South River EMC
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It Adds Up: Part Two

Substations

Last month we talked about the rising costs of transformers, as well as our ability to obtain them.

Transformers are just part of another area where we are seeing inflation and delays, which the Cooperative is working to combat.

Substations are part of both transmission and distribution systems, like South River EMC.

They are connectors in the electrical system between long distances and short distances of electrical transmission.

When traveling a long distance, electricity is increased to a higher voltage to minimize energy losses along the way. It is decreased to be distributed to member homes.

"Substations are the heartbeat of our electrical system. They supply power to a large network of distribution power lines which carry power to vast areas of our system," said Chuck Richardson, Vice President of Operations and Engineering. "As demand for electric power grows, it is necessary to strategically place new substations within the network so that we can maintain a reliable and resilient system."

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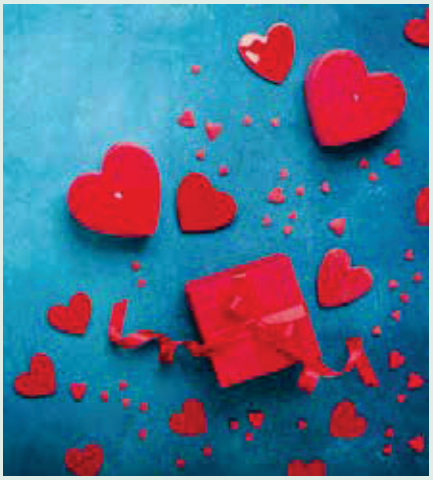

What's Inside

SUBSTATIONS
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Substations include transformers, breakers, regulators, reclosers and relaying protection packages, each of which include a cost and a turnaround time.

Transformers, as previously stated, step-down electric voltage for safer electric use. They are taking anywhere from five to 12 months from order to delivery.

Breakers are used to open and close medium- and high-voltage electric distribution circuits. They can be operated manually, when necessary, to perform maintenance or will automatically trip if an electrical fault/short-circuit occurs. Breakers take about 48-60 weeks, or four to six months, and are special order.

Regulators are pieces of equipment that, as the name says, regulate voltage at a substation to ensure consistent and adequate voltage levels are maintained across the electric system. These devices have increased in pricing from 50-300 percent. Small regulators are seeing cost increases of $14,925. A larger regulator has risen in cost as much as $27,100. Regulators are used in groups of three in substations, so under current rates, a gang of three regulators, will cost between $111,000 and $138,000, over 50 percent of what it was previously.

"Substations are the heartbeat of our electrical system."

Reclosers, like breakers, operate when an electrical fault/short-circuit occurs on the electric system. They are often placed on circuits downline of substations to isolate faulted areas and minimize the number of members affected. For explanation, electricity is a straight line; now, when a fault occurs, like a short, or a tree falling on the line, the recloser opens, preventing the path of electricity. Reclosers are 48-60 months out, and averaging around $36,000 per unit, an increase of around 45 percent since 2020.

Lastly, we have a relay protection package, which is a cabinet pre-wired with all the apparatus, including relay controls, necessary to provide over current protection, which is when the current exceeds the rated capacity of a circuit or of the connected equipment. They were $18,000, and now, two years later are approximately $26,500.

"We are not delaying the building of new or upgrades of existing stations," said Richardson. "But we are having to begin the design of them six to nine months earlier than normal."

Planning ahead, just another part of looking out for members.