



Sulphur Springs Valley Electric Cooperative, Inc.

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Special Insert

SUBSTATIONS ARE SPECIAL!

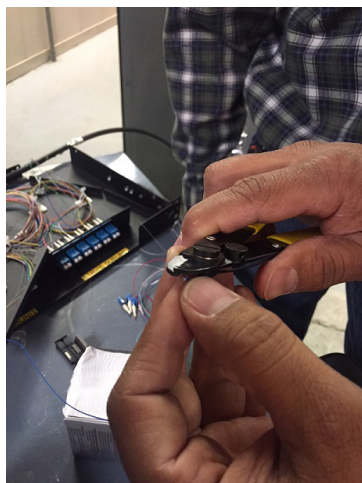
ADDING VALUE TO THOSE WE SERVE BY KEEPING SUBSTATION WORK "IN-HOUSE"



Most substations are almost invisible parts of the landscape, surrounded by walls or fences that conceal the inner workings.

Though they may appear harmless, substations convert massive amounts of "subtransmission voltage" into "distribution voltage," and working on the equipment inside the fence requires four years of training before an apprentice can become a journeyman, said Danny Dunham, Substation and SCADA Foreman at Sulphur Springs Valley Electric Cooperative.

Dunham, a nine-year veteran at the utility and Technical Services and Fleet Manager Manny Gonzales, a 22-year employee, oversee the operation and maintenance of the 32 substations within the SSVEC service area.



In an effort to have the most reliable communication medium, SSVEC has made a big effort toward installing fiber in their substations. Repairing, testing and installing fiber requires a special certificate as a Fiber Technician and Fiber Splicer. This is an in-house capability that the Technical Service has taken on.

"Wherever you live, the power is coming into a substation and it's being converted into distribution voltage that is sent out to our members," said Dunham.

The process begins with electricity generated by a power plant — most of it from the Arizona Power and Electric Cooperative in Cochise — which is transmitted directly to a substation over wires bearing 69,000 volts. At the substation the electricity is



Danny Dunham, left, Substation and SCADA Foreman at Sulphur Springs Valley Electric Cooperative and Technical Services and Fleet Manager Manny Gonzales

“stepped down” through transformers, which reduce the voltage to either 7,200 or 14,400 volts. It is then distributed through the SSVEC service area over about 4,000 miles of wire, both overhead and underground, to more than 52,000 electric meters.

“We’re a distribution cooperative,” Gonzales said. “We’ve managed to bring almost all of the maintenance and repair of our substations in-house, which provides the most value to our members and has increased the reliability of our service.”

Gonzales credited the support of SSVEC Chief Executive Officer Creden Huber and the SSVEC Board of Directors for agreeing to invest in the training and equipment needed to make the Cooperative more self-sufficient in the maintenance and operation of its substations.

Having the capability to do this type of work in-house with highly trained employees and the latest technology reduces costs, improves response time and puts the reliability of the service in the hands of Cooperative employees. Data collection and inspections have become critical parts of the substation maintenance process. Gonzales said records show when it’s time to replace equipment to prevent failures and outages.

“We’re getting better and better at collecting data and anticipating what needs to be repaired or replaced,” he said. “Effectively, we’re doing things to prevent issues that our members won’t ever really know about.”

Dunham said training to work inside a substation begins with a one year pre-apprenticeship program, followed by four years of formal apprenticeship training.

“There’s danger involved and new guys won’t know what they can touch and what they can’t,” he said.

The substation “crew” also works with a mobile unit which allows SSVEC to quickly restore electricity when there is an outage, or bring down a substation so repairs can be made, without interruptions to our member-owners’ power. The mobile unit consists of one large trailer containing the substation transformer, 69Kv Circuit Switcher, and a disconnect switch.



SSVEC employees prepare one of the mobile substation trailers for deployment in the service area.



Reggie Morales, Apprentice Substation/SCADA Technician, tests the top guard of a substation fence.



The second large trailer contains three voltage regulators and the Viper circuit breaker. The third of the last set of trailers contains the large cables used to connect the mobile substation to our distribution and sub-transmission system.

“We’re close to a point where we will be able to build our next substation completely on our own,” Gonzales said. “Our lineman team are already capable of doing this, so we have plenty of resources.”

Dunham and Gonzales also reminded everyone of the importance of staying away from substations and calling the 800-number posted outside the facilities if



Ruben Nieto, Electrical Apparatus Foreman, and Felipe Mendoza, Journeyman Electrical Apparatus Technician, install a new bushing at the Tombstone Substation Transformer.

there is a need to recover something that has fallen into the fenced enclosures.

“We’re ready to respond,” Gonzales said. “These substations look calm and people might hear a little bit of a hum if they stand nearby, but if an untrained person gets in there, they can get seriously hurt or even killed.”

He said efforts are underway to improve signage at several of the substations, increasing the size of the telephone number to call if there is a need to enter the area. Gonzales said during several of his inspections he has located the number, and then called it to test the response time.

“In my experience, it took a little over three minutes for someone from the Cooperative to be notified of the need to enter the substation,” he said.