

Arc Flash Quiz 2: Knowledge of Hazards

How important is it to determine your risk of an Arc Flash Hazard?

- OSHA requires hazard analysis of electrical circuits.
- Recently, at least one company was fined over \$1 million dollars for using unsafe electrical equipment.

Question 1: In addition to hazard analysis, NFPA 70E requires some labeling. Which of the following is a new requirement in the 2012 Edition of NFPA 70E?

- A. The contact information for the person who has custody of the arc flash analysis should be posted on the main switchboard
- B. Electrical equipment only has to be labeled with: "Warning-Arc Flash Danger," or
- C. Most electrical equipment should be labeled with its arc flash boundary.

An explanation of the new labeling requirements

- The 2012 edition of NFPA 70E requires more label information per Article 130.5(C). The nominal system voltage and the arc flash boundary are now also required. Supporting information for this label shall be documented.
- The prior edition only required the available incident energy or required level of PPE.

Question 2: Which of the following best describes the difference between using the NFPA 70E Table Method versus using Arc Flash Calculations for arc hazard analysis?

- A. Calculations are more accurate and many times allow lower PPE ratings than using the Table Method
- B. Using the Table Method more often requires using a flash hood or sock hood compared to using calculations
- C. Arc flash calculations have a higher initial cost, but permit worker efficiency and easier compliance with more reasonable PPE requirements, or
- D. All of the above

There are differences between the Table Method and the Calculation Method:

- The Table Method contained in NFPA 70E uses voltage ratings and task descriptions to determine a Hazard Risk Category. It lists the required PPE for every task.
- The Calculation Method uses the IEEE 1584 method to determine the hazard of incident energy expressed in calories per square centimeter. This method is more accurate and can avoid over and under protecting.

Question 3: Which is an acceptable reason to postpone arc flash analysis?

- A. No reported arc flash injuries at the facility
- B. Labels applied before September 30, 2011 and they met the requirements for the 2009 Edition
- C. No OSHA inspections in recent years
- D. If it's too expensive and complicated, or
- E. None of the above

Explanation about the reasons to postpone an arc flash hazard analysis

- Labels meeting the requirements of the 2009 Edition are temporarily sufficient but do require calculation of the arc flash boundary for proper hazard analysis
- A new calculation is required whenever a major modification occurs or at the end of 5 years whichever comes first per article 130.5

OSHA will be taking more aggressive action.

Dr. David Michaels, the Assistant Secretary of Labor for OSHA recently states, quote, *"This Administration is returning to the original intent of the OSHA Act, which is that it be a public health regulatory and enforcement agency... We are moving toward tougher citations and penalties."*

Additional Resources

- Arc Flash Info Center
- Arc Flash articles, white papers & tech topics
- Mersen Electrical Services
- Fuse Control Program