

## **TESTING PROCEDURES**

MJM Electric, Inc. – Scope of Work for Testing

- ◆ **Infrared Inspection** NFPA 70B 18-16.5. Perform annual Infrared Inspection of Electrical Distribution System.
- ◆ **\*Test Main Service Breaker** Verify that the Main Breaker is operational in all aspects and meets NFPA 99 Appendix C, and NFPA 70B. Record all findings.
- ◆ **\*Exercise Main and Feeder Breakers** (According to NFPA 99) Record all findings and document tests on each switch. According to NFPA 99, “This test is to be performed annually on all transfer switches, main switchgear and generator switchgear.” Also according to NFPA 99, every breaker should be opened and closed manually to verify mechanical operation (i.e., looseness, etc.) The main switchgear is also to be inspected visually for signs of overheating and cleanliness on bus bars and connections.
- ◆ **Check Phase Balance Modulation** Record and document all voltage and current draw measurements on all branch main panels, preferably during thermography inspection while panels are open, in order to prevent redundant work.
- ◆ **Resistance to Ground Reading on Electric Service** Measure and record resistance from main distribution ground to service ground.
- ◆ **Receptacle Tests** Test all receptacles in critical care and general care areas. Verify required tolerances are met as per NFPA 99, 3-3.3.3. Record all measurements as “Pass” or “Reason for Failure”. The criteria are as follows:
  1. Visually inspect receptacle for physical integrity.
  2. Verify the continuity of the grounding circuit in each circuit.
  3. Verify correct polarity.
  4. The retention force of the grounding blade (except locking types) shall not be less than 115 grams or 4 oz.
  5. Emergency power receptacle face plates are to be painted and uniform in color throughout the facility.
  6. Wet locations shall have GFCI protection. (Bathrooms, kitchens, sink areas, etc.)
- ◆ **Current Leakage Test** Measure and document appliance current leakage in general, wet and critical care areas. Test procedures are as follows:
  1. Test all plug-in appliances utilizing short stop 350 instrument.
  2. “All manufacturer operating and maintenance manuals for each type of appliance are required to be stored with engineering.” - NFPA 99
  3. Perform test with polarity normal and reversed with ground interrupted and test lead attached to the chassis conductive surfaces. Where no conductive surface is present on appliance, a 4” x 7” piece of foil will be used.
  4. Tolerances are set not to exceed 300ua. Document all readings.
- ◆ **Test GFCI Indicators** Test to check if they are operating within tolerance as per NFPA 99 3-3.2.1.2. Tolerances state that trip point should be 6ma or less. Document all readings.
- ◆ **Provide Diagram** Provide computer-generated, one-line diagram of building’s main electrical distribution system.

\* Tests to be performed de-energized or off line.