

## Preventive Maintenance and Breaker testing M.O.P.

(This document is intended to be *brief* example of our process. Each M.O.P. is a lengthy work-effort specific form)

### Low Voltage Switchgear and Breakers

**Prior to all PM's Rotation, Voltage and Ampacity of Utility service and Main distribution will recorded and verified by owner before proceeding with any removal of breakers and/or testing. Pictures will be taken of all conductors before removal. All Conductors will be labeled accordingly to the breaker it is attached to. An M.O.P. will be initiated. Lock out Tag out and PPE is included in all M.O.P's.**

1. Inspect physical and mechanical condition of low voltage switchgear assembly.
2. Verify tightness of all bolted bus connections and torque as per manufacturer specifications.
3. Inspect bus insulators; control PTs and CTs for physical and electrical damages. Check wiring connections including load cables and connection to grounding system, and tighten connection per manufacturer specifications.
4. Check mechanical linkages, doors, barriers, racking mechanism for proper operations. Apply lubrication as needed.
5. Perform IR test on main switchgear bus section between phases and phase to ground per manufacturer specification.
6. Take contact resistance readings and record.
6. Verify proper operations of mechanical key interlock system per manufacturer specifications.
7. Clean all surfaces to be free of dust and debris with microfiber clothes and HEPA Vacuum (no chemicals or cleaning agents are used).
8. Perform primary current injections tests to verify operation of trip sensors/units per coordination settings provided by an engineered evaluation. If ARC Flash study was performed, labeling will be installed. This process is done in conjunction with manufacturer and not self performed by RTP Electrical.

**These steps are just some of the standard PM's performed and can be increased if needed. RTP Prefers to work with Manufacturers directly to ensure the support and part(s) are provided if an issue is found. We have, and will, work with individual testing companies. The steps outlined above will apply, but not be limited to: Medium Voltage Switches, Gear, Transformers, ATS's and UPS distribution. Our M.O.P's are a very detailed step-by- step process for each testing event. We review each item on site prior to the work-effort date with the client. This insures that our team and our client's team are confident the process of the written M.O.P. and contingency plans will reduce any human error.**