



Safety Bulletin

Provided as a service of MCAA's Safety Excellence Initiative

Subject: NFPA 70E – 2015 – Conditional Relief from Some Category 2 PPE

Introduction

Under very specific circumstances, mechanical service technicians are now permitted to wear less personal protective equipment (PPE) than what is typically required for work on HVAC units pushing 480 volts or less.

Key Dates

This bulletin addresses work on HVAC equipment pushing 480 volts or less only. If your workers are exposed to equipment pushing higher voltages, please be sure to read the applicable parts of NFPA 70E – 2015. Some of the changes made to provisions covering higher voltages are substantive. For example, the arc flash boundary for what was formerly Hazard/Risk Category 4 has changed from 8 feet to 40 feet.

Current/Standard Requirements for Category 2 PPE:

When service technicians are exposed to energized electrical conductors and/or circuit parts of HVAC units pushing 480 volts or less, they are required to wear the following PPE:

- Minimum 8 Calorie Arc Rated Long Sleeve Shirt and Pants, or Coveralls;
- Minimum 8 Calorie Arc Rated Balaclava;
- Class E Hardhat;
- Minimum 8 Calorie Arc Rated Face Shield With Wrap Around Guarding;
- Ear Plugs;
- Safety Glasses;
- Class Double Zero (00) Rubber Gloves;
- Leather Protector Gloves; and
- Leather footwear.

Some Work May be Performed with Less than the Full Assortment of Category 2 PPE:

NFPA 70E – 2015 requires two types of risk assessments. Separate assessments must be performed for arc flash risk and electrical shock risk. In situations where both **carefully documented** risk assessments show that full Category 2 PPE is not necessary for worker protection, the technician can omit the PPE specified by the risk assessments. However, due to the potential for severe worker injury, and for liability concerns, the risk assessments should be performed by someone who is highly qualified to make accurate risk assessments and assume the liability.

More...

Alert - Warning

Before allowing your employees to work on equipment pushing 480V or less without the full assortment of Category 2 PPE described above... MCAA recommends that you contract with a highly qualified and exceedingly experienced third party company that is also licensed, insured and bonded, to perform arc flash and electrical shock risk assessments for your company. The third party companies that are qualified to make these assessments will carefully document their logic/rationale for the results of their risk assessments based on probability of worker injury.

When specified conditions are met by their employers, mechanical service technicians may, at times, wear less PPE than what is required for standard Category 2 applications. Two examples of tasks that could, when all required conditions are met, be performed with less than the full assortment of Category 2 PPE follow.

- A technician is troubleshooting an air conditioning unit. The electrical box associated with the unit is a large 8 foot wide double door unit. The technician is going to be working in the lower left hand corner of the box on control voltage wiring (24V). The only voltage greater than 50V is the line-side/incoming power in the upper right hand corner of the unit (480V). Since the 480V conductors are not within arm's reach, no accidental contact can be made. In this particular situation, no gloves would be required because the voltage in the area he's working is less than 50V. In this exact situation, if the technician is working five feet or more away from the 480V service, he or she could also work without a face shield and balaclava.
- A technician is troubleshooting inside a 120V enclosure. The incoming 120V power is fed into a small step-down transformer, which reduces the voltage from 120V to 12V. The technician is working on the 12V conductors, but not on the 120V feed. Because the work is within the shock boundary, rubber gloves would be required. However, he or she would not be required to wear the protective leather gloves over the rubber gloves, and would not have to wear any of the rest of the Category 2 arc flash PPE.

MCAA believes that in the near future, NFPA will establish a list of mechanical service work tasks that can be performed without the full assortment of Category 2 PPE, and specify what PPE can be omitted while performing those tasks. The association will encourage NFPA to publish the list as part of NFPA 70E – 2018, which will likely be released in the fall of 2017.