

Cedar Pole NEWS

Colorado Utilities Rely on Red Cedar For Longevity and Reliability

Although servicing a vastly different area and different customers, Morgan County Rural Electric Association and City of Fountain Electric Department, both in Colorado, find that Western Red Cedar is their choice for utility poles.

Morgan County REA is a utility covering 3,000 square miles in northeast Colorado. Of the 3,000 miles of line, Morgan County REA has some 49,000 distribution poles -- most of which are Western Red Cedar.

The utility organized in 1937, started using cedar poles, moved to other poles, and have returned to using cedar. They prefer cedar for its climbability and long-lasting life.

Serving the six counties -- Adams, Arapahoe, Logan, Morgan, Washington, and Weld -- the utility serves about 25,000 people with some 8,300 meter connections.

Electricity for irrigation is among the larger uses of power for Morgan County REA. Commercial Power consumption



A new 40 ft. Class 6 cedar pole line was recently installed to provide power for irrigation of sugar beet, corn, alfalfa, and pinto bean crops.

uses another 35%, with residential consumption approximately 30%.

The utility has about 8,300 meter connections and serves about 25,000 customers. With about 49,000 distribution poles in services, most are Western Red Cedar.



Many of the Morgan County REA lines have been re-cabled to increase capacity. On this line, east of Brush, six heavy cables of 477 circular mills each are supported on Western Red Cedar poles.

With a limited number of transmission lines of 115kV and 69kV, the bulk of their lines are 7.2kV and 12.5kV distribution lines. Cedar poles range from 30 foot Class 6 to 45 foot Class 4.

Power is supplied to Morgan County REA by Tri-State Generation and

Colorado Utilities rely on Cedar Poles

Transmission Association. About 85% of this power is generated with fossil fuel, and the remainder by hydro generation.

Staying current with technological developments, Morgan County REA is especially proud of the SCADA program they have installed. Their success has brought delegates from India, the National Rural Utility Service, the National Rural Telecommunications Cooperative and other cooperatives to learn how well their SCADA program was working.

Morgan County REA, established in 1937 began using cedar poles for their lines. Over the years they have used

other species, but returned to cedar poles for their climbability, long-lasting life, light weight and ease of handling.



Morgan County REA maintain a good inventory of cedar poles in their yard. They use full-length, pentachlorophenol treated poles.

Fountain City Electric Utility, serves a suburb of Colorado Springs, a rapidly growing area with a population of about 15,000 people. Fountain was named an All-American city in 2001 and 2001, and is best known for being near Pikes Peak with its cog railway which takes visitors to the peak.

The utilities history dates back to 1920, has a 25-mile square area and is



This line of 60 ft. Class 5 cedar poles carries a 12.5kV line across Monument Creek.



When new cedar poles are placed in service they are equipped with raptor protection, including the device shown here, as well as a ten ft. crossarm.

about three miles wide and eight miles long. Fountain Electric Utility has been using cedar poles for 40 years, has about 4,500 poles in service with some 90% being cedar. Sizes range from 30 ft. to 60 ft., mostly Class 4, and are all butt treated. Voltages are 7.2kV and 12.5kV .

Fountain has a rotating inspection program that sees all poles inspected every five years. When poles are taken out of service the treated ends are



This 50 ft. Class 4 cedar poles carries double circuit 12.5kV and 7.2kV lines.

removed, and the remainder is re-used for other purposes.

Power consumption is 92% residential use, 7% commercial use, and 1% other uses, and is supplied by Municipal Energy Agency of Lincoln, NE, and Western Area Power Administration. Most power is from coal fired plants with some WAPA power wind generated. The utility plans to increase its power consumption from from green sources, such as wind energy.

Two Treatment Methods -- Both Effective

Both the utilities interviewed for this issue of Cedar Pole News use Western Red Cedar Poles for most of their distribution, and some transmission lines. Two utilities -- two preservative treatments. Both treatments are readily available, and both work well for the utility industry. Following is an explanation of those treatments.

Butt-Treated Poles: A Cost-Effective Product With Low Environmental Impact

Historically, butt-treated Western Red Cedar was the backbone of most early electrification in many areas of the United States and Canada. Some of the early lines are still standing and have provided service for 100 years.

Western Red Cedar is the only poles species with natural decay resistance necessary to give long service life without being full-length treated. Cedar is also the only species for which a butt-treatment national standard is published.

Butt-treated cedar is a particularly environmentally friendly product as well as providing a very economical pole. This is possible as only the butt plus one foot above the ground is treated which means a butt-treated pole uses only 10% to 20% of the preservative required for full-length treatment for other species.

In addition, when a butt-treated pole is removed from service, the treated portion can be cut-off and used for posts, while the rest of the pole can be milled into lumber or siding. As a result,

butt-treated poles have a very low environmental impact during their service life, and upon removal offer easy disposal.

Butt-treatment specifications are published in American Wood Preservers Association Standards (AWPA) and by the Canadian Standards Association (CSA). Pentachlorophenol, creosote and copper naphthenate oil-borne preservatives can be used for the butt-treatment process.

Western Red Cedar, Alaska Yellow Cedar and Northern White Cedar are the only species which qualify for this type treatment. By far, the most prevalent species using butt-treatment is Western Red Cedar which is widely used throughout the western U.S. and Canada.

Unlike other species, cedar's heartwood produces chemical compounds called extractives that naturally resist decay, fungi and insects. Cedar heartwood is naturally durable and does not need or accept treatment. Cedar is lightweight, easy-to-handle and withstands severe weather conditions. The species straight grain and uniform texture minimizes pole fracture caused by severe weather or mechanical damage.

Butt-treated poles are set vertically in a tank and treated to one foot above groundline, to AWPA or CSA standards. Cedar is the only species where this economical method of treatment is recommended. Penetration and retention requirements in the groundline area are the same for both full-length treatment as well as butt-treatment. Cedar poles have been butt-treated since before

1900, and incising was introduced in the 1920's.

As only a little more than the length of the buried portion of the pole is treated, the total pole cost is less. Butt-treated poles are a very cost-effective solution in many areas and excellent success has been achieved with these type poles.

Full-Length Penta-Treated Poles Have Proven Record of Performance

Safety--Pentachlorophenol today is the most commonly used preservative for utility poles. Penta has a 60-plus year track record of environmental safety and proven performance.

Durable and Dependable--Penta-treated cedar poles have often provided a service life of over 60 years. Other cedar poles have lasted over 100 years. Penta gives poles lasting properties, such as: **Moisture resistance** — penta treatment reduces checking and pole twist. **Resistance to insect damage** — penta repels termites and other wood-eating insects.

Environment--Penta-treated wood has a number of important environmental advantages: **Penta is biodegradable**. Studies show that sunlight and bacteria break down trace amounts of penta that may enter the soil, water or air. Penta's low vapor pressure and high absorption quality enables most of the chemical to stay inside the wood. In addition, low water solubility means that any trace amounts of penta that may enter the soil near a pole will not travel very far.

Penta does not persist or accumulate in the environment.

According to data submitted to the EPA as part of the penta re-registration process, penta has a half-life of 14 to 63 days in soil and five to 34 days in water. In the atmosphere, penta's reported half-life ranges from a few hours to a few days, depending on atmospheric conditions. Treated wood poles save roughly 32 million barrels of oil per year in saved energy costs over alternative materials. Penta's in-service life mitigates the need for frequent replacement, thereby helping preserve valuable forest resources. Penta retains the natural appearance of the wood. Utilities prefer

(continued on page 4)

Benefits of Using Western Red Cedar Poles

- A naturally durable wood, resistant to decay, fungi and insects.
- Light weight makes handling and installation easier.
- Straight grain prevents twisting after installation.
- Low conductivity.
- Safer and easier for crews to climb because gaffs dig in for safe footing.
- Strength and flexibility allow poles to withstand extreme weight and weather conditions.
- Long life with treatment processes extends natural life up to 80 yrs. or longer.



Cedar Pole N E W S

2405-61st Ave. S.E., Mercer Island, WA 98040
800-410-1917, 206-275-4753, Fax: 206-275-4755
email: info@wrcpa.org

PRSR STD
U.S. POSTAGE
PAID
PERMIT #315
SEATTLE, WA

Two Preservative Treatments

the “tree-like” look of penta poles to the intrusive visual impact of non-wood poles. Penta manufacturers are committed to improving the environmental performance of their products, while maintaining the highest level of cost-effective, in-service performance. Over the past two decades, microcontaminants in penta have been reduced dramatically, and manufacturers continue to seek new, practical ways to produce penta of even higher purity.

Low Emissions--Penta has a number of important characteristics that actually help reduce emissions and discharges to the environment. Penta is an organic, oil-borne preservative which effectively penetrates wood, ultimately reducing the risk of leaching and emissions. Penta’s low water solubility decreases the potential for preservative leaching, and low vapor pressure results in very low air emissions from treated wood.

Numerous scientific studies conducted over many years demonstrate that the trace amounts of penta that are emitted to the environment do not present a health or environmental risk. The movement of penta treating solution down the pole due to gravity serves a useful purpose by providing additional preservative at ground level where it is most needed to control

fungus attack. Soil testing from sites throughout the United States indicates that, on average, less than one-third of a teaspoon, only 1.6 grams, of penta is present in the soil around a typical penta utility pole. In addition, studies conducted by the Electric Power Research Institute show that penta concentration in soil decreases very rapidly with distance from the pole.

Reusable and Recyclable--Even when they are removed from service, penta poles have a useful life. Because they are not hazardous waste, penta poles can be reused and recycled in a number of ways, such as fence posts, lampposts and support for vehicle shelters. They also can be burned for energy in some combustion units and industrial boilers.

Thoroughly Tested--As a pesticide, the Environmental Protection Agency (EPA) requires preservatives to undergo regular, in-depth testing and analysis. To develop the state-of-the-art data required by the EPA, penta manufacturers spend millions of dollars developing numerous toxicological studies and risk assessments by leading experts in the fields of toxicology, environmental assessment and occupational exposure. In every case, using highly conservative assumptions, the latest scientific data show that penta treated poles do not pose significant risks to people, wildlife, aquatic life, or the environment.

DID YOU KNOW?


There is more forestland now than there was 100 years ago in the U.S., and 150 years ago in Canada.

Forestlands in the U.S. grow more than 30% more wood than is harvested each year.

Cedar Pole News is a publication of the Western Red Cedar Pole Association, which is solely responsible for its content.

Cedar Pole News is sponsored by the following companies:

Bell Lumber & Pole Company
Carney Products Ltd.
Gorman Brothers Lumber Ltd.
J.H. Baxter, a CLP
McFarland Cascade
The Oeser Company
Stella-Jones, Inc.

 Printed in the U.S.A. on recycled paper.
Copyright 2006, Western Red Cedar Pole Association

*Check out our website--
www.wrcpa.org*