushing water was carrying these huge ice chunks. The chunks were three feet thick and as big as a car," Berreth says. "It's surprising how much weight was behind that ice to shear off the poles like they did.

"I can't really tell you how many outages there were at any one time because it was so scattered. Outages were scattered all over the system. We had linemen out in every direction," Berreth says.

Dakota Valley Electric

In southeast North Dakota, the Wild Rice and James rivers were spilling over their banks, with the Red River getting ready to do the same, says Craig Rysavy, manager of operations for Dakota Valley Electric. "It was just so widespread," Rysavy says.

The co-op lost just a handful of poles to the "moving icebergs," as Rysavy says the ice chunks came to be called. A couple substations stood in two feet of water, but Rysavy says they remained operational.



A Dakota Valley Electric lineman braves the flood waters to repair a distribution line.

Mor-Gran-Sou Electric

Chunks of ice and flooding took down about 40 poles in Mor-Gran-Sou Electric's territory, according to General Manager Don Franklund. Every lineman in the co-op was out doing repairs, plus contractors and linemen from Roughrider Electric. They worked until they were forced back in by water and damaged roads.

"At the peak, 600 of our customers were without power," Franklund says. "And some of them didn't get their power back for several days."

Powder River Energy

On the first day of the snowstorm in Wyoming, Monday, March 23, 3,000 members were without electricity. According to Doreen Schaar, vice president of Corporate Communications at Powder River Energy, drifts taller than nine feet were common in areas throughout Campbell County.

Schaar says 49 linemen were out all day Monday. Because their trucks kept getting stuck in the snow, all crews were called off the road at 7 p.m. They restored power to the 700 members remaining on Tuesday.

In just two days' time, the linemen put in a total of 1,226 hours. Some of those hours were to secure a Pacific Power & Light transmission line that was down on the Power River Energy lines; the Pacific Power & Light crews were able to reach the scene late Tuesday night.

Security and Response Services

Tom Radenz, security and response service coordinator at Basin Electric, says March 23 and 24 were extraordinarily busy days in the dispatch center. On those two days, the center took about 2,000 calls each day. Radenz compares that to March 2008, when the busiest day meant his team took 328 calls.



Ann Byrnes (left), American Red Cross interim director for the West Dakota Chapter, and Mary Tello-Pool (right), American Red Cross – West Dakota Chapter board member, thanked Basin Electric CEO and General Manager Ron Harper May 1 at Headquarters for the cooperative's \$22,000 donation to the American Red Cross to assist with clean up efforts following the spring flooding throughout the region. Basin Electric donated \$20,000 and its employees collected an additional \$2,000 for the cause.

During this time, the dispatch center was staffed at just about double the staff of a normal day; five instead of three during the day and ten instead of six after hours. "What was tough was several members of our own staff needed to sandbag their own homes," Radenz says. "We brought in a lot of food for our crews during that week. But everyone pulled together and worked as a team to get the work done."

Employee loses home to flood



Monty Reub

Monty Reub, field technician at Dakota Gasification Company, dealt first-hand with the unforgiving nature of the spring flood.

Although the second round of flooding did not cause problems for Reub's property, the first round was enough to leave him without a home after the water filled the basement and rose over the main floor. One of

the basement walls cracked under the pressure and shifted inward about one-half inch. Because of the damage to the foundation and main level flooring, his home was unable to be saved.

Reub says he began preparing for the expected flood by boarding up his basement windows and using silicon to seal them, and sandbagging around his home. Unfortunately, the rising waters paid no mind to his efforts.

Although he lost a central air unit, furnace and water heater, Reub was able to salvage his washer, dryer and furniture on the main level by placing them in higher areas.

Though his home will be torn down, Reub is looking on the bright side of things. He says his home was "old to begin with and had previous problems." He plans to rebuild in the same location but construct his new home a little differently by using a four-foot foundation instead of a basement. Reub's home is located on the south end of Beulah near the park and golf course.