

The difference is
PROTECTION

DATA COLLECTION ■ ONE-LINE DEVELOPMENT ■ ARC-FLASH ANALYSIS ■ SAFETY TRAINING

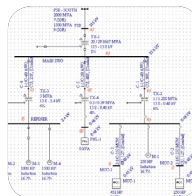
The Arc-Flash Compliance Group at EDG is responsible for providing compliance with today's electrical safety standards, for commercial and industrial facilities nationwide.

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.



Data Collection

Work with Contractors, Client In House staff or provide manpower to obtain information about the power system required to perform this service.



One-Line Development

Onsite data collected by EDG or others is compiled into a complete working facility one-line, for analysis purposes.

WARNING	
Arc Flash and Shock Hazard Appropriate PPE Required	
7' - 8" 13.3 #3	Flash Hazard Boundary cal/cm ² Flash Hazard at 18 Inches PPE Level FR shirt and pants or FR coverall, and arc flash suit
0.48 3' - 6" 1' - 0" 0' - 1"	kV Shock Hazard when cover is removed Limited Approach Restricted Approach - Class 00 Voltage Gloves Prohibited Approach - Class 00 Voltage Gloves
Equipment Name: NORTH SUB (Fed by: NORTH SUB MAIN)	



Arc-Flash Analysis

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



Safety Training

Onsite or over the 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.

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 in 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.



Compliance Drivers

According to NFPA 70E-2009; 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 this protection.

Standards Driving and Defining Compliance NFPA 70E-2009

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 work place safety.

IEEE 1584a-2004

Guide to Performing Arc Flash Hazard Calculations

The Institute of Electrical & Electronics 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.

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 29 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 2007 version of the National Electrical Safety Code (NESC) has been revised to require an arc flash audit by January 1, 2009.

EDG Inc. is a full-service, multi-discipline, international consulting firm. We have established ourselves as a leader in providing cost-effective, innovative and complete solutions for the Oil and Gas, Marine & Terminals, and Cement & Bulks industries. EDG employs engineering professionals in a variety of disciplines, including Mechanical Engineering, Structural Engineering, Chemical Engineering, and Electrical and Instrumentation Engineering. With offices located in the United States, Singapore, West Africa, Vietnam and India, EDG is strategically located to meet the needs and expectations of all our clients. At EDG our mission is to continuously strive for excellence within every project, while maintaining a passionate commitment to providing value to our clients worldwide. As a result of this clarity of focus, we have completed more than 5,500 successful engineering projects to date – and growing.

How to become Compliant?

Identify arc flash hazards, calculate arc flash energy, identify PPE required, properly label equipment, train workers in the hazards involved and how to protect themselves and others, and integrate arc flash 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.

EDG Approach

EDG, through years of project experience, has developed an efficient approach to arc-flash analysis that gives the client options, as well as involvement from start to finish. This gives a better sense of safety integration and growth of in-house knowledge.

Data Collection

Data collection is the first and one of the most important steps of an arc-flash analysis. Very 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 onsite to collect all data needed.

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 analysis can be performed; such as: Short Circuit Analysis, Protective Device Coordination, Harmonic Analysis, and of course Arc Flash Analysis.

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 results is to provide guidance to workers to protect themselves as well as those around them in the case of an arc flash.

Safety Training

When the analysis results are in, EDG can help 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 onsite or offsite 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.

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