# DRG HELPS GLADES ELECTRIC SOLVE MYSTERIOUS HAM RADIO INTERFERENCE

DAVEY
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## GLADES ELECTRIC COOPERATIVE

*Utilities often receive complaints from ham radio operators about electric interference, for which even the most veteran linemen and engineers are unable to determine the source. In partnership with Davey Resource Group and Exacter, Inc., Glades Electric succeeds in diagnosing and correcting one such case.*

### THE CHALLENGE

It's not uncommon for utilities to get periodic complaints from ham radio operators claiming electric interference is disrupting their transmissions. More often than not, a visit to the surrounding poles reveals no visible signs, or even heat signatures from an IR camera. It's an issue that continues to confound even the most veteran linemen and engineers.

Such was the case for Glades Electric of Moore Haven, Florida. There, near the orange groves in a rural area of south central Florida, one of their members had experienced periodic interference issues for more than 10 months following Hurricane Irma. Each time a team was dispatched to investigate, nothing was ever found.

## THE SOLUTION

In 2016, Glades Electric contracted Davey Resource Group to perform an overhead distribution assessment of approximately 100 miles of the worst performing circuits. The assessment uncovered 23 components that were emitting partial discharge (pd) – among them six lightning arresters and one transformer.

In 2018, after a successful pilot project and in partnership with Exacter, Inc. of Columbus, OH, a predictive reliability assessment was conducted on a small area of the system near the ham radio operator. One of the side objectives was to investigate what was going on with the ham radio interference.

Before the assessment, a visit to the ham operator's residence was arranged. This individual shared that the disturbance had been going on since the hurricane, but the problems were intermittent with no real pattern.

Using a directional RF detection device, the overhead line and assets within a quarter mile circumference of the home were assessed. This revealed a partial discharge reading toward the south. A patented mobile assessment unit was used to inspect approximately 1/4 mile of line in that direction. The GPS locating technology narrowed the source of the problem to within 150 meters. With the aid of an ultrasonic device, the problem was pinpointed to a lightning arrester on one of three poles in that 150-meter span.

The reading for RF partial discharge from the lightning arrester was extremely high. The component was also producing significantly louder than usual arcing noise. After being alerted to the source of the disturbance, Glades Electric replaced the arrester. An assessment of the replaced arrester revealed intermittent arcing on the top connection.

## THE RESULTS

After 3 months, there have been no reports from the customer about interference on the lines affecting his ham radio.

The intermittent nature of the partial discharge on the arrester is still puzzling to both Glades Electric and Davey Resource Group. Both parties do agree that removing arcing or partial discharging equipment from the lines reduces risk for outage, makes the system more reliable, and will reduce customer complaints.

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