

# Testing Times

A Newsletter for the Electrical Construction and Maintenance World

Volume 2



**W**ho is Hood-Patterson & Dewar, Inc.? No, not a law firm or an accounting firm; we are an electrical testing and engineering firm based in Atlanta, GA. Incorporated in May 1982, Hood-Patterson & Dewar, Inc. (H-P&D) is the merger of the testing capabilities of two companies: Hood Engineering & Testing Company and Patterson & Dewar Engineers, Inc. Richard W. Hood, P.E., of Hood Engineering offered electrical testing and consulting services for approximately twenty years prior to the merger. Patterson & Dewar Engineers, in addition to offering civil and electrical consulting services, had developed an electrical testing department before the merger.

Our clients include electrical and general contractors, government institutions, consulting engineers, and commercial and industrial customers along with electrical investor owned utilities, distribution cooperatives, and municipalities. All services performed by H-P&D are done so by or under the supervision of registered Professional Engineers (PEs). It is our policy to offer engineers and technicians who are well versed in both electrical testing and design. This breadth of expertise allows us to provide technical and application support for all our services and products. Some of our capabilities include electrical equipment start-up and acceptance testing, maintenance testing, infrared surveys, harmonic analyses, grounding system audits, short circuit and coordination studies, and load surveys.

Hood-Patterson & Dewar provides a wide range of electrical testing and consulting services for clients in the construction and maintenance industry.

For more information, contact Lyn D. Cosby, Marketing Director at 404-296-5990; FAX 404-299-3542; P.O. Box 1048 Decatur, GA 30031.



**HOOD - PATTERSON & DEWAR INCORPORATED**  
ELECTRICAL ENGINEERING AND TESTING  
P.O. BOX 1048 • DECATUR, GEORGIA 30031

*Before the lights  
go on...*



**I**s there something you forgot to do before you turned the power on in your new building? *Did you have your electrical distribution equipment tested?* Many people assume that when electrical equipment is brand new from the factory and just been installed that little can go wrong. This assumption is far from true!

Problems can occur for many reasons: equipment is usually not tested at the factory and may not work or may be mis-wired; shipping damage may have occurred; equipment may have been damaged during installation or improperly installed; equipment as installed may not meet the design intent of the owner or engineer. If equipment is not completely and properly tested, how can you know that everything is O.K.?

Unfortunately, the types of problems listed above are often invisible. In fact, many of these problems are not discovered until it is too late. For example, a circuit breaker in service for years is finally required to interrupt an electrical fault. It does not trip as needed causing extensive damage to the switchboard the breaker is installed in and the downstream load. *Cont'd.*

Another example is a ground fault protection system on a switchboard main device. At installation, it is only tested with the "push to test" button provided on the switchboard. A ground fault occurs and the ground fault system never trips! Again, extensive damage occurs and in some cases, injury to personnel. These two scenarios are not just hypothetical but are real life situations that occur all too often. There is a way to help prevent these events from happening: the answer is Start-Up and Acceptance Testing!

Start-up and Acceptance Testing is recommended for medium voltage switchgear (above 600 volts), medium voltage cables (above 600 volts), 480 volt switchboards and circuit breakers, power transformers, motors and

generators, busduct, grounding systems, and automatic transfer systems. Furthermore, testing of ground fault protection systems is not just recommended but required by the National Electric Code, Article 230-95(c).

Think of this testing as very inexpensive insurance on the life and health of your electrical distribution system, your facility, and its occupants. A little testing before turning the power on can go a long way towards ensuring the safe operation of your electrical distribution system. For more information on Start-up and Acceptance Testing, contact Hood-Patterson & Dewar at 404-296-5990; FAX 404-299-3542; P.O. Box 1048 Decatur, GA 30031.

**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  
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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