

# A High-Flying Act

## Wilson Construction takes to the sky

**A**T TIMES, IT WAS LIKE A LIVE-WIRE ACT, as helicopters hovered above the construction site. But that was just a regular day on the job when Wilson Construction Co., Canby, Ore., worked on reconditioning utility transmission lines in Southern California—specifically from Bailey to Pastoria, Bailey to Pardee and Pardee to Pastoria.

The transmission line parallels Old Ridge Road, one of the main roads associated with the project. It was the first road built between Bakersfield and Los Angeles more than 90 years ago, and the line was the original transmission line built back in 1912 that supplied power into the Los Angeles basin from the Big Creek hydroelectric system.

Modernizing the electrical network continues to be an ongoing project throughout the United States. Some of the transmission lines in this particular project can be considered some of the oldest in the country's electrical grid. "Reconductoring" is the term used to describe the process of swapping out old transmission line conductors with new conductor.

Wilson Construction was instrumental in the construction process. Established in 1952, Wilson has been part of the electrical utility industry for more than 53 years. The company was the prime contractor on the bid specification project contracted directly by Southern California Edison (SCE), the owner.

### Logistically speaking

Working on transmission lines is logistically challenging in many ways. The transmission line covered a large area, which made it difficult, and this project came with a unique set of requirements: environmental sensitivities and regulations. Each person involved had to go through intensive safety and environmental training before the start

of each section. Why? Because roughly 40 percent of the transmission line falls within the boundaries of the Angeles National Forest and 20 percent through the Tejon Ranch.

The Tejon Ranch protects approximately 100,000 acres of pristine wilderness area, some of the most environmentally sensitive lands in California. These lands contain threatened and endangered plant and animal species and their habitats as well as rugged mountains, steep canyons, oak woodlands and valleys. Workers on the job were required to carry permits at all times. Wilson crews were diligent about working within the parameters and abiding by the conditions of the Tejon Ranch so protected species and habitats were not disturbed. Conditions were similar within the Angeles National Forest. The rugged conditions, sensitive habitat and protected historic resources made it challenging.

"The guys have seen everything from cougars to wild boars to even bobcats," said Kyle Schnider, Wilson Construction superintendent.

Adverse weather conditions, such as rain, snow, wind and fog, brought more challenges for Wilson Construction workers. In some of the higher elevations, crews worked on towers while wind whipped through the canyons and snow fell. The threat of fire danger is an ongoing issue in this area. The Santa Ana winds can stir a small fire into hundreds of acres in a matter of hours. Wilson had an employee on fire watch detail for several months. Even when crews would be done for the day,

someone had to stand watch for two hours after everyone was gone, just to make sure that a fire had not started.

### Tech specs

“We removed 1.325 million feet of conductor and installed 1.325 million feet of new,” Schnider said. Wilson also replaced all insulators on the project.

The company had crews working an average of six or seven days a week.

“Kyle directed his team in such fluid motion it was like watching a great theater production,” said Tim McCulloch, vice president of major construction projects, Wilson Construction.

Some 30 of the pre-existing towers were modified from tangents to dead ends, and 14 existing steel towers were raised in height by 5 to 10 feet due to ground clearance issues. At four of the tower sites, Wilson also had to replace soil that had eroded away around the tower legs.

In order to successfully perform the reconductoring and abide by all of the rules and regulations, Wilson used a helicopter to move equipment and crews from tower to tower so they could complete their tasks while minimizing disturbance to the land. When vehicles were needed, they were customized to reduce impacts to roads and habitat.

“Normal-sized trailers were not permitted, therefore, we needed to have them custom-made. Most equipment was modified in our Canby shop to comply,” said Schnider.

The Wilson team easily overcame this challenge and forged ahead.

Since this area has historical importance, there were limitations placed on how many trips per day crews could make over Old Ridge Road. Limiting the number of trips would reduce the potential for any damage to occur to the historical landscape. Wilson finished its work using a minimal number of trips. This was accomplished by careful planning and the use of helicopters to ferry equipment and workers from site to site.

“Using the helicopters to move the crews and equipment from tower to tower proved to be an incredibly efficient and safe process,” said Don Wilson, president of Wilson Construction. “No time was wasted in climbing up and down the towers and moving trucks and equipment from site to site, minimizing environmental damage. The crews could go in, do their work and move to the next tower immediately.”

### Copter hopper

“The crews became so efficient, we had to add a second helicopter to keep up,” said McCulloch.

It was apparent early on that helicopters would be of vital importance in this particular project.

“Two site visits and an end-to-end helicopter viewing helped form the basis for our work plan,” said Monte Szendre, vice president of Wilson Construction.

One other interesting obstacle cropped up during the project as well. One of the transmission lines ran directly through the grounds of Wayside Honor Rancho, also known as the Pitchess Detention Center, a correctional facility in Castaic, Calif.



## Stats & Facts

Here are some quick facts and figures about the project. Wilson construction had to:

- Replace 76.6 line miles (501) spans of existing 605 Kcmil ACSR conductors with new 666.6 Kcmil ACSS/TW conductors
- Replace existing porcelain insulators and hardware with new polymer insulators and hardware on 398 structures and replace insulators only on 106 structures
- Replace 12 known spans along with an unknown number of spans of the existing overhead groundwire with new groundwire. Re-sag an unknown number of groundwire spans (est. 40) as required
- Convert 30 towers from suspension to dead-end configuration
- Raise 14 towers
- Remove four wood H-frame structures near Bailey Substation and install one new lattice steel dead-end tower
- Install concrete reinforcement to the existing grillage-type footings on 13 towers
- Replace eroded soil at four tower sites
- Maintain roads as necessary during construction
- Deploy 20,000 feet of conductor per reel and 66 conductor reels

## PROJECT PARTNERS

**Wilson Construction Corp.**—Electrical contractor

**Southern California Edison**—Owner and equipment supplier

In February 2006, there was a riot on the jail’s grounds that lasted for seven days. For safety reasons, Wilson had to pull all of its crews out of the area. Though this potentially could have affected the project schedule, Wilson was able to get right back to work when it was allowed back in to work.

It seems that teamwork was the key to successfully completing this project.

“Most jobs [these days] are a challenge, but with the help of SCE, the Forest Service, CHP [California Highway Patrol], Caltrans [the California Department of Transportation] and a very hardworking crew the job went smoothly. We were all able to work well together to get this project completed successfully,” Wilson said.

On this project, Wilson Construction faced strict regulations and restrictions, but the company worked through all of it—even if it meant tackling its own type of high-wire act from the belly of a helicopter.

**STONG-MICHAS**, a freelance writer, lives in central Pennsylvania. She can be reached via e-mail at [JenLeahS@msn.com](mailto:JenLeahS@msn.com).