

The Difference is Protection

The arc-flash compliance group at EDG is responsible for providing compliance with today's electrical safety standards for commercial and industrial facilities nationwide.

WHAT IS AN ARC FLASH?

The energy released when electric current passes through the air between ungrounded conductors or between ungrounded and grounded conductors. This release of energy can result in extreme temperatures, up to 35,000°F, in a fraction of a second. At these temperatures material such as steel, copper, and aluminum melt, and turn to vapor, causing intense pressure waves in the form of an explosion. Persons in the vicinity of an arc-flash can experience severe burns, internal damage, blindness, hearing loss, and death. Our professional engineers and designers are well equipped to handle your electrical safety needs. Our experts have extensive experience in electrical safety, electrical systems, and application of the standards to provide a safer working environment with minimal impact on operations.

 WARNING	
Arc Flash and Shock Hazard Appropriate PPE Required	
8.3" 0.4 #1	Arc Flash Boundary cal/cm ² Incident Energy at 18" PPE Category AR Shirt and Pants or AR Coverall
0.48 42" 12"	kV Shock Hazard when cover is removed Limited Approach Boundary Restricted Approach Boundary Class 00 V-Gloves
Equipment Name: BUS-2 Fed By: MCC01-4A	Date: Apr-2015 Calculation: IEEE-1584

Data Collection

Work with contractors and client in-house staff to provide manpower to obtain information about the power system required to perform this service.

Arc-Flash Analysis

Analysis of facility electrical equipment in accordance of NFPA 70E and IEEE-1584, to calculate arc flash values, boundaries, and personal protective equipment.

One-Line Development

On-site data collected by EDG or others is compiled

into a complete working facility one-line, for analysis purposes.

Safety Training

On-site or web training in today's industry standards on electrical safety. Participants gain an understanding of arc-flash hazards, safe work practices, and how to implement an arc-flash compliance program.

COMPLIANCE DRIVERS

According to NFPA 70E-2018; Annex K, approximately 5 to 10 arc-flash incidents occur each day resulting in more than 2,000 workers being sent to burn centers each year. If you are the owner of electrical equipment, you have a responsibility to protect workers and the public from arc-flash hazards. Compliance with NFPA 70E can show that the employer acted reasonably and properly in providing protection.

STANDARDS DRIVING AND DEFINING COMPLIANCE

NFPA 70E-2018

Standard for Electrical Safety in the Workplace

The National Fire Protection Association was established in 1896 and since that time has become the world's foremost authority on fire prevention, publishing standards for all industries and markets. NFPA 70E is seen as the industry consensus standard for electrical safety and is recognized by OSHA; the governing body for workplace safety.

IEEE 1584-2018

Guide for Performing Arc-Flash Hazard Calculations

The Institute of Electrical & Electronic Engineers took on the task of quantifying arc-flash hazard levels. Through extensive laboratory testing and curve fitting analysis, parameters and calculation methods were developed.

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OSHA **Occupational Safety and Health Administration**

While OSHA has not formally adopted the latest version of NFPA 70E at this time, they expect employers to provide an electrically-safe work environment. Many sections of 19 CFR 1910 directly correspond with the NFPA 70E and are referenced in OSHA enforcement cases. OSHA has and will issue citations based upon the NFPA 70E.

NESC **National Electrical Safety Code**

The National Electrical Safety Code (NESC) requires an arc-flash hazard analysis.

HOW TO BECOME COMPLIANT

Identify arc-flash hazards, calculate arc-flash energy, identify PPE required, properly label equipment, train workers in hazards involved and how to protect themselves and others, and integrate arc-flash awareness into your overall safety program.

EDG Expertise

EDG can help you comply with all aspects of NFPA 70E. Our experts have extensive experience in electrical safety, electrical systems and application of the standards to provide a safer working environment with minimal impact on operations.

Data Collection

Data collection is the first, and one of the most important, steps of an arc-flash analysis. Specific data about a power system is needed to achieve accurate results. EDG gives many flexible options for data collection. Options include working with site personnel to guide the data collection process, coordinating and managing a local contractor, or EDG staff working on-site to collect all the data needed.

Arc-Flash Hazard Analysis

Analysis is performed on the power system in order to quantify arc-flash energies and provide guidance on what level of protection is needed when working on a certain piece of equipment. The results of the analysis

are used to create and provide arc-flash warning labels to be posted at all electrical equipment, as well as specific energized electrical work permits to be filled out when energized work is scheduled to take place. The aim of the analysis is to provide guidance to workers to protect themselves as well as those around them in case of an arc-flash.

EDG Approach

EDG, through years of project experience, has developed an efficient approach to arc-flash analysis that gives a better sense of safety integration and growth of in-house knowledge.

One-Line Development

The one-line diagram is the backbone of analysis. Data collected in the field is entered into engineering software and modeled to reflect the existing power system. From this point, many different types of power system analyses can be performed; including Short Circuit Analysis, Protective Device Coordination, Harmonic Analysis, and Arc-Flash Analysis.

Safety Training



When the analysis results are in, EDG can assist with the final steps of compliance. Implementing Qualified and Non-Qualified worker safety training as well as implementing the results into the overall safety program is a requirement by both the NFPA 70E and OSHA. EDG provides training on or off-site to meet your company's needs. Training covers the hazards of electricity as well as how to implement the analysis results at your facility. Incorporating arc-flash into an existing safety plan can be a challenge and EDG can be there to guide you in the process.

CONTACT

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