

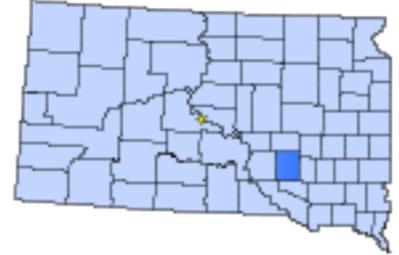


South Dakota Tri-County Electric Cooperative

Full Mitigation Best Practice Story

Aurora County, South Dakota

Aurora County, SD - Winter ice storms in early 1995 brought heavy mechanical stress to the overhead power lines, poles, hardware, and wire in this City. As a result, the utility was weakened, and its ability to withstand normal stress brought about by natural forces was impaired.



Damage to electric power lines in 21 counties was caused by an unusually foggy January weather. Continuous fog in many areas resulted in a heavy crust of ice forming on many of the powerlines in central South Dakota. The fog-crust was reported to be from 3-5 inches in diameter. The addition of high winds caused power poles to snap. Deep drifts of snow made it difficult for power company linemen to gain access to the damaged power lines and in many areas county snow removal equipment was required to provide access. According to reports submitted, 13,435 households were without electric power for varying periods of time. The maximum time without power was 12 days. Early damage reports indicated that damages would exceed \$3,218,126. More than 1700 power poles had to be replaced.

These damages would have made the lines increasingly vulnerable to each ice storm. The damaged overhead line was replaced with an underground distribution line of the same voltage. Cable was buried four feet under the ground's surface. Approximately 770 people depended on the electricity provided by this line.

By replacing the overhead line with underground cable, the threat of ice and wind damage was decreased. The use of underground cable will also eliminate "sagging," which all damaged power lines will experience over time. Property and economic losses due to unexpected electrical outages will be reduced.

Activity/Project Location

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

FEMA Region: **Region VIII**

State: **South Dakota**

County: **Aurora County**

Key Activity/Project Information

Sector: **Public**
Hazard Type: **Winter Storm**
Activity/Project Type: **Utility Protective Measures**
Activity/Project Start Date: **08/1996**
Activity/Project End Date: **08/1998**
Funding Source: **Hazard Mitigation Grant Program (HMGP); Local Sources**
Funding Recipient: **Lifelines - Gas/Electric**
Funding Recipient Name: **Tri-County Electric Cooperative**

Activity/Project Economic Analysis

Cost: **\$316,642.00 (Estimated)**

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Unknown**
Value Tested By Disaster? **Unknown**
Repetitive Loss Property? **Unknown**

Reference URLs

Reference URL 1: <http://www.fema.gov/>
Reference URL 2: <http://oem.sd.gov/Default.asp>

Main Points

- In early 1995, the utility was weakened, and its ability to withstand normal stress brought about by natural forces was impaired.
- Replaced the overhead line with underground cable to eliminate the threat of damage from ice and wind.
- By replacing the overhead line with underground cable, the threat of damage from ice and wind was eliminated.