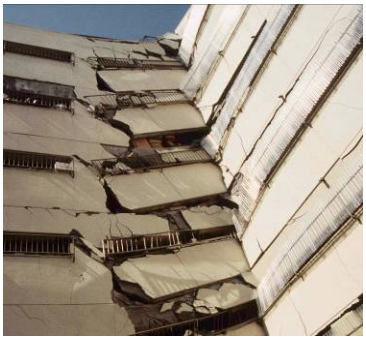

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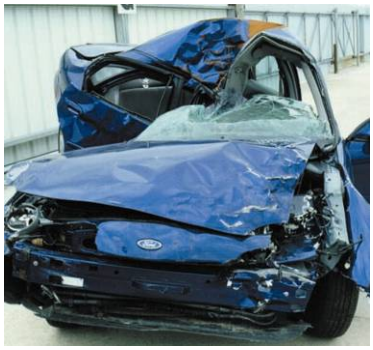
Fire Investigations

Environmental Consulting



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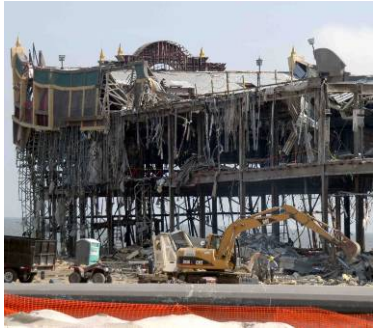

Catastrophe Response

Electrical Safety in the Workplace

NFPA 70E Standard

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EFI Global
Complex Issues • Solid Solutions

Every year, approximately 3,600 workers are permanently disabled, and on average, one worker per day is killed, as a result of electrical incidents in the workplace.* To prevent these types of electrical injuries and deaths, building owners and managers should apply the safeguards included in NFPA 70E, the standard utilized by the Occupational Safety & Health Administration (OSHA) for building electrical assessments. OSHA utilizes the National Fire Protection Association's (NFPA) 70E Standard for Electrical Safety in the Workplace to provide improved safety procedures for workers through proper warning labels, restricted access notification, personnel training and personal protective equipment (PPE). OSHA compliance will minimize workplace injuries, accidents, illnesses, equipment damage, production losses, and legal costs, which are all avoidable and unnecessary factors in any business.

*Source: National Fire Protection Association, 2011, www.nfpa.org.

What is the NFPA 70E Standard?

The National Fire Protection Association has been in the forefront for establishing Life Safety Standards that are utilized throughout the world to improve all areas of safety, especially fire and electrical safety. Quoting the National Fire Protection Association's 70E Standard for Electrical Safety in the Workplace Article 90.3: states "The purpose of this standard is to provide a practical safe working area for employees relative to the hazards arising from the use of electricity." NFPA 70E Article 130.3 states "A flash hazard analysis shall be done in order to protect personnel from the possibility of being injured by an arc flash. The analysis shall determine the flash protection boundary and the personal protective equipment that people within the flash protection boundary shall use."

What is a Flash Hazard Analysis?

A Flash Hazard Analysis is the first step for a facility to meet compliance with the NFPA 70E Standard. A flash hazard analysis (also referred to as a NFPA 70E Assessment) consists of:

- Electrical system(s) site survey
- Determination of short circuit fault current (amps) available at accessible points in the system
- Modeling of electrical system protective devices
- Checking protective devices for sequential fault operation
- Quantifying Arc Flash Hazards
- Providing written NFPA 70E Assessment
- Documentation of electrical system deficiencies
- Recommendations for system improvements
- Installation of warning labeling on equipment

For building owners and building managers to apply the NFPA 70E Standard is more than just a compliance issue. NFPA 70E is also a sound business decision built upon proven practices. When you protect your workers and contractors, you also protect your investment in facilities, equipment and, ultimately, your entire business. EFI Global can provide building owners and managers the guidance and leadership to ensure compliance to NFPA 70E, thereby reducing potential long-term liabilities to your employees and your business.

How a typical NFPA 70E Assessment Works:

The building owner requests that his mid-rise office building be made NFPA 70E compliant. The building owner provides a copy of the "as-built" electrical One-Line drawings for the building. The main floor, the roof equipment and the utility floor electrical distribution equipment are unique, but all tenant floors electrical distribution equipment is essentially the same. EFI Global requests and obtains short circuit current available, transformer specifications and protective device specifications from the electrical service provider.

EFI Global coordinates with the client to perform an electrical system site assessment to view the electrical system, to obtain equipment information, protective device settings and other data not noted on the One-Line drawings and to survey the existing distribution equipment.

Based on the data obtained during the site assessment and from the electrical service provider, NFPA 70E software is utilized to perform a Flash Hazard Assessment, to calculate short circuit available at accessible points in the electrical system and determine optimal protective device coordination settings utilizing time-current curves. EFI Global also determines incident energy levels, quantifies the fault current hazards and establishes work place classifications, approach distances and PPE requirements. This information will be communicated to employees and contractors accessing the electrical system by means of equipment labeling and signage.

EFI Global provides the client with the preliminary NFPA 70E Assessment, which includes recommendations and documentation on issues determined during the NFPA 70E electrical system study. We remain available for an assessment review meeting with the building owner to clarify the assessment and to answer any questions the client may have. We also remain available for assistance in implementation of assessment recommendations or to investigate viable alternatives to assessment recommendations.

At the end of the assessment, NFPA 70E labels are printed and placed on all transformers, distribution switchgear, motor control centers, distribution panels, and breaker panels above 50 volts. The final NFPA 70E Assessment is provided to the building owner when all recommendations have been addressed. The electrical system assessment is complete.

How EFI Global can assist with NFPA 70E compliance:

EFI Global can work with you to prepare your business for compliance to the NFPA 70E Standard and improve overall worker safety. With more than 25 years of engineering experience, John Ehrman, P.E. has provided numerous NFPA 70E Standard Assessments and implementation services, as well as assistance in establishing electrical maintenance procedures and electrical safety training programs.

For more information about the benefits of an NFPA 70E Assessment, please contact:

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