



Potomac Electric Turns to Proven Solution

Preassembled Aerial Cable Most Reliable for Grid Hardening

Potomac Electric Power Company (PEPCO) has been a reliable source of electric power to customers in Washington, DC, and surrounding counties for almost 120 years. As a function of the ongoing maintenance of its 640-square-mile service area, with the ultimate goal of grid hardening and increased reliability for its 840,000 customers, PEPCO will upgrade certain circuits, add feeders where necessary, and enhance its grid hardening with more reliable solutions in heavily congested or heavily treed areas.

There are a number of ways for a utility to increase hardening to improve reliability and increase capacity. The primary challenge is that the existing poles tend to be very crowded, with little room for additional cable circuits. Short of swapping out poles, which is prohibitively expensive, the primary options that utilities can consider are underground, tree wire, and preassembled aerial cable (PAC).

Options for utilities

A very viable option that many utilities consider when looking to address reliability and demand, is underground distribution. This is an attractive alternative when existing pole structures are already overcrowded, as it's a reliable source of power that eliminates the Achilles heel of most overhead circuits – downed power lines due to fallen trees during a storm event. Undergrounding a circuit, however, doesn't come without an inherent downside. Installing underground distribution circuits tends to be much more expensive than their overhead brethren, as much as 10 times depending on subsurface conditions and presence of existing utilities. Underground circuits are also limited by the availability of a straight path from one point to another, which can often be a challenge in congested cities or wooded areas.





Tree wire

Another option for utilities is tree wire, which is an effective solution to increase distribution load and grid hardening versus underground distribution. Tree wire will certainly provide some circuit-hardening benefits in heavily wooded areas, and it's less expensive than undergrounding a circuit. But tree wire tends to be more expensive than traditional open wire feeders, and it's more difficult to work with when it comes to splicing. Tree wire is also not as compact as PAC, which is crucial when it comes to congested areas and/or crowded poles that don't have much room for additional circuitry.

The solution of choice

For over 70 years, Kerite has been delivering preassembled aerial cable as a proven grid-hardening solution for utilities across North America, providing them with a cost-effective and pragmatic alternative for adding express feeders to existing poles and circuits.

Available in 15kV, 25kV, and 35kV, Kerite PAC is fully insulated and shielded, and as such is an easy add-on to any pole configuration. It comes ready to go, completely assembled on the reel, with three

conductors triplexed and wrapped with a strap to a copper-clad messenger wire. Electric utilities have long relied on Kerite PAC to address certain installation challenges, where tree or open wire is not an option. With constraints such as limited clearance between structures, under bridges and underpasses, where underground ducts are inadequate or unavailable, and for applications along property boundaries or in tight alleys, Kerite PAC is an ideal solution to consider.

In locations that are prone to recurring limb and tree damage, Kerite PAC has proven to be extremely effective in increasing circuit reliability and improving grid hardening. Given the inherent strength of the PAC system, provided by the three shielded conductors and messenger wire packaged together and wrapped with the copper strap, PAC is able to withstand the weight of fallen trees, debris, and vegetation overgrowth much more effectively than other options available to utilities like PEPCO.

"For express feeder applications, whether you're running switch to switch or getaway pole to open wire, PAC is an ideal solution," says Dane Merkel, division construction supervisor for PEPCO. "It's the most reliable hardening solution for heavily treed areas. And given the way it's assembled, it's an ideal way to

add another circuit on busy poles, where the primary or even secondary zones are at capacity.”

Via a single pull-in operation, PAC can be installed with tools and equipment available to any utility operation. Installation is easily handled by a typical experienced utility line crew or local subcontractor. As part of the upgrade to its service area, PEPCO is using Kerite PAC to replace a 34kV circuit along a 6,000 foot train right-of-way in the greater DC area. The congestion and complexities inherent with an existing ROW, after years of increased demand and subsequently overcrowded poles – with bridges and underpasses also figured into the landscape – made PAC the solution of choice.

