

SAFETY MEMO

November 23, 2020 – Arc Flash



Did you know?

Introduction

Electrical hazards are not limited to physical contact with live electrical systems. Working near energized systems or equipment presents a hazard of electrical arc fault.

What is Arc Flash?

An arc flash (also called a flashover) is the light and heat produced as part of an electrical arc fault.

An arc fault is a high power discharge of electricity between two or more conductors. Commonly, an arc fault is expressed as a type of electrical explosion or discharge that results from a connection through air to ground or another voltage phase in an electrical system.

Importance of Arc Flash

The most effective and fool-proof way to eliminate the risk of arc flash is to lockout, deenergize and tagout the electrical distribution components. A check must be done to confirm deenergization prior to working on the system.

An arc flash can cause minor injuries, third degree burns and potential death as well as other injuries including blindness, hearing loss, nerve damage and cardiac arrest. Fatal burns can occur when the victim is several feet from the arc. Serious burns are common at a distance of 10 feet.

Arc Flash Labels

Equipment with arc flash hazards will include the approach boundaries and incident energy level (in calories/centimeter²). Care must be taken when working around this equipment in order to ensure proper procedures to control arc flash hazards.

FLASH PROTECTION		SHOCK PROTECTION	
Working Distance:	455 mm	Shock Hazard when cover is removed:	600 VAC
Incident Energy:	0.80 cal/cm ²	Limited Approach:	1000 mm
Arc Flash Boundary:	356 mm	Restricted Approach:	300 mm
		Glove Class:	0
Refer to CSA Z462 for PPE requirements			
Equipment Name: BUS- CAP BANK#1		Std: IEEE 1584	
Prot. Device: 200A CAP BANK#1		February 14, 2019	
Arc Flash Analysis by: Laporte Engineering Inc.			

Figure 1: Arc Flash Label Example

Arc Flash Approach Limits

The method of approach limits is used to determine approach limits to exposed energized parts with potential for arc flash. As personnel move closer to the exposed and live equipment, the more training and higher level of PPE is required.

The CSA Z462 Workplace Electrical Safety standard and the Institute of Electrical and Electronics Engineer's (IEEE) Standard 1584 : Guide to Performing Arc-Flash Hazard Calculations provide guidance on how to calculate arc flash approach limits.

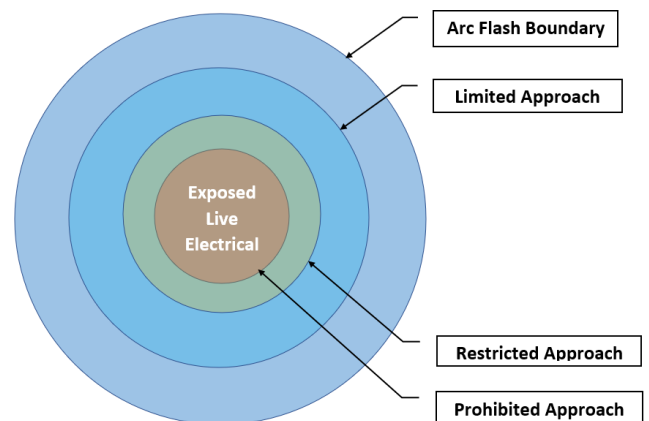


Figure 2: Arc Flash Approach Limits