

real life

A STORY FROM THE FRONT LINES OF POWER PROTECTION

For many telephone companies in the southeastern region of the United States, the lightning season between May and September is about as welcome as a December to March ice storm would be in the northeast.



High-Speed Lines Demand High Availability

Having used the telephone, you can probably attest to having had problems with your line at some point in the past. Disconnections, third-party conversation bleed, static or noise on the line, etc. are all line problems that can incite a complaint to your local phone company. Trouble on communications lines can be caused by a number of different phenomena including lightning, damage to a utility pole, moisture, tree branches, or even a pesky squirrel nibbling at the lines.

The Problem

A major telephony service provider in the southeast was experiencing an unusually high volume of trouble calls on their ADSL lines in Florida. Something you might expect with Florida being the "lightning capital" of the world.

For example, in Dade and Broward Counties alone, there were 1,193 lightning strikes in April. By June the number had risen to 11,246 and by July there were 19,496 strikes reported. Needless to say, the number of service calls rose as trouble reports increased. All across the southeast, summer storms wreaked havoc with a wide range of services. As the trouble calls mounted, they identified that an inordinate amount of trouble calls were due to costly circuit card failures in the DSL-based service provisioning equipment.

The Search

Why was the trouble call index so high for this service provider and why did so many of the trouble calls involve circuit card failures? This service provider decided to find out why.

The first thing they checked was that all the lines were protected and that the DSL-based service provisioning equipment was, in fact, properly bonded and grounded. After a closed inspection, they found that all the lines were properly installed and also protected, by standard phone-company issue gas-tube or solid-state line protection devices.

If the lines were protected, why was the trouble index so high? They were puzzled and decided to call in the experts at ONEAC.

Enter ONEAC: The local ONEAC technician was consulted and after careful evaluation, suggested that the problems could be caused by transient interference on the lines. That even though the ADSL lines were all equipped with gas-tube or solid-state protection devices, these were most often installed for safety reasons and did not offer the level of protection required to protect against harmful transient voltages, also known as line noise. Based on successful field trials of

About ADSL

ADSL (Asymmetric Digital Subscriber Line) is a technology for transmitting digital information at a high bandwidth on existing phone lines to homes and businesses. Unlike regular dialup phone service, ADSL provides a continuously-available, "always on" connection. ADSL is asymmetric in that it uses most of the channel to transmit downstream to the user and only a small part of the channel to receive information from the user. ADSL simultaneously accommodates both analog (voice) and a digital (data) information on the same line. ADSL is generally offered at downstream data rates from 512 Kbps to about 6 Mbps.

ADSL was specifically designed to exploit the one-way nature of most multimedia communication in which large amounts of information flow toward the user and only a small amount of interactive control information is returned. Several experiments with ADSL to real users began in 1996. In 1998, wide-scale installations began in several parts of the U.S. In 2000 and beyond, ADSL and other forms of DSL are expected to become generally available in urban areas. With ADSL (and other forms of DSL), telephone companies are competing with cable companies and their cable modem services.

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ONEAC[®]

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ONEAC's ADSL Protectors in other areas of the country, the ONEAC technician suggested that this service provider field-test the ONEAC ADSL Protectors to see if they would reduce trouble calls.

As a test, the service provider agreed to a four-month field trial evaluation of the ONEAC protectors. The service provider chose one of its Central Office locations, with over 8400 ADSL lines, to conduct the test. The test included a mix of central-office-based lines and remote DSLAM (Digital Subscriber Loop Access Multiplexer) lines.

ONEAC ADSL Protectors were installed on approximately 5000 of the ADSL lines in this Florida field-trial. The remaining ADSL lines in the trial were left alone; with the gas-tube or solid-state protectors installed.

The Solution

During the field-trials, the lines protected by ONEAC had considerably fewer failures than the lines protected with traditional solid-state technology. The true benefit to the service provider is the reduction in service related dispatches compared to the previous year when ONEAC technology was not installed.

In summary: The deployment of ONEAC's patented ADSL protection in high lightning areas has had a significant impact in reducing the number of failures with the printed ADSL circuit cards and substantially reduced the number of related service dispatches. ONEAC is saving this service provider millions of dollars and increasing customer satisfaction for its ADSL line subscribers.

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About ONEAC's ADSL Protectors

About ONEAC's ADSL Protectors: ONEAC's patented ADSL protector technology differentiates signals and transients on telecommunications lines by both amplitude and frequency or rise time. High-speed noise on the line, which passes through classic solid-state protectors, is virtually eliminated by ONEAC's ADSL protectors. Further, the peak differential transient voltage let-through is dramatically reduced. Two reasons ONEAC's patented ADSL protectors greatly increase the reliability of ADSL equipment and service.