

Cedar Pole NEWS

Three Minnesota Utilities: Using Cedar Poles Since Inception More Than 70 Years Ago

Shortly after the Rural Electrification Administration was established in 1935, the following three utilities were established in rural southwestern Minnesota. All three use Western Red Cedar Poles in their systems.

Meeker Cooperative

Founded in 1935 by the Meeker County Farm Bureau Association in Litchfield, MN, the Meeker utility was the first cooperative formed west of the Mississippi River, the first to have its organization approved by Washington, DC, and the first to have bids approved for line construction.

A leader in utility technology, Meeker has been using a GIS system for over a year. All linemen trucks are equipped with a laptop providing direct access to their mapping system, and to customer information. All poles can be spotted with this system which greatly accelerates the correction of power distribution problems. This improvement in power quality has meant a 62% reduction in

power outages since 1998.

Cedar poles have always been a part of the Meeker electrical distribution system. Most distribution poles are Western Red Cedar, and include 40 ft. Class 4 and 35 ft. Class 5 poles.

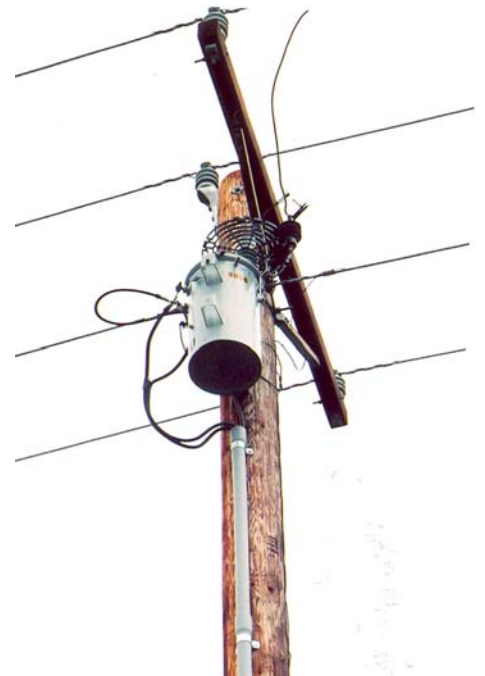
Using full-length treated poles, the utility prefers cedar for its durability and long life.

Power consumption in the Meeker Cooperative is primarily residential and agriculture with 5% commercial service. The 7.2/12.4 kV system has more than 26,000 cedar poles with 8,100 service connections.

Most power is supplied to Meeker by Great River Energy with some 5% to 10% supplied by Western Area Power Administration (WAPA). Power from Great River Energy is primarily coal fire generated with some gas fired plants for peak load periods. Power from WAPA is hydro generated.

Within the last year Meeker has completed a number of power quality

projects, such as adding plastic pole wrap animal barriers to every pole where there was grounded equipment overhead, adding an animal guard above all



This new cedar pole distribution line east of Litchfield, MN, used PVC animal protectors on the transformer poles.

Minnesota Coops Continue Using

transformers, and replacing all spark gap transformers.

Every summer 10% of the utility's poles are inspected by digging down the side of the pole, taking borings, providing remedial treatment if required, and wrapping the pole to two feet below grade. This is done as part of their ongoing inspection and maintenance program. Poles taken out of service are cut to 14 ft. or less for re-use as fence posts or other non-structural purposes.

Kandiyohi Power Cooperative

Also established in 1935, Kandiyohi Power Cooperative in Willmar, MN, found it difficult to sign up members during the depression. Securing easements for power lines was also difficult as some people were concerned their livestock



A recent project, this new 1.25 mile cedar Atwater line was constructed by Kandiyohi Power to replace a line on private property. These Western Red Cedar poles are Class 6, 35 ft.

Counties. Service is provided through 8,000 connections.

About 75% of the utility's power is supplied by Great River Energy and 25% from WAPA.

Willmar, MN, is known as the "Turkey Capital of the World," and turkey raising operations are the largest commercial use of power in the area. From here turkeys are shipped throughout the country and exported overseas.

The coop uses a reasonable variable rate, with power in their southern area delivered mostly for agricultural use, and the northern area being primarily residential.

Kandiyohi contracts their inspection and maintenance program to an independent supplier. Ten percent of the system is inspected and maintained each year.



Kandiyohi Power upgraded and replaced cedar poles to a three-phase line with new Class 5, 35 ft. cedar poles on this line near Prinsburg, MN.

would be electrocuted if poles were allowed on their property.

By 1939 the contract for power lines was let, and electricity was being delivered on cedar poles to more than 90 rural homes.

Virtually all poles are still Western Red Cedar in the Kandiyohi Power system. The utility appreciates cedar for its durability, longevity and climbability.

Kandiyohi Power has about 23,000 poles in service, with 40 ft. Class 6 and 35 ft. Class 5 cedar poles comprising most of the system. Some 60 ft. poles are used for crossings and other special locations.

The utility's 900-square mile service area is primarily Kandiyohi County with some connections in Chippewa and Swift



Poles taken out of service by Kandiyohi Power were recycled for corner post structures on this elk ranch north of Wilmar, MN.

Cedar Poles for Their Durability

Minnesota Valley Light and Power Association

Established in the 1940's, this utility is headquartered in Montevideo, MN, and services Lac Qui Parle, Yellow Medicine and Chippewa Counties, plus portions of Lyons, Swift and Redwood Counties, all in southwestern Minnesota.

Minnesota Valley's electrical system includes some 210 miles of 69 kV transmission poles, with 3,700 cedar transmission poles, mostly 60 ft. to 80 ft. Some H1 and H2 90 ft. cedar poles are also used. It is the only coop in the state with transmission lines.

Most of the utility lines were built in the late 1940's. And cedar is chosen because of its durability and long life, and because it gives under the snow loads prevalent in the area.

The 7.2/12.4 kV distribution system includes about 2,900 miles of line with about 60,000 cedar poles mostly 30 ft. to 35 ft. Class 4, 5, and 6. The system is served with 5,400 connections.

About 500 new cedar poles are installed each year due to road and service changes, construction and general maintenance. All cedar poles are full length treated.

Last year the utility experienced an all time peak energy use of 37,723 megawatts due to corn drying loads.

Six miles of new line were constructed last year with 70 ft. Class 1 cedar poles to serve a new ethanol plant in Granite Falls, MN.

Minnesota Valley Power's system has 16 substations. Power is supplied to seven of these by Basin Electric and nine are supplied by WAPA.

Regular inspection and maintenance is handled during the summer with remedial treatment as required.



This newly constructed six-mile line using 70 ft. cedar poles serves a new ethanol plant in Granite Falls, MN. To pass under a transmission line in the area, the new line was put underground for 80 ft.

Minnesota Valley Light Adds New Six-Mile Line To Serve Ethanol Plant

Last year Minnesota Valley Light added six miles of cedar pole lines to serve a new ethanol plant in Granite Falls, MN.

Ethanol is a high octane, liquid and renewable fuel, produced by fermentation of plant sugars, and is typically produced from corn and other grain products. The Granite Falls Community Ethanol Plant processes approximately 14 million bushels of corn into 40 million gallons of ethanol a year.

Minnesota has a minimum 10% ethanol requirement for gasoline. Trial vehicles have been able to run on an 85% ethanol fuel. Ethanol sells for approximately the same price as unleaded gasoline, and is being used to promote energy independence. Advantages of ethanol use, include reduction of the incidence of greenhouse gas emissions, it is biodegradable, and does not contaminate water.



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Meeker Cooperative Using Global Positioning Tool

Meeker Cooperative uses a geodatabase for facilities management, outage response, staking, field service, and vehicle location.

"We wanted more flexibility with data tied to our maps," says Kevin Louis, Meeker's operations and IT manager. "There is so much utility data that needs to be managed, from pole inspection, pole data, outage information, regulation, and special equipment. And we wanted to tie this data to maps."

For example, demand information is relayed to field personnel so they know if transformers are overloaded or under loaded.

Blinking lights are shown on maps to see problem trends in line segments with outage status and response coded by color.

The project also captures pole inventory and ties this information to

pole testing. It combines underground inspection data, the regulator database, and customer data.

All Meeker trucks now have laptops that are tied to the geodatabase, allowing field personnel to update information as frequently as needed.



All poles in the Meeker Coop system are tagged like this pole for easy identification in their GPS system.

DID YOU KNOW?

Resistance to decay is one of the outstanding characteristics of Western Red Cedar.

Cedar's heartwood produces chemical compounds that naturally resist decay.

Preservative treatment extends cedar's long service life up to 80 years with little maintenance.

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