Electrotek CONCEPTS

Power Quality for Electrical Contractors

Gathering the Right Information during an Investigation Ensures Successful Identification of the Cause and Solution, and Maximizes Project Profits

Electrical contractors are a critical part of any power quality (PQ) investigation. Knowledge of the National Electrical Code; and the customer's business, electrical system, and loads, are four important components when working to assemble the case.

The other components necessary to reach the finish line are related to experience and the tools to collect, analyze, and apply the PQ data to identify a cost-effective solution that solves the problems the first time.

The information and data gathered at the site during the first visit may not "present" itself on the next visit. Contractor preparedness before arriving at the site ensures the visit flows smoothly. PQ is an unfamiliar topic for most customers, and they watch every move an investigator makes. The contractor at the site should follow expert procedures when gathering background information, setting up a PQ monitor at each selected point on the electrical system, inspecting wiring and grounding, as well as loads.

Tapping into the 33 years of experience of expert Electrotek PQ engineers can provide those three components that contractors need to ensure a successful PQ project.

Data collection is accomplished using a PQ monitor. Not all monitors are the same. Most present difficulties in user friendliness, analyzing data, and creating results for a customer report. PQ monitors from Dranetz Technologies, Inc.—Electrotek's sister company, are partly based on designs provided by Electrotek. Our combined design approaches provide the best monitors to our customers.

Training from Electrotek can help contractors achieve a successful monitor install and setup experience at the customer's site. However, extracting the right information to help "tell the story" of what's going on at a customer site requires the right tools and years of experience in data analysis.

Electrotek can help contractors achieve excellent customer responsiveness. Live remote PQ monitoring, achieved by using a cellular data modem to link data to our PQ Monitoring Center. Our staff uses our proprietary software to analyze the data, and generate a report within a few hours of submitting it to Electrotek.

Our extensive knowledge of customer electrical environments, disturbances, equipment reactions, and efficient data analysis ensures you're delivering the right results and solution to the customer. The key is to get the customer up and running again as quickly as possible.

Let Electrotek Prepare Your Electricians for Effective PQ Investigations

Electrotek's 33 years' of experience isn't just about developing effective PQ software enabling engineers to solve problems, testing products to determine how to improve their PQ immunity, or writing new IEEE and IEC standards to help utilities and manufacturers avoid PQ problems. Our engineers are experts in designing and delivering training. Our experience with a broad range of customers enables us to teach electricians as well as engineers how to conduct PQ investigations correctly.

Electricians don't get enough exposure to PQ in school or on the job. The experience they need to successfully investigate PQ problems to ensure a profit can only be acquired by establishing a partnership with Electrotek. Training can be administered in our PQ Training Center in Knoxville, TN, at the contractor's office, or on-line through our PQ e-Knowledgebase Program.

Electricians need experience with hands-on monitoring in a controlled environment not linked to a customer's actual business. They need to experience safely installing and setting up monitors, learning which loads cause disturbances, and how to communicate PQ results to a customer.

Power Systems and Power Quality Engineering Services Center

Electrotek's Power Quality Engineering Services Center is a world-renowned center for power systems and power quality engineering. Our Center includes an Advanced Power Quality Testing & Research Laboratory.

Learn about our Center by visiting: www.pqengineering.com

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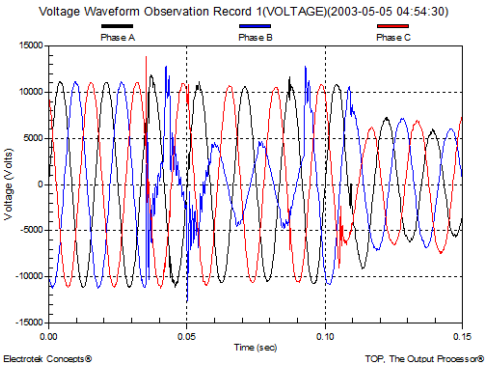
PQView®

An Art: Linking PQ Monitoring Data to PQ Equipment Problems

Thirty years' ago utilities, manufacturers, and end users didn't know why their equipment was malfunctioning and failing. All they knew was that the lights blinked and something went "pop", and their equipment was dead.

No two pieces of equipment respond the same way to any disturbance. "Text-book" disturbances don't occur in the real-world. Complex disturbances like the one shown to the left occur in customer facilities. Identifying which types of disturbances are present in this complex waveform is the easy part—determining which one(s), if any, caused an equipment malfunction or failure is the hard part.



A complex disturbance captured in a customer facility that cause an equipment failure.

Electrotek's vast experience in analyzing , and linking monitoring results to the cause of equipment malfunctions and failures, is vital to the success of any PQ investigation. Customers want answers—causes and solutions. Also, what the effects—the dead equipment, charred circuit boards, and smoke are the effects of poor internal PQ.

Contractors must be prepared to gather background information and data correctly the first time and deliver a report with causes and solutions soon after the first site visit. Electrotek is your resource.

About Electrotek

Founded in 1984, Electrotek Concepts, Inc. is world renowned for its research, developmental, applications and problem-solving work in understanding, identifying, analyzing, and preventing power quality (PQ) problems. Our expertise extends from the utility generators to inside the electrical/electronic load inside a customers' facility. The experience of Electrotek's team of PQ engineers extends from experts in utility power systems, participants on IEEE and IEC standards boards regarding PQ standards, and to designers of end-use electronic equipment. Our engineers are armed to address any PQ problem at any level. The future of reliable, available, power and customer equipment in today's modern technological society depends on compatibility between utility power, the customer's facility electrical system, and the end-use equipment customers depend on to carry out their day-to-day business activities.