BURNS McDONNELL

PROJECT PROFILE / **TOWER AND SHELTER REPLACEMENTS**

# OVERCOMING A TOWERING CHALLENGE ACROSS MULTIPLE STATES

Juggling different regulations and working with multiple contractors in multiple states challenged the timelines and budget of an electric utility replacing outdated communications towers. The utility needed a partner with the experience and bandwidth to manage complex projects and stay on track.

# SAFE, EXPERIENCED APPROACH BUILDS TRUST

Client confidence has been boosted through strong safety measures and demonstrated success managing work in multiple locations concurrently.

## PROJECT STATS

**CLIENT**
Confidential client

**LOCATION**
Multiple states across the Eastern U.S.

**ANTICIPATED COMPLETION**
December 2020

**37**
**TOWER SITES TOTAL**

**115K**
**MAN-HOURS SAFELY COMPLETED**

**0**
**LOST-TIME INCIDENTS OR OSHA RECORDABLES**

## IMPROVING RELIABILITY

A confidential power company that provides electricity to millions of retail customers in multiple states wanted to replace decades-old communications towers, associated site buildings and equipment to improve reliability of the overall communication network.

Initially, the utility intended to manage the upgrades and replacement on its own. Later it realized it would be challenging to self-execute an initiative of this scale, which would have impacted the schedule and increased the costs. The utility decided to bring in support to execute the work. It selected Burns & McDonnell on the basis of experience, safety commitment and competitive bidding to act as the principal engineer-procure-construct (EPC) contractor.

Construction on this project — among the largest EPC telecom projects for the utility— would require work authorizations within power plants, substations and telecom sites. We are leading the overall project to design and construct the microwave tower sites and communication shelters. The work is being completed simultaneously in multiple states, each with unique county laws and provisions and special design considerations for flood pooling and soils.

## REPLACING THE TOWERS

The towers are a mix of guyed and self-supporting structures. The design work includes site layout with grading and foundation design, along with the design of antennas, waveguides, tower lighting, electrical systems, fiber optics, communication buildings, generators and fencing. In preparation, we performed the cultural and historical Section 106 permitting, along with all the environmental licensing and permitting; site surveying; and Federal Communications Commission (FCC) and Federal Aviation Administration (FAA) licensing for the new tower construction and licensed microwave frequencies.

We performed 3D scanning of each of the sites and prepared visualizations, which gave the client a better understanding of what its network components would look like after replacement.

In areas prone to storms and flooding, especially the more southern sites, we are working to mitigate such risks through design. These plans include installing raised platforms for equipment and improving the site grading.

The overall approach is customizable to each site's specific requirements, and we partnered closely with the utility from the beginning of the project to jointly define project design parameters. By engaging at this phase, we were able to scale our team to streamline construction, provide cost transparency and deliver the project on an aggressive schedule. We are on track to complete all current sites by the end of 2020 at a pace of two sites per month.

In recognition the utility's strong focus on construction safety and overall project quality, we have provided five on-site construction supervisors and completed more than 115,000 man-hours of work by ourselves and subcontractors combined with zero lost-time incidents or recordable injuries.

## FINISHING THE JOB

The new towers will provide enhanced communication, increased connectivity and additional cleared space, which can be used for future expansion or can be leased out to telecommunication companies for installing equipment. Leasing the space will add to the utility's revenue. The enhanced communication will support more resilient electrical service, boosting customer satisfaction.

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