

Arc Flash - What's it all about?



Arc Flash has prompted much discussion in the past couple of years, but what does it really mean? Discussion surged with the 2002 edition of the National Electric Code, which required equipment to be labeled as a potential "Arc Flash Hazard".


The concern with Arc Flash is the number of injuries and fatalities that have occurred while working with energized equipment. An arc flash usually results from a fault within the electrical gear caused by dropping a tool or part, or by an equipment failure. The fault arcs when electricity starts flowing through the air and creates plasma, which can reach temperatures of 35,000° F, turning metal into molten shrapnel. The intense heat and expansion can cause severe burns or even throw a person across the room.

Although Arc Flash is not new, technology has been able to answer questions about how to calculate and therefore protect personnel from Arc Flash energy for only the past 20 years. The two standards used to calculate this energy - NFPA 70E and IEEE 1584 - have benefits and limitations. Research and testing to better calculate and examine arc flash energy continues.

Changes to better protect electrical workers will continue. Better information is available every day, and more testing is refining the standards. Proposals being considered for the 2005 edition of the National Electrical Code would require more specific labeling on equipment. A new revision of NFPA 70E should offer more insight into the calculations of Arc Flash Energy and required clothing. Equipment manufacturers are working to develop safer, arc-resistant equipment that is arc resistant and safer to work on.

For more information...

about Arc Flash at your facility, please contact Brent Kooiman at (800) 827-1662 ext. 151 or via e-mail at brent.kooiman@interstates.com.

 WARNING	
Arc Flash and Shock Hazard Appropriate PPE Required	
4'-0"	Flash Protection Boundary
1.30 cal/cm²	Flash Hazard at 18 inches Untreated Natural Fiber (cotton): Pants (long)
FR Clothing: Long-sleeve Shirt and Pants	
FR Protective Equipment: Hard Hat, Safety Glasses, Voltage Rated gloves with Leather Protectors	
480V	Shock Hazard when Cover is Removed
3'-6"	Limited Approach
1'-0"	Restricted Approach
1"	Prohibited Approach
Equipment Name: MDP1 Load Side	

Arc Flash Hazard Label

So what can you currently do about arc flash? An initial step is to ensure no work is done while the equipment is energized. When this is not possible, use equipment designed to be worked live, or make necessary changes to breaker settings or fuses to limit arc flash energy. Finally, calculate potential arc flash and provide the appropriate protective equipment.