

Arc Flash Services

Are your electrical systems NFPA 70E compliant?

Any time that your employees or contract personnel are working on or near live circuits, you are responsible for providing safe working conditions. This includes proper labeling of electrical devices such as switchgear, control panels, motor control centers, panel boards, and any electrical equipment requiring service or maintenance. It is also necessary that employees wear the proper gear or PPE required for each area and that they have specific training on how to avoid electrical hazards. It is our mission to assist in making your facility safe for your employees, your contractors, and yourself. Please note the following:

- NFPA 70E Article 130.2 (D)—Equipment **shall** be field marked with a label containing the nominal system voltage, available incident energy, and the arc-flash boundary.

Revere provides these services to ensure that your facility will be in compliance with the National Electric Code (NEC) electrical safety requirements for employee workplaces as set forth in NFPA 70E and OSHA 29 Code of Federal Regulations (CFR) Part 1910 Subpart S.

We have the expertise and know-how to assist you with any or all of the following:

- Single-Line Diagram Development
- Short Circuit Analysis
- Coordination Studies
- Arc Flash Analysis
- Shock Hazard Analysis
- Arc Flash Equipment Labeling
- Recommendations for PPE (Personnel Protection Equipment)
- Documented Training
- Develop Lockout/Tagout procedures



Personal Protective Equipment (PPE) is required when working on circuits of specified available incident energy to prevent injury and death from arc flash incidents.

Steps required to complete an Arc Flash study

- Site audit to determine preliminary requirements for quotation. (by Revere – no charge)
- Update or create electrical one line diagrams. (by customer or Revere)
 - One line electrical diagram(s) for all devices in the electrical distribution system. This will include everything from the incoming utility substation down through all 3-phase devices that are greater than 208 V, served by a 125 KVA or larger transformer.
- Field Investigations (by customer or Revere)

A database will be created that lists all pertinent data associated with the electrical devices. The following data will be included:

 - Device Manufacturer and model number.
 - Transformer rating, impedance, and voltages.
 - Switchgear nameplate data, withstand voltage of bus, and interrupt rating of the switchgear circuit breakers.
 - Motor Control Center (MCC) nameplate data and main and bucket circuit breaker data.
 - Distribution Panels breaker information for all breakers.
 - Circuit Breakers – trip settings and ratings.
 - Protective overcurrent relay settings.
 - Determine conductor size, length, and quantity to and from all devices.
- Create a software model of the electrical distribution system (by Revere)

A software model will be developed and calculations performed using IEEE 1584 standards.
Optional calculations can be made with the available data.

 - Short Circuit Analysis – maximum fault levels for each device is calculated to identify potential problem areas.
 - Time – Current Coordination Study – to ensure that downstream devices clear the short circuit fault before the upstream devices.
- Print and apply arc flash labels on required devices (by customer or Revere)
- Personal Protection Equipment (PPE) – PPE recommendations and training of customer personnel. (by Revere)
- Mitigation Plan–Recommendations for electrical system modifications to minimize incident energy levels and to decrease the amount of PPE required (by Revere)
- Training–A documented arc-flash electrical safety class



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