



ARC FLASH SAFETY

WHAT IS ELECTRIC ARC?

An electric arc is an electrical breakdown where an electric current flows between two points called electrodes. It is a visible plasma between the two electrodes that is caused when the electrical current ionizes gases.

ARC FLASH

An arc flash is the consequence of an electric arc that expel large amounts of deadly energy. The arc blast presents a very serious hazard (potentially fatal) because of the risk of severe burn injuries caused by intensive heat.



According to NFPA 70E, Arc Flash is a “dangerous condition associated with the release of energy caused by an electrical arc.” It is measured in terms of arc flash incident energy E (AFIE), which is used to determine the level of Personal Protective Equipment (PPE), and in terms of an arc flash protection boundary (FPB).



AN ARC FLASH CAN PRODUCE EXTREME

HEAT

The heat from Arc Flash can reach can be 3 times as hot as the sun's surface



PRESSURE

Pressure from an Arc Flash can expel equipment and personnel.



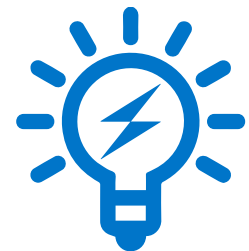
SOUND

An Arc Flash can produce over 150dB of sound. It is 20dB more than a jet.



LIGHT

Intense light can cause blindness and sunburns.



COMMON INJURIES AND DAMAGES

- Burns (skin burn and burned non-FR clothing)
- Fire (could spread rapidly through the area)
- Flying objects (often molten metal)
- Blast pressure (upwards of 2,000 lbs. / sq.ft)
- Sound Blast (noise can reach 140 dB)
- Heat (upwards of 35,000o F)

OTHER EFFECTS OF ARC FLASH

- Muscle contraction
- Tingling
- Breathing
- Dizziness
- Memory Loss
- Chemical imbalances
- Vital organs (heart, lungs, etc.)
- Pain
- Disorientation
- Death
- Nervous disorders
- Damage to vital organs

An Arc Flash will contain the release of thermal energy, acoustical energy, pressure wave and debris. There are many methods of protecting yourself from Arc Flash hazards. This can include wearing the appropriate Arc Flash PPE and modifying the design and configuration of electrical equipment.