

# HELICAL PILE FOUNDATIONS

## COASTAL ENVIRONMENTS



**Fig. 1** Time was running out on this 230kV transmission line's foundations.

The coastal lowlands of Georgia comprise a scenic area full of southern charm and natural beauty. Underneath the facade, however, is the ever present tidal flow into the marshes abutting the shoreline. With the ebb and flow of the salty ocean water comes the very real problem of corrosion. Such was the case when an inspection of a 230kV transmission line south of the city of Brunswick, GA uncovered a few of the original foundations were all but missing at the footings of the structures.

Now that the problem was found, what would be an effective correction? The sensitive wetland location called for minimal matting, limiting vehicle size and weight. Existing guy wires to the structures constrained overhead work clearance. The importance of this particular line required the restoration to be done while the line remained energized. And on top of these factors, the new foundations need to withstand the very corrosive environment that resulted in the early demise of the original foundations.

## THE SOLUTION

Hubbell helical foundations. When the Hubbell Power Systems, Inc. (HPS) design team back in Centralia, MO were provided with the information of this project, they went to work on designing a helical foundation system that, along with supporting the structures, would also address the challenges of installation and longevity. The structure information gave the team the necessary details to select the proper foundation size. Borings from



**Fig. 2** HPS helical pile extensions, and helical pile lead (far right). Components were custom manufactured in Centralia, MO and shipped to the site complete.

the site let them know the depth of the marsh and soil composition below to reach a suitable bearing surface for the new foundations. And to resist the corrosion of the briny tidal flow, the steel helical foundation sections were sized thicker and got treated with a special, heavy-duty galvanizing combined with an overcoat of tar epoxy (figure 2).

On the day of installation, a light-weight, low-profile drilling rig maneuvered into position and easily drove the foundation sections into the marsh. A CHANCE® wireless torque indicator monitored the progress of the helical pile lead and extensions (figure 3). When the pre-determined torque value was achieved, the helical pile installation was complete. They were now ready to be trimmed and capped to grade level, allowing for final placement of the structures.

*HPS Helical Foundations overcame all of this project's difficult constraints to provide these transmission structures with a sound foundation for decades to come.*



**Fig. 3** Installation of the foundations monitored by a CHANCE® wireless torque indicator.

