MISSOURI SAFE@WORK SAFER TOGETHER

TOOLBOX TALK: ELECTRICAL SAFETY

WHAT'S AN "ARC FLASH"?

An arc flash is a phenomenon where a flashover of electric current leaves its intended path and travels through the air from one conductor to another, or to ground. The results are often violent and when a human is in close proximity to the arc flash, serious injury and even death may occur.

ELECTRICAL SAFETY PRECAUTIONS:

DO:

• *Do* inspect all electrical equipment daily prior to use, and tag as needed and report damaged tools

• *Do k*eep a Class C (CO2) fire extinguisher on worksite at ALL times. The standard procedure for fighting electrical fires is to open the circuit and then apply an approved extinguishing agent

• *Do* survey the worksite for overhead power lines and other electrical hazards when using ladders or working platforms. Maintain the required distance from electrical equipment and conductors. This distance depends on the voltage hazard

DO NOT:

• *Do not* use shop made cords with receptacle boxes. Among the most common electrical violations is when a multiple receptacle box, designed to be surface mounted, is fitted with a flexible cord and is placed on the floor to provide power to various tools or equipment. These are not permitted and should be taken out of service

• *Do not* leave extension cords in walk ways or work areas causing a trip hazard

• *Do not* use worn, frayed, or damaged cords.

• *Do not* splice extension cords with electrical tape.

MOST ELECTRICAL ACCIDENTS RESULT FROM ONE OF THE FOLLOWING THREE FACTORS:

• Unsafe equipment or installation

• Unsafe environment

• Unsafe work practices

Some ways to prevent these accidents are through the use of insulation, guarding, grounding, electrical protective devices and safe work practices.

PROTECT YOURSELF AND OTHERS WHEN WORKING WITH ELECTRICITY:

• Understand the construction and operation of the electrical equipment and the hazards involved

• Identify all possible energy sources that could pose on-the-job hazards

• Know safety requirements and follow them.

• Calculate the energy potential

• Select the appropriate personal protective equipment (PPE). Remember, PPE must be worn until the electrical system is in a safe condition

- Complete a detailed job plan and communicate it to all employees
- Before working on or around electrical systems or equipment, identify the load circuits and disconnect. Remember, in some cases, turning power off may cause other hazards. Such hazards and additional guidance should be addressed in your work plan
- Use lock-out/tag-out procedures
- Verify that the equipment or system has been de-energized by testing
- Make sure your test equipment is working, both before and after you use it
- If at any time the job becomes more hazardous than anticipated, stop and revise the plans

Above all, never assume that the equipment or system is de-energized. Remember to **always test before you touch!**

ARC FLASH CAN BE CAUSED BY:

- Dust
- Tools being dropped
- Accidental touching
- Condensation
- Material failure
- Corrosion
- Faulty Installation

We Are Here

Do you have a question about safety and health? Contact us and we can assist you in making your workplace safer.

safeatwork.mo.gov

EFFECTS OF ELECTRIC CURRENT IN THE HUMAN BODY	
0.5 - 3 mA	TINGLE SENSATIONS
3 - 10 mA	MUSCLE CONTRACTIONS (PAINFUL)
10 - 40 mA	"CAN'T LET GO" PHENOMENA
30 - 75 mA	RESPIRATORY PARALYSIS (POSSIBLY FATAL)
100 - 200 mA	VENTRICULAR FIBRILLATION (LIKELY FATAL)
200 - 500 mA	HEART CLAMPS TIGHT
1.5 A	TISSUE & ORGANS BEGIN TO BURN

I UNDERSTAND THE INFORMATION PRESENTED AND THE IMPORTANCE OF ELECTRICAL SAFETY.

COMPANY: DATE:

EMPLOYEE NAME: _____ EMPLOYEE SIGNATURE: _____

COMPANY:

DATE:

EMPLOYEE NAME: _____

EMPLOYEE SIGNATURE: _____

LEARN MORE WAYS TO KEEP YOUR WORKPLACE SAFE.

VISIT SAFEATWORK.MO.GOV.

DEPARTMENT OF LABOR & INDUSTRIAL RELATIONS