# Avoid Arc Flash




## WHAT’S AT STAKE

If you have to work on equipment that cannot be de-energized before you work on it, you need knowledge about arc flash. It can cause traumatic injuries and death.

## WHAT’S THE DANGER

Arc flash can be described as a short circuit through air, in which large amounts of light and heat energy are released explosively from electrical equipment. These waves of energy can damage eyesight and hearing. The superheated ball of gas accompanying the flash can cause burns over your entire body or in your lungs. Pieces of loose or damaged equipment or tools may fly through the air. The amount of heat from an arcing event in low- and medium-energy equipment (480 volts) can be very large. How much heat a worker is exposed to depends on how much energy passes through the system, how long the worker is exposed and distance from where the flash is produced.

**EXAMPLE**

Mike and Bob worked together for 10 years and knew every electrical part of the plant. No one thought an arc flash problem might occur. When their supervisor said to go into the panel switch room for maintenance and cleaning of the switch gears, they didn’t think of wearing personal protective equipment. However, they knew the panel must be left energized. After working only 10 minutes they heard a crackling and then rumbling and a loud explosion. The switch room filled with noise and fire. When paramedics reached them, Bob and Mike had second and third degree burns. Mike had difficulty breathing and Bob couldn’t hear.

## HOW TO PROTECT YOURSELF

- Get training so you can recognize energized equipment and how to work safely with it.
- Generally when workers work on electrical equipment, it should be deenergized with the use of OSHA’s lockout/tagout procedures.
- When electrical equipment must remain energized during work, follow the electrical safety codes describing practices that protect workers from

electrical energy hazards. Know the codes and follow all precautions.

- Know that the employer is required to conduct an arc flash analysis before such work is done. The analysis decides what level the electrical hazard is, so a flash protection boundary can be established. It also helps you select proper personal protective clothing and equipment.
- While working on it, keep an “Arc Flash Hazard” label placed on energized equipment.

## FINAL WORD

Arc flashes are dangerous. Death from their injuries is a real possibility.