

Testing Times

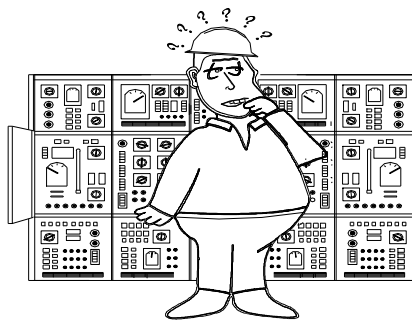
A newsletter for the electrical construction and maintenance industry

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Electrical Testing Specifications: Know What You're Getting

In today's busy world, any shortcuts we can apply to make life simpler seem like a good thing. This premise is true as long as you are getting exactly what you want. Electrical testing specifications are an example where you may need to do a little homework before you apply a shortcut. A frequently used shortcut for electrical testing specs involves inserting standardized specs in lieu of site specific, custom specs. One of the most widely used standard testing specs is the InterNational Electrical Testing Association's (NETA) *Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems*. We often see specs for electrical equipment testing that simply say "the ... shall be tested per NETA specifications."

Although any experienced, qualified electrical testing firm will be familiar with and able to test per the NETA specifications, the Owner and Engineer may be getting more than they want in terms of testing scope and therefore price. A good example of this is circuit breaker testing. The NETA specs do not differentiate between the tests that are performed on a 2000 amp breaker



Make sure you are familiar with the requirements of standardized electrical testing specifications before you apply them

and a 20 amp breaker. NETA specs require that every single breaker on the project be tested in the same manner. The NETA breaker tests include visual and mechanical inspection along with electrical tests: insulation resistance measurements (megger), contact resistance measurements and primary current injection measurements.

While all these tests are valuable in determining the proper function and operation of an individual breaker, this degree of testing may not be essential for every breaker on every project. These breaker tests are time consuming and therefore costly. In some facilities where 24/7

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Arc Flash Hazard Labels and the City of Atlanta

Several of our past *Testing Times* issues have discussed the Arc Flash Hazard label requirements in the 2002 National Electrical Code. Article 110.16 requires that electrical equipment have "field marking" to warn qualified persons of potential electric arc flash hazards. As the current NEC edition becomes adopted and implemented by municipalities and authorities having jurisdiction (AHJ), this labeling requirement is being enforced. Because the 2002 NEC is not specific about labeling information, local authorities are adopting their own interpretations of this requirement.

In a new mandate, the City of Atlanta has begun requiring very detailed field labeling on all new electrical equipment. This mandate applies to all projects including interior renovations. An engineer working on a project in Atlanta was told by the inspector that he needed labels on the panelboards. He performed the calculations himself and made labels saying "Level

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uptime of the electrical distribution system is mandatory, such as a data center, this level of testing is warranted. But in many facilities such as an office building, shopping center or other commercial facility, this extent of testing would add unnecessary cost to the project.

The Engineer needs to determine the optimal amount of testing that needs to be performed for a specific project. Standardized specifications can still be applied with notations such as "All breakers 225 amp and above shall be tested per ... specifications" or "All panelboard main breakers and all switchboard breakers shall be tested per ... specifications." Standardized testing specs can be a time saver for the specifier, but make sure you are familiar with the actual requirements of the specs before you apply them. Otherwise, you may be getting more electrical testing than you want or need. ❖

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1", "Level 2", etc. The City of Atlanta rejected his labels stating that they wanted more information on the labels including a listing of the required Personal Protective Equipment (PPE) such as clothing, gloves, facewear, etc.

Other municipalities will also be adopting similar stances where electrical distribution equipment will be rejected without proper labeling. Until future NEC editions clarify what information should be on the field labeling, it is up to the AHJ to determine what information is required. An Arc Flash Hazard (AFH) study should be performed along with a Short Circuit and Coordination study on all new construction, renovations and additions. Most AFH studies performed by a qualified, registered Professional Engineer should provide labels with the type of detail required by electrical inspectors. ❖

We need your input!

H-P&D's *Testing Times* is designed to inform you about issues and answer your questions concerning the electrical testing industry. We need your input on topics you would like to see us cover in future issues. Please send any questions, comments or topic suggestions to the editor, Lyn Cosby, at Lcosby@hoodpd.com or fax (404) 299-3534. If we use your suggestion for a newsletter topic, we will send you a \$25.00 American Express gift card.

We look forward to hearing from you!

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