

Application

# Good instruments are always worth playing

Transformer maintenance with CPC 100 + CP TD1

Instrument during the night: electric guitar

Instrument during the day: CPC 100 + CP TD1

Christopher Rutledge has worked for Memphis Light Gas and Water (MLGW) for 22 years and is Supervisor of Power Transformer Testing. We recently sat down with him to talk about how MLGW performs transformer maintenance and testing.





### **Chris, how is transformer maintenance performed at MLGW?**

I'm a true believer in the importance of regular maintenance and testing. My utility has a fleet of 170 substation transformers. With proper testing and maintenance, you can catch problems before they become serious, and extend the life of a transformer by 15 years or so. This can result in huge cost savings over the long term.

### **You seem passionate talking about transformer maintenance. We heard you have another big passion?**

Yes, I love playing the guitar since I was 9 years old. I actually never really took a formal guitar lesson. I just picked it up and taught myself how to play. Today, my band is playing all kinds of music in venues across the United States. By the way, this is also how I learned about OMICRON.

A few years ago, OMICRON toured across the United States with their Road Show Bus and they also visited MLGW as part of a utility tour in Tennessee. I was really impressed by their wide variety of substation test equipment onboard the bus.

### **And today, you make use of OMICRON's test equipment?**

I currently perform all of the various measurements with my CPC 100 + CP TD1, including overall power factor and capacitance, transformer turns ratio, exciting current, leakage reactance, and variable frequency power factor. I really like to have one single test system and that I don't have to go back to my truck and drag a bunch of different units out to do all of the tests – with OMICRON one unit does it all. Especially the more advanced tests like variable frequency power factor from 15 Hz to 400 Hz assess the condition of our power transformers comprehensively.

### **How is a typical test procedure performed?**

On site, I use my laptop with the Primary Test Manager™ (PTM) software together with the CPC 100 + CP TD1. PTM is very intuitive and user-friendly. The graphs in PTM are so valuable including wiring diagrams which help you set up the test equipment in the right way.

### **Do you interpret the test results yourself?**

Yes. With PTM, anybody can look at the results and easily understand the condition of the transformer. In addition, OMICRON engineers came on site and gave me comprehensive training on not only how to use the test instrument, but also what the test results mean. I've been impressed by OMICRON's technical support and on-site training. I remember very clearly a while back I was having a problem with a transformer and an OMICRON engineer stayed on the phone with me for 1 ½ hours,



### OMICRON Road Show Bus

Driving home our commitment to help replenish expertise in the power industry, the OMICRON Road Show Bus is traveling across North America bringing testing solutions directly to utilities, manufacturers, and testing companies. The “classroom on wheels” is completely outfitted with all OMICRON products on display and has seating for up to 20 people. The bus has visited more than 40 states and made nearly 1,000 bus stops for training and product demonstrations.

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walking me through the tests, explaining in great detail the exciting current test results. He even explained the theory behind the numbers, making sure that I fully understood everything. The engineer took the time to fully answer all of my questions, and was very patient with me.

Thanks for the interview. 📌

### Memphis Light Gas and Water

Memphis Light Gas and Water (MLGW) is the largest three-service municipal utility in the United States, serving about 420,000 customers. Since 1939, MLGW has met the utility needs of Memphis and Shelby County residents by delivering reliable and affordable electricity, natural gas and water service. MLGW is supplied with electricity by the Tennessee Valley Authority (TVA), a federal agency that sells electricity on a non-profit basis. MLGW is TVA’s largest customer, representing 11% of TVA’s total load.

[www.mlgw.com](http://www.mlgw.com)

### CPC 100 + CP TD1

The CPC 100 is a revolutionary all-in-one test system for substation commissioning and maintenance. It facilitates extensive testing on all primary power apparatus, such as power transformers, current transformers, circuit breakers, as well as associated equipment like bushings, surge arresters, and tap changers.

Combined with the CPC 100, the CP TD1 measures the capacitance and the power/dissipation factor with laboratory precision even in environments experiencing strong interference.

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