

Overview of the New Arc-Flash Guidelines Covering NFPA70E, NEC and OSHA

OSHA adopted electrical safety work practices in 1910 Subpart “S” (Subpart S’s Electrical Safety Work practices 1910.330 to 1910.336), and they are using the April 2004 revision of NFPA70E as a guideline for “enforcing” the Arc-Flash safety rules. **The NFPA70E standards and NEC labeling guidelines require employers and qualified service personnel to:**

- Establish a “Safe Work Condition” and work on system components **de-energized** whenever possible.
- Conduct a Hazard Risk Assessment** - Determine available fault currents and hazard risks at points where there is the potential for contact with an energized part. As a result, the entire electrical system is analyzed and the one-line diagram for the facility is reviewed and updated. The outcome is used to **determine the Hazard Risk Category (0 to 4)**, the required **level of PPE**, the **Protection Boundaries (shock and flash)** and the equipment that requires warning labels.
- Communicate the hazards with **new labeling (per NEC110.16)** on equipment entrances of the “Hazards Assessed” and provide **some type of barrier to warn and restrict** access to unqualified personnel.
- Develop documented training** for equipment operators, service technicians and any other employees that might come in contact with the identified hazard to “qualify” them for hazard preparations and contingencies (preparations prior to servicing electrical systems or coming within boundaries of electrical hazards).
- Re-engineer the processes in the workplace to insure Arc-Flash Safety – create **documented procedures and policies that enforce the hazard assessment**, re-enforces new equipment labeling, and the **use of new “live” work permits**. (FYI, use of current-limiting devices can reduce hazards.)
- Thus... An Arc-Flash Hazard Assessment is required to determine the “proper” PPE that is required for the opening of equipment. The opening of a panel to perform a simple voltage test to confirm de-energizing for the LOTO process, now requires the use of “arc-flash” PPE.**

Protection Boundaries

Two types of protection boundaries are established to minimize electrical hazards. Approach boundaries are established to protect personnel from shock hazards. The Flash Protection Boundary is determined to protect against Arc-Flash hazards and burns.

