

What You Should Know About NFPA 70E: 2009

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Historically, the National Electrical Code (NEC) and other safety codes have been primarily concerned with protection from fire, electrocution, and shock hazard—arc flash hazards were not specifically addressed. This is now changing; the 2002 NEC contains requirements for warning labels, and the National Fire Protection Association (NFPA) 70E–2004 and Institute of Electrical and Electronics Engineers (IEEE) 1584–2002 provide guidance on implementing appropriate safety procedures for arc flash hazards.

The ruling is fairly straightforward. Companies are required to make arc flash hazards an integral part of an ongoing documented safety program. The official ruling from the Department of Labor states:

Though OSHA does not, per se, enforce the NFPA 70E Standard, OSHA considers the NFPA Standard a recognized industry practice and consensus standard. The OSHA initially used the NFPA 70E Standard to develop its Electrical Safety Regulation for Employee Safety for both General and Construction Industry and NFPA 70E is frequently referenced by OSHA in their electrical standards. Therefore, observed violations of OSHA’s Electrical Standard that are not specifically addressed but referenced under NFPA 70E are typically cited under OSHA’s *(5)(a)(1) General Duty Clause*.

What Is the General Duty Clause

The General Duty Clause is part of the original OSHA Act of 1970 which is enforced under OSHA’s Field Operations Manual (FOM), an internal set of instructions telling OSHA officials how to conduct inspections and set fines. On March 26, 2009 OSHA published a revised version of the Field Operations Manual (FOM). The new FOM, which hadn’t been revised since 1994, heralds an era of more vigorous OSHA enforcement. The most important part of the FOM may just be the clarification it provides on the scope of the so-called “*General Duty*” clause.

OSHA standards require employers to take measures to control the dangers of specific hazards or operations such as trenching and excavation, electrical, confined space work and other hazards. But the people who wrote the initial OSHA laws understood that it would be practically impossible to foresee and create a standard for every possible hazard in the workplace. So they created a section to the law requiring employers to protect employees against other “*foreseeable hazards*” not covered by a specific OSHA standard. This backstop is called the “*General Duty*” clause which is found in the OSHA Act and states:

5(a)(1) *“Each employer shall provide to each employee, employment and a place of employment free of recognized hazards that are causing or likely to cause death or serious physical harm to employees.”*

5(a)(2) *“Each employer shall comply with all occupational safety and health regulations promulgated under the act”*

The General Duty Clause permits OSHA to reference NIOSH, ANSI, ASTM, ASME, NEC, NFPA, EPA, DOT, and various other industry safety standards to enforce the employers’ general duty to provide employees a safe and healthful workplace.

The employer is required to conduct a **PPE Hazard Assessment** in accordance with 29CFR§1910.132 (d)(1), and §1926.28(a).” The employer is responsible to:

1. Assess the hazards in the work place
2. Select, have, and use the correct personal protective equipment (PPE)
3. Document the assessment
4. Train their staff on the hazards

“If the potential for an arc flash hazard is present, exists, or may be reasonably expected or likely to develop or be created or produced, then the employer must select and require employees to use the protective apparel. Employers who conduct the hazard/risk assessment, and select and require their employees to use protective clothing and other PPE appropriate for the task, as stated in the NFPA 70E standard, are deemed in compliance with the Hazard Assessment and Equipment Selection OSHA Standard.”

In short... follow NFPA 70E to be in compliance. But even more importantly, follow the NFPA 70E to protect employees. **Don’t confuse what is needed with what is required.**

What Does OSHA Expect From Us?

OSHA expects quite a bit, actually. Safety is not to be a passive, reactive policy that is brought out after-the-fact or for show-and-tell. Reviewing some of the major requirements:

- Employers must know what their employees do. Understand that §1910.296 only applies to power generation, transmission, and distribution installations and related equipment. Supplementary electric generating equipment (emergency, standby, or similar purposes) is only covered in Subpart S.
- OSHA 29CFR§1910.269(a)(2)(iii) states: *“The employer shall determine, through regular supervision and through inspections conducted on at least an annual basis, that each employee is complying with the safety-related work practices required by this section.”* OSHA would consider that tasks that are performed less often than once a year to necessitate retraining before the performance of the work practices involved begin.
- Employees must be trained in their job tasks. OSHA 29CFR§1910.332 states: *“The training requirements contained in this section apply to employees who face a risk of electrical shock that is not reduced to a safe level by the electrical installation requirements.”*
- OSHA 29CFR§1910.301-.308 basically paraphrases the National Electrical Code (NEC).
- **Selection and Use of Work Practices:** under OSHA 29CFR§1910.333(a) **General.** *“Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.”*
 - (1) **Deenergized parts.** Live parts to which an employee may be exposed shall be deenergized before the employee works on or near them, unless the employer can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate less than 50 volts to ground need not be deenergized if there will be no increased exposure to electrical burns or to explosions due to electric arcs.

Note 1: Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination for an area.

Note 2: Examples of work that may be performed on or near energized circuit parts because of infeasibility due to equipment design or operational limitations include testing or electric circuits that can only be performed with the circuit energized, and work on circuits that form an integral part of a continuous industrial process in a chemical plant that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

Note 3: Work on or near deenergized parts is covered by paragraph (b) of this section.

- In addition, review and consideration of *§1926.416(a)(3)* and *§1926.417* is a must.

So where should we focus our attention? It seems logical that safe work practices should be the focus, and you should ensure that you have qualified personnel who understand the hazards involved with the specific tasks they are required to do for their jobs.

One of the best features of 70E is the tables, specifically Table 130.7. This will assist you in choosing what PPE is required for standard tasks that electrical workers perform.

What Can You Do?

- Get up to speed on the regulations and the NFPA Standard 70E.
- The real reason we should apply the OSHA regulations and NFPA 70E is because no one wants to see another person injured or killed. If we make decisions based on a lack of knowledge, it can have a negative consequence on our employees' lives, credibility of the company and on our future.
- For a copy of the NFPA 70E Standard, visit www.nfpa.org. For copies of the U.S. Department of Labor Occupational Safety & Health Administration Standard Interpretations, visit www.osha.gov.
- Standard Interpretations: 10/18/2006 – Incorporation of NFPA 70E-2000 into OSHA Standards, and 07/25/2003 – *General Duty Clause (5(a)(1))* citations on *Multi-Employer Worksites*; NFPA 70E electrical safety requirements and personal protective equipment.