FLUKE®

Use Study

Industrial applications

Name: Rick Ramirez

Title: Power Station Electrician

Company: Utility company

"By taking simultaneous measurements, the Fluke system would give us a complete picture of the event"

"What would I use a wireless measurement system for?"

Simultaneous readings on two different floors

With the Fluke wireless system, we could do load surveys on various panels. We would attach current and voltage probes on both phases and the neutral, let them take readings over time, and look at the measurements to see if the load is balanced.

The voltage on our 480 V feeders drops quite a bit when the 5000HP 480 V boiler feed pump starts up. The UPS pulls from the motor control center (MCC) in the room below, so we would put voltage and current modules on the UPS panel, the MCC where the power comes in and wiring going to the bucket to determine if the problem is in the bucket, the wiring to the bucket, or the UPS. With the Fluke wireless system we could take simultaneous readings on two floors and compare values in real time.

In case of a system blackout with loss of auxiliary power, we employ an emergency backup lube oil pump (EBOP), which we test every year to measure the start up time. The EBOP is set to start when the pressure drops to 10 pounds-per-square-inch (psi) and not let the pressure drop below 2 psi to prevent loss of oil pressure on the bearings, which would wipe them out. With the Fluke wireless system, we would measure the feed current going to the motor, voltage at the motor and voltage at the battery bank with the chargers turned off to check how fast the EBOP comes up. We'd then run it another 30 minutes to confirm that the dc batteries last long enough to allow the turbine to spin down without losing oil pressure. By taking simultaneous measurements, the Fluke system would give us a complete picture of the event.

We are presently looking at a way of testing the temperature at the exhaust end of our peaking unit engines. The rear vibration probes do not last long and we feel it might be heat—which may exceed 1000 °F—causing the problem. We would place the temperature module next to the vibration probe to read the temperature after a run. Since we never know when the unit will run, we would log data from the sensors, wait until the unit runs—normally the unit goes to full load (135 MW) and then goes down to 10-20 MW load running as a spinning reserve until shut down—then retrieve the data from the modules for analysis.

The Fluke wireless system

One central meter that receives wireless voltage, amperage and temperature readings from multiple sister meters placed in a variety of locations up to 20 meters away.

©2012 Fluke Corporation. Specifications subject to change without notice. 8/2012 4273159A_EN
Modification of this document is not permitted without written permission from Fluke Corporation.