



CASE STUDY

A Comprehensive Visual Assessment of 69 kV and 115 kV Overhead Transmission Lines



WAKE EMC INSPECTION

46.3	Miles Inspected
663	Structures Analyzed
340	UAV Flights
831	IR Images Collected
12,855	E/O Images Collected
89.6	GBs of Data Analyzed
1	Geodatabase Results Map
1	Categorized Spreadsheet
1	Detailed Report

Challenge

Wake EMC needed a safe and cost-effective way to quickly evaluate 46 miles of transmission line components. The 69kV and 115kV lines were separated into six circuits, with some areas located several miles apart.

Solution

Wake EMC contracted with Preformed Line Products' Inspection Services to perform a Level 1 UAS inspection of 69 kV and 115 kV transmission lines. PLP's comprehensive inspection of the lines provided a detailed assessment of the transmission components, while also identifying areas of concern.

The Inspection Services crew, which includes AUV Flight Services pilots and a PLP inspection engineer, performed a five-point comprehensive inspection of each structure, collecting both E/O and IR images. In 10 days of inspection, PLP and AUV inspected over 46 miles of transmission line components and collected 12,855 E/O and 831 IR images. PLP's engineers then analyzed the data, identifying areas of concern, including, but not limited to: hot spots, compromised structures, and missing armor rods.

Results

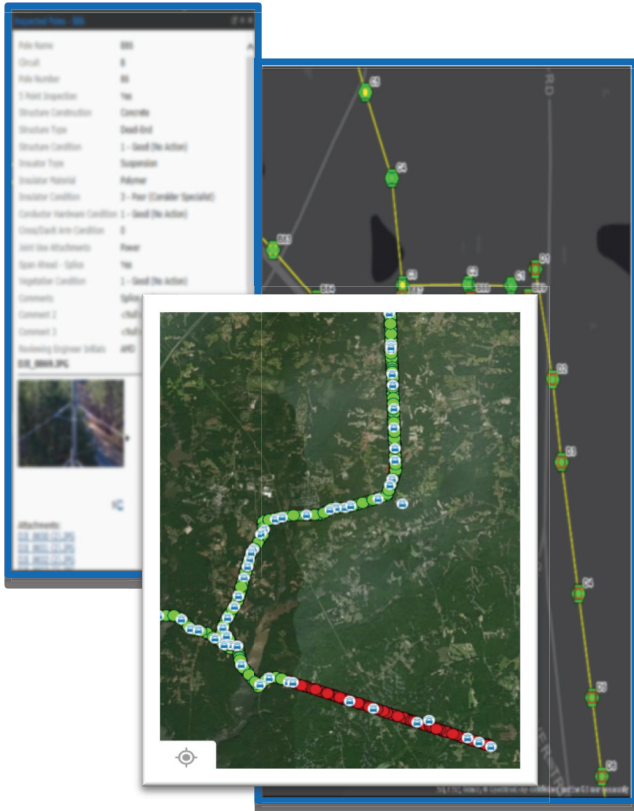
By using PLP's Inspection Services, Wake Electric was able to quickly obtain actionable data and a comprehensive summary of their asset conditions, including a detailed project map from PLP's GIS expert, complete with inspection data and images for each component.

"It is easy to fly the lines and take the pictures but analyzing and organizing the images and providing the information back to us in a readable format is what we truly need."

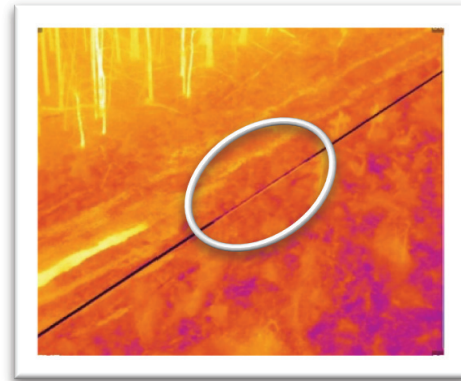
CHRIS WRIGHT

**Wake Electric,
System Engineer**

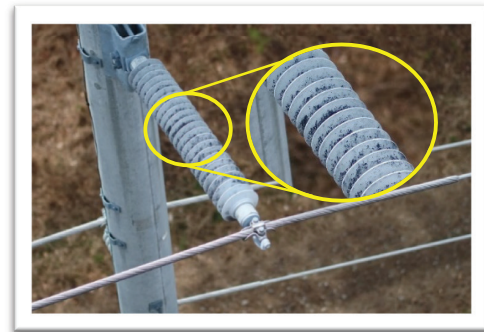
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Real-time Inspection Progress Tracking from the ArcGIS Mapping and Data Collection



IR image of conductor temperature anomaly



Contaminated insulator



Pole rot with exposed through hardware



Repeated woodpecker damage

“We typically inspect on foot but there are so many things you might miss. With 360-degree views, you capture information you wouldn’t normally get on foot patrol.”

CHRIS WRIGHT

Wake Electric, System Engineer