



Nobles Cooperative Electric: Power Up in Nobles County

Full Mitigation Best Practice Story

Nobles County, Minnesota



Nobles County, MN - In the span of two weeks, Nobles Cooperative Electric (NCE) experienced two of the worst ice storms ever to hit a Minnesota electric cooperative. In November 1996, line workers saw ice as thick as three inches in diameter coating the co-op's power lines. More than 1,800 poles were broken during the storms. The estimated outage time per consumer on average was 118 hours. Crews from 16 rural electric co-ops in Minnesota and Iowa, plus three contractor firms, helped to restore service. Costs totaled nearly \$10 million for restoring power and rebuilding the system after the destructive wintry weather.

At the time of this storm event, Nobles Cooperative Electric serviced 4,900 customers through a system of 1,745 miles of overhead line and 351 miles of underground line. The cooperative's service area covers nearly 1,800 square miles in the counties of Nobles and Murray in southwest Minnesota.

By January 1998, crews replaced a total of 474 miles of power lines. Former NCE General Manager William Motl described recovering from the 1996 ice storm "like raising livestock and farming 1,000 acres in a normal year. The next year the livestock operation remains the same, but you farm 10,000 acres for that year only. It was a big undertaking."

NCE power lines received ice storm damage in four of the six years leading up to the 1996 storm. Ice, tornadoes and winds had knocked down power lines throughout the system but most often in NCE's northwest corner: the Buffalo Ridge area. The glacial ridge is one of the highest elevations in the state and lies within the open terrain of Midwestern farmlands. (It's windy enough to now be the home of 400 power-generating windmills.)

"Whenever a storm came through the area, the Buffalo Ridge area was prone to outages," said Lois Mack, Manager of the Conservation Improvement Program and Special Projects at the Minnesota Department of Commerce.

Hazard Mitigation Grant Program (HMGP) funds gave NCE the opportunity to mitigate against continuing power outages occurring in the Buffalo Ridge area. The co-op implemented a \$741,295 hazard mitigation project, converting 36.4 miles to underground line.

"Underground wire has improved so tremendously it has become cost effective. With the advent of technology providing better coating to prevent water from getting in and animals from chewing the line, it was the answer for the Buffalo Ridge area," said Mack. "We had severe storms there last year and there were no problems in electric service."

"Through the Mitigation Program, our system has become stronger and more reliable. Without FEMA's help our members' bills would have significantly increased. Since 1936 NCE has been a vital part of the rural communities in Murray and Nobles counties. With the help of FEMA, volunteers, employees, directors, neighboring cooperatives and contractors, we were able to keep our vision and tradition alive and well," said Line Superintendent Glenn Kluis.

Activity/Project Location

Geographical Area: **Single County (County-wide)**

FEMA Region: **Region V**

State: **Minnesota**

County: **Nobles County**

Key Activity/Project Information

Sector: **Public**
Hazard Type: **Winter Storm**
Activity/Project Type: **Utility Protective Measures**
Activity/Project Start Date: **11/1996**
Activity/Project End Date: **01/1998**
Funding Source: **Hazard Mitigation Grant Program (HMGP)**

Activity/Project Economic Analysis

Cost: **Amount Not Available**
Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **No**
Value Tested By Disaster? **Unknown**
Repetitive Loss Property? **Unknown**

Reference URLs

Reference URL 1: <http://www.fema.gov/business/guide/section3f.shtm>
Reference URL 2: <http://www.hsem.state.mn.us/>

Main Points

- In November 1996, line workers saw ice as thick as three inches in diameter coating the co-op's power lines. More than 1,800 poles were broken during the storms.
- NCE power lines received ice storm damage in four of the six years leading up to the 1996 storm. Ice, tornadoes and winds had knocked down power lines throughout the system but most often in NCE's northwest corner: the Buffalo Ridge area.
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Downed power lines was the result of the 1998 ice storm



Buffalo Ridge is constantly blanketed with snow and ice