

## President's Report



William R. Dodds  
President/CEO

## The differences between overhead and underground power lines

By Tom Tate

There are two methods of installing the power lines that carry electricity to your home, overhead and underground. Spoon River members sometimes ask why we use one versus the other, or more to the point, why all power lines are not installed using the underground construction method. Isn't one method better than the other? These are great questions, and the answer is that each method has its place.

Overhead line construction starts with the setting of utility poles. Poles can be set in nearly any type of terrain, even rocky. In the case of heavy rock, special equipment is used to augur out the hole. If placement occurs in boggy or wet terrain, many techniques are available to set poles securely. Once the poles are in place, wires can be strung and then equipment—like transformers, fuses and reclosers—are installed. Power can now flow.

Underground line construction requires digging a trench that is deep enough to keep the lines well away from surface activities. Where the terrain is extremely rocky, underground lines may not be an option. Next, wires are laid in the trench directly or placed in conduits for protection. The trench is filled in, and the surface is restored to its original condition. Padmount transformers and additional equipment are installed as needed, now the system is ready to deliver electricity.

Let's take a look at some the advantages and disadvantages of each construction method, beginning with overhead.

### Overhead construction

Pros:

- Lower cost, quicker construction, easier to spot damage and faults, less expensive to repair and upgrade, can be built anywhere, any voltage can be placed overhead.

Cons:

- Susceptible to wind, ice and snow; more vulnerable to damage from trees and vegetation, which requires right of way trimming; vulnerable to blinks when animals and branches contact lines; susceptible to damage from vehicle collisions; less attractive.

### Underground construction

Pros:

- Not vulnerable to damage from tree branches; no right of way trimming required; less susceptible to damage from vehicle collisions; not impacted by wind, ice and snow; less vulnerable to blinks when animals and branches contact lines.

Cons:

- More expensive to build; susceptible to flooding; difficult to locate faults; expensive to repair; fed by overhead lines at some point, making the lines vulnerable to outages and interruptions; limitations on voltages that can be buried underground; can be vulnerable to dig-ins.

Determining if power lines should be overhead or underground boils down to what is best for the situation. Underground lines might be ideal in situations where there is a desire to keep

continued on 16b

## Spoon River Electric Cooperative

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## Spoon River Electric Cooperative – By the Numbers

Miles of line energized: 1,271  
Number of members served: 4,808  
Number of power poles  
in territory: 29,255

continued from 16a

the poles and wires out of sight, such as a residential neighborhood, park or historical area. There are many cities and towns that construct only underground lines for a variety of reasons.

Overhead systems work well when appearance is not a major concern. Examples include extremely long line distances across country, where the voltages are higher than the limitations set for underground lines.

The ultimate mix of underground and overhead construction used by Spoon River provides you, our members, with the highest possible quality of service at the lowest possible price. Cost, appearance, reliability, maintenance and future upgrades will drive which is the better approach, overhead or underground.

## OVERHEAD & UNDERGROUND POWER LINES THE PROS AND CONS

### OVERHEAD

#### PROS

- Lower cost
- Quicker construction
- Easier to spot damage and faults
- Less expensive to repair and upgrade
- Can be built in any terrain
- Any voltage can be placed overhead

#### CONS

- Susceptible to wind, ice and snow
- More vulnerable to damage from trees and vegetation, which requires right of way trimming
- Vulnerable to blinks when animals and branches contact lines
- Susceptible to damage from vehicle collisions
- Less attractive

### UNDERGROUND

#### PROS

- Not vulnerable to damage from tree branches
- Does not interfere with views
- No right of way (tree trimming) required
- Less susceptible to damage from vehicle collisions
- Not impacted by wind, ice and snow
- Less vulnerable to blinks when animals and branches contact lines

#### CONS

- More expensive to build
- Susceptible to flooding
- Difficult to locate faults
- Expensive to repair
- Fed by overhead lines at some point, making the lines vulnerable to outages and interruptions
- Limitations on voltages that can be buried underground
- Can be vulnerable to dig-ins

## Energy Efficiency Tip of the Month



An average household dedicates about 5% of its energy budget to lighting. Switching to energy-efficient lighting is one of the fastest ways to cut your energy bills. By replacing your home's five most frequently used light fixtures or bulbs with models that have earned the ENERGY STAR rating, you can save \$75 each year.

Source: [energy.gov](http://energy.gov)

## Don't be fooled by common energy myths

Eating carrots will greatly improve your eyesight, cracking your knuckles leads to arthritis, watching too much TV will harm your vision. We've all heard the old wives' tales, but did you know there are also many misconceptions about home energy use? Don't be fooled by common energy myths.

### **Myth: The higher the thermostat setting, the faster the home will heat (or cool).**

Many people think that walking into a chilly room and raising the thermostat to 85 degrees will heat the room more quickly. This is not true.

Thermostats direct a home's HVAC system to heat or cool to a certain temperature. Drastically adjusting the thermostat setting will not make a difference in how quickly you feel warmer. The same is true for cooling. The Department

of Energy recommends setting your thermostat to 78 degrees during summer months, and 68 degrees during winter months.

### **Myth: Opening the oven door to check on a dish doesn't really waste energy.**

While it can be tempting to check the progress of that dish you're cooking in the oven, opening the oven door does waste energy. Every time the oven door is opened, the temperature inside is reduced by as much as 25 degrees, delaying the progress of your dish and, more importantly, costing you additional money. If you need to check the progress of a dish, try using the oven light instead.

### **Myth: Ceiling fans keep your home cool while you're away.**

Believe it or not, many people think this is true. Ceiling fans cool

people, not rooms. Ceiling fans circulate room air but do not change the temperature. A running ceiling fan in an empty room is only adding to your electricity use. Remember to turn fans off when you're away and reduce your energy use.

### **Myth: Reducing my energy use is too expensive.**

Many consumers believe that reducing energy use requires expensive up-front costs, like purchasing new, more efficient appliances or construction upgrades to an older home. But the truth is, consumers who make small changes to their energy efficiency habits, such as turning off lights when not in use, sealing air leaks and using a programmable thermostat, can see a reduction in energy consumption.


Remember, energy efficiency doesn't have to be difficult. Focus on small changes to save big.



## UTILITY POLES ARE NOT BULLETIN BOARDS

Think before you post that sign! Staples, nails and tacks used to hang signs and fliers create dangerous obstacles for electric lineworkers. *Their jobs are dangerous enough – help us keep them safe!*





# Introducing Bright Options Solar

Purchasing clean energy just got easier! For as little as \$12 per month added to your electric bill, you can choose to have a portion of your home's energy come from environmentally-friendly solar power – and all without upfront expenses, maintenance costs, and changes to your home.

Looking for your place in the sun? Contact your electric cooperative today and ask about Bright Options Solar.



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