

Arc Flash Hazards:

Anyone who works around energized equipment is at risk of arc flash hazards. It is important to identify, assess and control these hazards to maintain a safe work environment.

What is an Arc Flash?

An electric arc is an electrical explosion that produces a bright flash gas, where temperatures can exceed 35,000 °F (19,400 °C), nearly four times the heat of the sun's surface. The energy released in the arc vaporizes the metal conducting the electricity and produces an explosive arc blast with deafening noises, supersonic concussive forces, and super-heated shrapnel. Arc flash incidents can ignite clothing, cause structural fires, and produce particles of molten metal, causing severe or even fatal burn injuries. At these high temperatures, most items within 3 feet (0.9 meters), including skin and flammable clothing, will burn, melt, or vaporize. Most arc flash burn injuries are a result of the arc igniting flammable clothing and not from the arc itself. }

Causes:

There are several conditions that contribute to arc flashes. Faulty, damaged, dirty, or improperly maintained electrical equipment increases the risk for an arc flash incident to occur while the magnitude of the electrical energy/voltage increases its severity. Any inadvertent movement within the restricted or arc flash boundaries, especially when conductive tools are used, also increases the likelihood of an arc flash incident.

Prevention Methods:

Using lockout/tagout procedures and ensuring the deenergization of electrical equipment.

Conducting an arc flash study/risk assessment to determine the potential for arc flash hazard, determine the available incident energy of the exposed energized electrical conductor or part and determine the appropriate arc-rated PPE.

Identifying and using approach boundaries for qualified and unqualified employees.

Proper maintenance of electrical equipment reduces the risk of an arc flash incident.

Using and maintaining arc-rated PPE and insulated tools.

Appropriate training of qualified workers to ensure they are aware of the arc flash hazards.

If you have concerns about your safety or the safety of others, report those concerns to a supervisor, manager, EHS, Human Resources, Legal and Compliance, or call RPM's hotline.