



ARC FLASH

RISK MITIGATION SOLUTIONS

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WHAT IS AN ARC FLASH?

An arc flash is a rapid, unexpected, explosive discharge of electrical energy typically resulting from a short-circuit. It can produce temperatures near 35,000 F, high pressure or blast injuries, eye injuries from UV light, severe heat burns from molten metal or eardrum rupture from sound pressure. The massive energy released continues blasting expanding molten metal and plasma outward with tremendous force called an arc blast until the arc is extinguished. Severe damage is also caused from intense radiant heat and light energy from the far infrared to the ultraviolet that are produced by the arc. Nearby surfaces and objects, including people, absorb this energy and are instantly heated to vaporizing temperatures.

HOW CAN YOU MITIGATE RISK?

A detailed arc flash analysis of your electrical distribution system will reveal incident energy levels and required PPE in accordance with the latest NFPA 70E and IEEE 1584 standards. The entire study relies on the ability to accurately model your distribution system.

CODES & COMPLIANCE

Arc flash can be a safety concern and employers are required to warn employees of potential risks.

The PA Uniform Construction Code is updated every three years as developed by the International Code Council (ICC) and includes code requirements for overcurrent protection/arc flash safety.

Current codes & standards can be found below

- ▶ OSHA 29 CFR 1910.132(d)(1)
- ▶ NFPA 70E 2015, Section 110.1
- ▶ NEC 2014, Section 110.16

WHAT CAN CAUSE AN ARC FLASH?

- ▶ Power Line Surges
- ▶ Obsolete or inadequately rated electrical equipment
- ▶ Rusting Equipment
- ▶ A Spider Web That Becomes Humid & Damp
- ▶ Lightning Strikes
- ▶ Defective or Malfunctioning Equipment Failures
- ▶ Improper Work Procedures
- ▶ Unintentional Contact with Energized Equipment

PROACTIVE SOLUTIONS

Borton-Lawson's team proactively addresses issues by reviewing systems and code requirements. Our electrical engineers focus on power system modeling and analysis.

An Arc Flash Study will not impact facility safety or interrupt power to your operation or process and our proven methodology for analyzing electrical service distribution can easily be added to your operations protocols.

Standard Offerings Include:

- ▶ A reliable and accurate single line drawing of the system
- ▶ Identifying and documenting NEC code violations
- ▶ A complete Arc Flash Hazard Analysis with application of all labels upon completion
- ▶ A short-circuit study to identify any equipment rated below short circuit levels
- ▶ A comprehensive protective device coordination study on all major distribution strings in the facility
- ▶ A comprehensive report with findings and recommendations for corrective action

ADDITIONAL SERVICES

Borton-Lawson can easily pair our standard offerings with additional services to develop power management solutions, generate savings and further mitigate facility risk. Here are some examples of these additional services

- ▶ Thermographic analysis of electrical equipment
- ▶ Loading/power quality analysis on distribution equipment