

More About Your Co-op: The Steps to Restoring Power

Shenandoah Valley Electric Cooperative (SVEC) works hard to bring you “reliable and safe electric service at the lowest possible cost ...” every day of the year. There are many aspects of bringing you electric service — the generation, the transmission, the distribution and the maintenance of the system, to name a few. Additionally, there are the variables of Mother Nature, and the inevitable aging of equipment, that can lead to further challenges for the Cooperative. With dedication and hard work, though, SVEC is able to plan ahead to overcome many of these issues, but unfortunately, due to unforeseen events, outages and interruptions of electric service sometimes occur.

To begin, some background about your Cooperative’s role in delivering power to you, our member-owners (please refer to chart on the next page for correlating terms and illustrations):

Step 1. Shenandoah Valley Electric Cooperative (SVEC) is a distribution cooperative. SVEC purchases a majority of its wholesale power from Old Dominion Electric Cooperative (ODEC). ODEC is an electric generation-and-transmission (G&T) cooperative, which provides power to its 11 member-owners in Virginia, Maryland and Delaware. Though SVEC linemen do not perform the maintenance and repair of the generation facilities and transmission towers and lines, member-owners can still see increases in their bills when upgrades and improvements are needed, since the generation-and-transmission systems are part of the path that SVEC’s power must use to get to its member-owners. They are the “engine” and “superhighway” of our system.

Lineman First Class Blair Good noted that there is one main thing that SVEC can’t prevent.

“If our provider drops service, we will experience outages,” he said. “Additionally, if there are equipment failures, there is the potential for outages.”

Step 2. At the distribution substations, when outages occur, SVEC has the trained personnel — our experienced line crews and system operators — to resolve the problem and restore power as quickly and



Above: An SVEC lineman conducts repairs on an overhead line.
Left: SVEC crew members perform work on a padmount transformer.

as safely as possible. At the substations, one of the causes for outages can be when various animals and birds get into the equipment, said Lead Lineman Mark Feltner.

“We have a lot of trouble with squirrels and birds getting inside the main equipment at a substation. We try to install protectors, but they still find ways to get in,” he said.

Step 3. Following the path to deliver electricity to your homes and businesses, the next paths take shape in the form of overhead or underground lines. Both types of these lines carry the electricity from the substation to a large group of member-owners.

Good said that there is a long list of things that can cause outages with overhead lines. “Vehicle accidents, trees falling on lines, equipment failure, animals and overloading can all lead to outages. Animals get into trouble with overhead lines when they touch energized equipment and contact something grounded,” he said. “As long as the bird is just sitting on a line and isn’t grounded, he’s okay.”

****If you ever see a downed power line, DO NOT APPROACH IT! Make note of the location and call SVEC immediately!****

Feltner said that underground outages can sometimes be caused by some kind of equipment failure.

“Cables go bad, rocks shift and it only takes a little pinhole for it to interrupt service,” he said.

It can be a tedious process of elimination to identify what needs repair in an underground outage situation, increasing the length of service interruptions. That’s

because you can’t fix what you can’t see.

For underground troubles, it’s a matter of fixing what you hear or feel first. Crews use a “thumping” device to connect to failed underground line sections that will send signals over the line to pinpoint the exact location of the problem, Line Superintendent Scott Austin said.

“At this time we could start your repairs,” he said.

Even as fault-indicator technology and sectionalizing equipment improves to decrease the time it takes to isolate a problem, Austin said line crews could still have about a three-hour delay in digging since they might have to wait for Miss Utility. The restoration could then require digging down several feet to create space large enough for a lineman to handle the underground cable.

That’s a pretty complicated solution compared to the relatively simple eye test used for overhead issues that can lead to an almost immediate fix. It’s easy to spot a downed wire, a bad insulator or transformer, or a tree on the line caused by weather or human error of someone cutting a limb onto the line.

Good has worked many different outage scenarios.

“One of the first things for me, I talk to dispatch and try to get an idea of what’s going on. Whether there was an accident, or whether there were any people involved, and then I start thinking about the terrain of the area,” he said. “I will start thinking about what it might be, if there are any problem areas, and try to rule out causes before I get there, to try and narrow

it down. If it's a device that's energized, you start thinking about safety precautions, and not only what you need to do to fix it, but how to do it safely."

Feltner said his mind goes through a similar process.

"I get the location, and then try to recall if I have been there before, what the logistics are, and if there are any extra safety measures that need to be taken besides the usual," he said. "The other part to consider is if it's an overhead or underground line, and I start thinking about what the cause is. I try to get as much information as possible and prepare before I get to the scene."

As for storms, Good said that if there is forewarning, SVEC crews will pre-pack their trucks.

"We get extra materials such as wire, sleeves and transformers. If we get out, especially to distant locations, we need to make sure we have these items with us. We'll take extra time to make sure what we need is intact before we leave the night

before," he said. "I will even pack extra food and clothes. If you're in isolated locations and need to eat, or if I would happen to fall in a creek, I'd have what I needed. You never know, until you know what the circumstances are, what you're going to be doing. For example, one time the snow was up to our waist in February 2010 and we had to make a path to get to where we needed to be to work on the place where a tree had fallen across the line. You do extra preparation for everything that you can think of."

One thing to consider: Member-owners should always call Miss Utility at 811 to have their property marked in order to prevent digging up any underground lines.

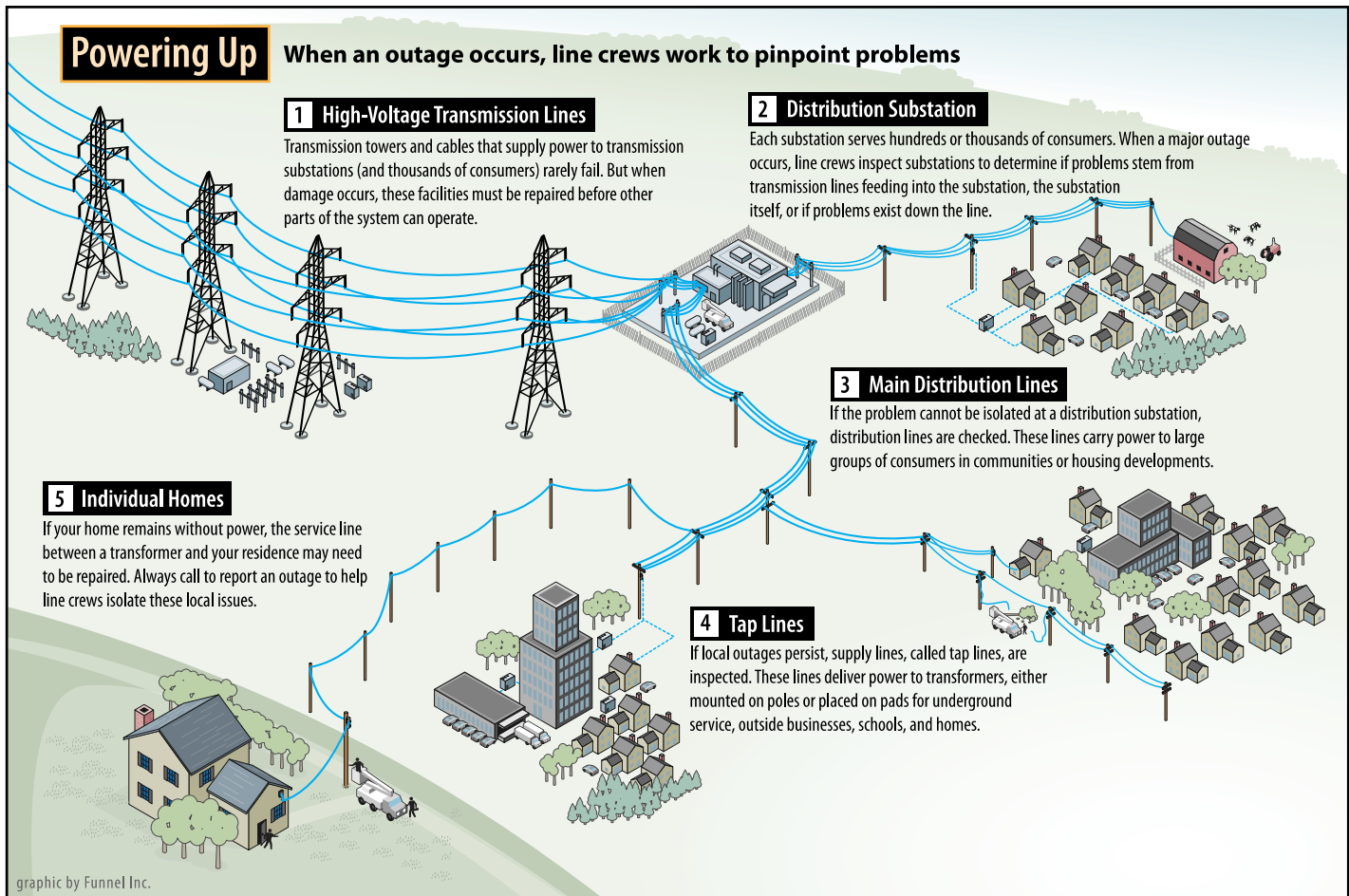
"Sometimes people will be doing yard work, and won't call 811 before they dig. Maybe someone has decided to cut a tree down, or is doing work with a tractor," Good said. "Human error can definitely cause outages. On stormy days, you have an idea of why an outage might be happening."

One way SVEC works to prevent outages: vegetation management. When trees contact power lines and other electric facilities, it can lead to power outages, especially during severe weather events. The Cooperative works to make sure these lines have a clear pathway by maintaining a vegetation-management program, which is designed to reduce tree-related outages and shorten the duration of outages when they do occur.

"SVEC uses a couple of different means of vegetation management, including spraying the rights-of-way, cutting trees with the helicopter or manually," Feltner said.

He added that you just never know what the weather conditions are going to bring.

"For example, sometimes wind causes nothing, and sometimes it causes outages," Feltner said. "But our member-owners can rest assured that no matter the weather, we will always work diligently to restore their power to them, as quickly and safely as possible."



When electricity goes out, most of us expect power will be restored within a few hours. But when a major storm causes widespread damage, longer outages may result. Co-op line crews work long, hard hours to restore service safely to the greatest number of consumers in the shortest time possible. Here's what's going on if you find yourself in the dark.