

Testing Times

A Newsletter for the Electrical Construction and Maintenance World

Volume 2 No. 2

Testing, 1, 2, 3...

Unscheduled downtime. In this day and age, an unplanned outage of any kind is intolerable. Preventive maintenance of electrical equipment plays a key role in minimizing outages, yet this type of maintenance is often overlooked. Preventive maintenance is important for many reasons:

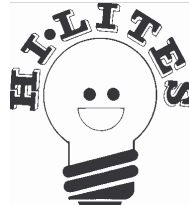
- increased equipment productivity
- increased equipment life expectancy
- reduced unscheduled outages
- reduced insurance premiums

According to the IEEE *Design of Reliable Industrial and Commercial Power Systems* (Std 493-1990),

Electrical equipment deterioration is normal. But left unchecked, the deterioration can progress and cause a malfunction or electrical failure....Water, dust, high or low ambient temperature, high humidity, vibration, component quality, and countless other conditions can affect proper operation of electrical equipment. Without an effective electrical preventive maintenance program, the risk of serious electrical failures increases.

The frequency of maintenance will vary based on the type of facility and the conditions listed above but will fall somewhere in the six month to three year range. A good starting point would be annual testing. If no maintenance problems are found after a couple of years, the frequency could be decreased. If equipment deterioration and problems are present, the frequency should be increased.

Preventive maintenance testing should include high voltage switches and circuit breakers, protective relays, power transformers, all significant circuit breakers, ground fault systems, and motor control centers. For additional information, please contact Hood-Patterson & Dewar at (404) 296-5990.



December 31, 1995 is the deadline for building owners and property management companies to implement the City of Atlanta Building Code ordinance concerning ground fault protection. For more information about which buildings are affected, contact the City of Atlanta Bureau of Buildings at (404) 330-6150.

A Lot for a Little...

An **infrared survey** is the least expensive and most effective means of maintaining a reliable electrical distribution system. The infrared principle is very simple: electrical problems generate abnormal heat prior to failure. An infrared camera measures the difference in temperature between a normal electrical component and the component being tested. This comparison indicates to the trained technician if a potential problem exists. Once a technician identifies an electrical problem, he will recommend the necessary repairs in a detailed written report. Maintenance personnel can then perform repairs at scheduled times and outages.



An infrared survey is a non-contact form of electrical testing that is performed during normal working hours and requires no equipment shut-downs. With an assistant to remove and replace electrical equipment covers, a trained infrared technician can scan the equivalent of a typical five-story office building in one day. For most buildings, an infrared survey should be performed annually.

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Infrared continued...

The infrared survey report should include a complete list of all devices and locations that were scanned. A detailed maintenance sheet should be included for all problem areas. This maintenance sheet should include the infrared picture with each "hot spot" labeled, a priority status based on temperature rise and function, a description of the problem, and the corrective action recommended.

Justification for an infrared survey is easy because this service relates directly to the bottom line at any facility. An infrared survey increases electrical equipment life expectancy, decreases downtime, increases energy conservation, and can reduce insurance premiums.

For more information about this service, contact Hood - Patterson & Dewar at (404) 296-5990.

Call Hood-Patterson & Dewar at 404-296-5990 for more information on:

Start-up and Acceptance Testing
Insulating Fluid Testing
Hospital Isolation Testing
Infrared Surveys
Preventive Maintenance Testing
Ground Grid Design
Lightning Protection Analysis
EMF Surveys

Short Circuit and Coordination Studies
Grounding System Surveys
Load Surveys
Harmonic Analyses
Reliability Studies
HiCon Chemical Ground Rods
EPRI Smart Ground Multimeter



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