

Hazards of Electrical Arc Flash

Handout

An arc flash is a short circuit through the air.

- In an arc flash incident, an enormous amount of concentrated radiant energy explodes outward from electrical equipment, creating:
 - Pressure waves that can damage your hearing;
 - Pressure waves that can send loose material like pieces of damaged equipment, tools, and other objects flying through the air;
 - A high-intensity flash that can damage your eyesight; and
 - A superheated ball of gas that can severely burn a worker's body and melt metal.
- Exposure to an arc flash frequently results in a variety of serious injuries and, in some cases, death.

Many workers believe that if they don't touch something that can shock them, they are protected from an electrical arc flash.

- Workers have been injured even though they were 10 or more feet away from the arc center.
- Locations consisting of many low-voltage equipment sources (below 600 volts) account for the most electrical arc flash occurrences.

An arc flash occurs when electric current flows between two or more separated energized conducting surfaces or between the conducting surfaces and ground.

- Insulation failure is a common cause of an arc flash, perhaps because of corrosion or a buildup of dust and impurities.
- Some arcs are caused by human error, including dropped tools, accidental contact with electrical systems, and improper work procedures.

The best way to prevent arc flash incidents from occurring is to de-energize equipment before beginning work.

- When it is necessary to work on energized equipment, follow safe work practices, including assessing the risks, wearing proper personal protective equipment (PPE), and using the proper tools.

Safety signs, safety symbols, accident prevention tags, and warning labels on equipment warn you about electrical hazards.

- An arc flash assessment will determine the flash protection boundary distance and the type of PPE required.

Always protect yourself by:

- Obeying all warning signs and labels
- Wearing all required PPE
- Only performing functions for which you have been trained and "qualified"