

PROFESSIONAL REVIEW

Electrician cuts time in arc flash zone in half with wireless tools

Title: Journeyman electrician

Tools: Fluke Connect® system

Key benefits: Increase productivity, lower costs, maximize uptime

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Working on live circuits is probably most electricians’ least favorite task. But sometimes it’s the only way to get the job done. We recently heard from Jim, a journeyman electrician in the Midwest of the United States who found a way to reduce his time in the arc flash zone and increase accuracy, by turning to Fluke wireless tools.

One of Jim’s jobs requires taking quarterly voltage and amperage readings at a large data center. The data center is always in flux as new computer racks are added and others become obsolete and are decommissioned. The quarterly power surveys let the customer know where power capacity is available for new racks and which panels are near maximum capacity. Electricians need to take readings on approximately 9,500 individual wires from the sub-feeder breaker to the branch circuits.

The data center is powered by 480V three-phase power that is fed to approximately 60 power distribution units (PDUs). Transformers convert the 480V power to 120V/208V three-phase power that is fed to the breaker panels.

Originally, the project required two electricians to suit up in full PPE (specified by the NFPA 70E Standard for Electrical Safety in the Workplace) before entering the arc flash zone. One used a clamp meter to measure each wire and called out the readings to the other electrician who stood nearby with a laptop and entered the values

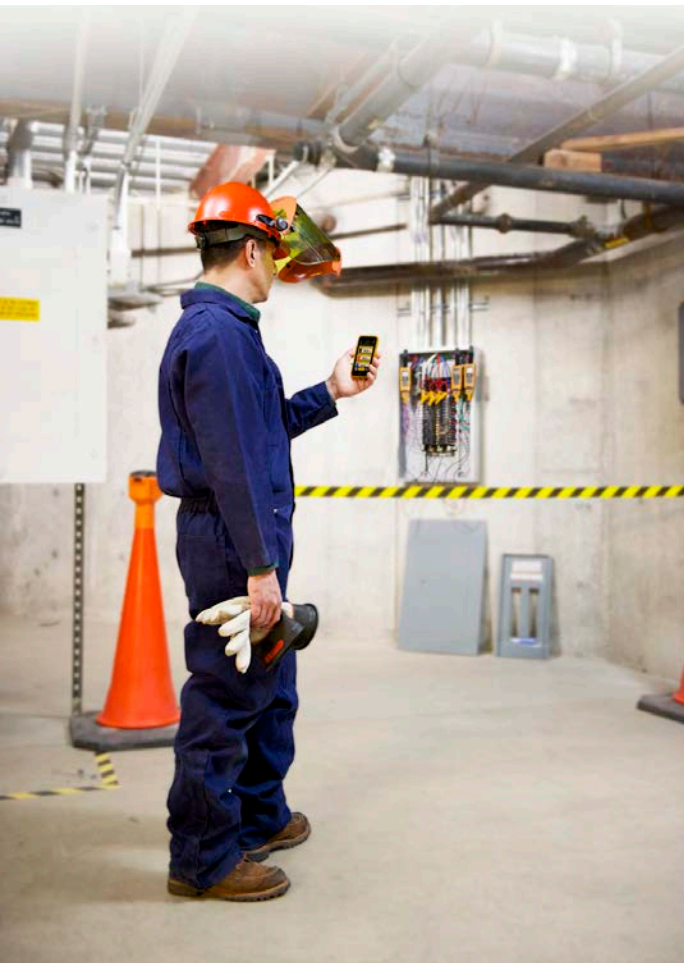
into the customer’s custom Excel spreadsheet template. The job typically took about three weeks.

“A completely full panel requires 42 readings,” Jim explains. “We couldn’t turn anything off so we had to suit up completely to meet NFPA 70E PPE requirements. That meant we were trying to communicate verbally while we both were wearing ear plugs and one had a face shield. It made it very difficult to convey the information accurately.”

One day, Jim saw an ad for Fluke wireless tools that became the forerunner of the Fluke Connect® system. The advertised system consisted of a master meter that could read measurements wirelessly from a series of current, voltage, and temperature modules from several feet away. Within a week, he had checked out the wireless tools at a local distributor, received approval from his boss, and bought a wireless digital multimeter and clamp meter.

He said that turned out to be a great move. Now an apprentice electrician, who’s not allowed to be in the arc flash zone, can stand 30 feet away from the test point with the meter that wirelessly receives the readings from the clamp meter that Jim attaches to each wire at the panel. The apprentice then enters the measurement into the spreadsheet. (The Fluke Connect® platform can now send measurements to a smartphone for upload to the cloud and web-based software.)

“With the Fluke wireless system each measurement takes only about three seconds so we get the job done in about eight days compared to 15 days with the previous process,” Jim notes. “That means half the time in the arc flash zone, and a savings for our customer.”



Fluke file photo