

# Testing Times

A newsletter for the electrical construction and maintenance industry

Volume 6 No. 1

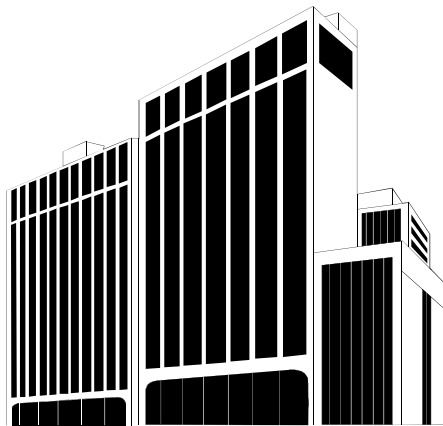
## Who says I should test?

**Y**ou may read our newsletters and think, sure; they're recommending maintenance testing, but they're in the testing business. What real evidence is there to say that I should perform (or recommend my clients perform) regular preventive maintenance testing? We have compiled some information for you from other sources to support our case.

Lack of electrical system maintenance is the **leading cause** of electrical equipment failures according to Hartford Steam Boiler (HSB). Their failure statistics include the following:

<i>Loose connections/parts</i>	30%
<i>Moisture</i>	17.4%
<i>Dust/dirt/oil</i>	2.2%

Many people assume that little can go wrong with their electrical distribution system. This very vital system suffers from the out of sight, out of mind syndrome. It's hidden in the basement, in the walls, and in electrical closets, and as long as every one has seemingly reliable power, no one gives it a second thought. The Institute of Electrical and Electronics Engineers (IEEE) reports that electrical distribution system failures are three times as likely in facilities without an electrical preventive maintenance



**Office buildings rank first in electrical distribution system failures.**

program.

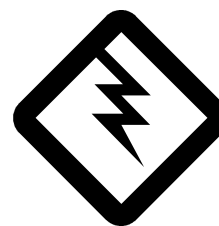
Are you at risk? HSB ranks the following business segments in number of electrical system failures:

1. Office buildings
2. Retail/Wholesale centers
3. Municipalities
4. Hospitals/healthcare facilities
5. Appliance/hardware manufacturing
6. Residential
7. Paper mills
8. Primary/secondary schools
9. Hotels
10. Automobile manufacturing

As evidence, HSB inspected 200 of the buildings it insures in New

York City and found that 25% of them had electrical system problems that needed to be repaired in the next 30 days. "Electrical system failures are second only to heating and cooling failures as the most common equipment breakdown". HSB's data further indicates that 90% of all electrical system failures occur in standard commercial buildings and that 75% of all electrical system failures are caused by lack of maintenance. Even inadequate maintenance decreases the chance of failure by 5 to 1 if annual maintenance is performed versus not performed in the last 24 months according to the

*(continued on page 2)*



## News Update

### Short Circuit and Coordination Studies

**T**raditionally, a short circuit and coordination study (SCCS) is performed in conjunction with a new facility. Have you ever considered making a periodic study (every 5-7 years) part of your long term maintenance plan? Changes can occur in any building over time that cause the original SCCS to become obsolete.

*(continued on page 2)*



**HOOD - PATTERSON & DEWAR INCORPORATED**  
 ELECTRICAL ENGINEERING AND TESTING  
 POST OFFICE BOX 1048 • DECATUR, GA 30031  
 TELEPHONE (404) 296-5990 • FAX (404) 299-3542

**(Who says? Continued from page 1)**

IEEE Gold Book. A Factory Mutual study indicates that in a two year period, half of the losses associated with electrical equipment failures might have been prevented by an effective maintenance program.

So does Hood-Patterson & Dewar recommend maintenance testing? Absolutely, and we have the word from other industry experts to prove it! ❖

**(SCCS Continued from page 1)**

These changes can include:

- Utility changing out the transformer serving the facility
- Building or equipment renovations/expansions
- Changes in electrical system configuration
- Replacing or adding overcurrent devices

Look for changes in configuration, available short circuit current, fuse classes or ratings, circuit breaker type or ratings, and trip settings on breakers and relays. Any of these items can warrant a new SCCS.

**FaxBack**

We are pleased to offer back issues of our Testing Times to our readers. If you see any topic(s) on the list below that you have missed, please check it and fax this page to us. We will mail you a copy for your files.

- \_\_\_\_\_ Spring 1995: Who is H-P&D/ Before The Lights Go On(Start-up testing)
- \_\_\_\_\_ Fall 1995: Testing 1,2,3...(Maintenance testing)/Infrared Surveys
- \_\_\_\_\_ Winter 1996: Mystery Unveiled - Ground Faults/How to Choose a Testing Firm
- \_\_\_\_\_ Spring 1996: Short Circuit Study/ One-Line Update
- \_\_\_\_\_ Summer 1996: Coordination - Selectivity & Protection/Electrical Testing Specifications
- \_\_\_\_\_ Fall 1996: Maintenance Testing - How much?/Cable Testing for Maintenance
- \_\_\_\_\_ Winter 1997: Routine Torquing - a good practice?/Ground Fault Protection - a necessity
- \_\_\_\_\_ Spring 1997: Grounding - Why Ground?/Testing Grounding Systems
- \_\_\_\_\_ Summer 1997: Zone Selective Interlocking/Commissioning
- \_\_\_\_\_ Winter 1998: Insulation Coordination/Cable Testing Update
- \_\_\_\_\_ Spring 1998: Tested at the factory?
- \_\_\_\_\_ Fall 1998: Ready for testing?
- \_\_\_\_\_ Company Information

Fax this page to: **404-299-3542.**

**HOOD - PATTERSON & DEWAR INCORPORATED**

ELECTRICAL ENGINEERING AND TESTING  
 POST OFFICE BOX 1048 • DECATUR, GEORGIA 30031



**inside:**

- Why test?**
- Short circuit studies**