BIXBY ELECTRIC

Arc Flash Hazard Analysis Program

Regulations

Per NFPA-70E, IEEE and the National Electrical Code 2002, employers are required to determine if electrical hazards are present, and furthermore to have each employee use the proper types of Personal Protective Equipment that will protect them. NFPA 70E-2000 requires that before a worker approaches exposed electric conductors or circuit parts that have not been placed in a safe work condition, a flash hazard analysis must be performed.
Per NEC 2002, section 110.16 Flash Protection, switchboards, panel boards, industrial control panels, and motor control centers in other than dwelling occupancies, that are likely to require examination, adjustment, servicing, or maintenance while energized, shall be field marked to warn qualified persons of potential electric arc flash hazards. The marking shall be located so as to be clearly visible to qualified persons before examination, adjustment, servicing or maintenance of the equipment.
Are you in compliance with NFPA-70E and the National Electrical Code rules on Arc Flash Hazards?

Note: Many state OSHAs adopt the National Electrical Code as law, and state and federal OSHA organizations have cited companies for being out of compliance with NFPA-70E.

Where and when to perform Arc Flash Hazard Analysis

Hazardous arc flash can occur in any electrical device, regardless of voltage, in which energy is high enough to sustain an arc. In industrial settings common places for a fault include:

- Panel boards and switchboards
- Motor control centers
- Metal clad switchgear
- Transformers
- Motor starters
- High voltage switching and grounding
- Pad mount switching
- Meter bases and meter banks
- Any place that can have equipment failure

Some of the employees that are affected by arc flash hazards are maintenance workers, electricians, operators and HVAC personnel. Examples of tasks that require file rated clothing under NFPA-70E are:

- Removing or installing circuit breakers or fuses
- Low voltage testing
- Working on control circuits when energized parts are exposed
- Applying safety grounds
- Racking circuit breakers
- Racking starters
- Removing bolted covers

Effects of Arc Fault

The effects of an arcing fault can be devastating on a person. The intense thermal energy can cause severe burns in just a fraction of a second. The temperature of an arc can reach approximately 35,000 degrees Fahrenheit or about four times as hot as the surface of the sun. One of the major causes of electrical burns and deaths to workers is ignition of non-fire rated clothing due to an arcing fault.

Why perform an Arc Flash Hazard Analysis?

Without an Arc Flash Hazard Analysis, you cannot properly protect your employees from an arc flash hazard. You must know the values for fault currents as well as clearing time for your protective devices to determine the proper personal protective equipment for your qualified personnel.

Solution

Bixby Electric, Inc. can perform a short circuit study to implement a complete, cost effective arc flash solution for your facility. BEI has the state-of the-art, most current software on short circuit and arc flash calculations, and used in combination with our highly skilled technicians, we will provide an accurate and cost effective study of your electrical distribution system.

Benefits of performing an Arc Flash study

One single accident can be devastating to your company. This study could protect you and your employees from personal injuries, medical costs, insurance costs and numerous fines.