

## United Power Installs Hendrix Aerial solution to Address Fire Mitigation Needs

Based in Brighton, CO, United Power Inc. is the 2nd largest electric cooperative in Colorado. With over 5,000 miles of power lines and nearly 83,000 meters, they serve over 200,000 customers along the north central range of the Colorado Rockies. A section of the United Power service area also heads up into the mountains, providing power to some 5,500 remote homes in and around the 12,000 acres of Golden Gate Canyon State Park.

Rugged terrain and challenging access proves difficult for any cooperative or utility to maintain a reliable network. So when it came time for United Power COO Bryant Robbins and his team to look at upgrading sections of a single phase distribution line – which was over 50 years old – they needed a solution that would minimize maintenance and provide them with long-term reliability. But it also needed to address their fire mitigation, wildlife protection, and storm hardening needs.

“With the dense forest coverage in the park, and the winds that are constantly blowing, we have a significant amount of fire potential up in the hills,” says Robbins, COO of United Power. “It’s all about risk management and reliability to our members, so whatever we could do to minimize the risk and minimize that fire potential is what we needed to consider.”

### The choice for fire mitigation

Given the mountainous region and difficult access, an underground cable solution was not a viable option that could be considered by the cooperative. Overhead lines were the only way to go, and bare wire was not going to give them the fire mitigation requirement they were looking for. In February of 2016, Robbins and United Power put a commercial agreement in place with Hendrix Wire and Cable, to use the Hendrix Aerial Cable System (ACS) for an initial 2.8 mile single-phase, 7.2 kV circuit. In addition to being reliable, environmentally friendly, and economically sound, Hendrix ACS was proven to be a strong asset for utilities and cooperatives in areas prone to fires. ACS installation and material costs are typically less expensive than underground, ACS eliminates or reduces momentary faults and outages, and it requires less tree management than traditional bare wire over the long term.

The basic structure of ACS is three covered conductors supported by a grounded messenger, all run separately and all held together

by interspersed spacers that keep the cables strategically positioned along the length of the span. The supporting messenger provides a barrier and protection from falling trees and limbs. The footprint of a 15kV – 3 phase system is less than 24” in height and 17” in width, greatly reducing the amount of vegetation trimming and frequency. Additionally, if the pole and/or cable does happen to come down, the covered conductor is much less apt to start a fire versus bare wire, which would tend to arc when broken or become compromised in any way.

“Hendrix Aerial is a unique solution that should be considered for fire mitigation in arid, dry climates and areas designated as high-risk zones” says Rick Simpson, Vice President of Sales for Marmon Utility, of which Hendrix is a part. “For new installations or for retrofitting or replacing existing lines, we’ve had a lot of customers find great success with our ACS as part of a fire mitigation strategy. It’s a great solution.”



## Phase I and Phase II

With the initial agreement in place, the Hendrix Field Service team conducted a pre-design site visit and walk-down, and provided final design and specs to United Power in April of 2016. From April to August Hendrix, United Power, and hired contractors worked together to work through the installation and get the new circuit in place. By November of 2016, the install was complete, Hendrix performed a final inspection and the new circuit was energized.

United Power was pleased with the product, the process, and the results, and they had replaced 2.8 miles of cable in their mountain region. And with the first installation complete, they brought the Hendrix team back in to assess and design a second section of the line. This second piece was 3.5 miles long, also single-phase and 7.2kV, with new poles to be run along the entire length of the circuit.

Says Robbins, “To continue to address our fire mitigation needs, we wanted to do the two-mile circuit as soon as possible, as it would get us out of the forest – the most critical to minimize our fire exposure. We were thrilled with how Hendrix handled the first circuit, and it gave us peace of mind to have that in place, so this was a logical next step.”

Hendrix was able to bring their team back in, provide design concepts and work through the final design, and completed the installation in October of 2017 – less than two years after United Power had first been introduced to the Hendrix Aerial Cable System product and brand. It was a product that would improve their grid hardening, increase reliability, decrease maintenance costs, and most importantly, address their fire mitigation requirements.

United Power is in the process of replacing approximately 3.5 miles of its overhead 34.5kV backbone system – which runs through a very rugged and forested area – with the Hendrix ACS in an effort to mitigate many of the aforementioned concerns. Completion is expected by the end of 2017.

