

IMPORTANT 2018 NFPA 70E ARC FLASH CHANGES AND UPDATES

Thompson Automation Electrical Safety Series Vol. 4

The NFPA 70E has been the go to playbook for electrical safety practices since 1979 when it was first published. To keep it updated and current, every three years it is revised to include new regulations and requirements for electrical safety. The 11th edition, also known as the 2018 version, is right around the corner and there are hundreds of minor and major revisions specifically regarding Arc Flash that you need to educate yourself on.

This overview of the changes does not contain every revision in the 11th edition but is intended as a highlight of some significant changes that you need to be aware of and consider with your electrical safety program and Arc Flash Risk Assessments. The final revision of the 2018 document has not yet been approved and additional changes are still possible before its final publication. You should review the final version when it is published in the event any additional changes are made.

The NFPA in Article 105; Application of Safety-Related Work Practices and Procedures added a new specific responsibility onto the employer that does involve Arc Flash. Article 105.3(A) Employer Responsibility has new text that requires the employer establish, document, and implement a safety-related work practice and procedure standard. In addition, it states that the employer should provide training in safety-related work practices and procedures for employees. This means that if you have employees working around electrical hazards you need to train them specifically on electrical safe work practices and have corresponding procedures to ensure safe work practices are followed. To do this properly you need to have an Arc Flash Risk Assessment completed and train your employees on electrical hazards.

Arc Flash Hazard: The term *“dangerous condition”* was changed to *“a source of possible injury or damage to health.”*

Relating to work involving electrical hazards in Article 130; it is now a requirement for work involving electrical hazards, when an electrically safe work condition cannot be established, workers must follow electrical safety related work practice assessments, precautions and procedures. This Article further clarifies the requirements of an arc flash or shock risk assessment by the worker must include three things:

- (1) Identifying the shock hazards,
- (2) An estimate to the likelihood of occurrence of injury and the potential severity of injury, and
- (3) To determine if additional protective measures are required, including the use of PPE. The way for the worker to identify the shock hazard, estimate the potential severity of the injury, and to determine the proper PPE is by having an Arc Flash Risk Assessment completed.

130.5(H) Defines the employer as the owner of the electrical equipment, and is responsible for the documentation, installation, and maintenance of equipment labels.

The NFPA then goes further in Article 130 to discuss the procedures and evaluation to be done when protective measures are required. When the additional protective measures include the use of PPE, three items must be determined:

- (1) The voltage to which workers will be exposed,
- (2) Safe work boundaries, and
- (3) The PPE required to protect against the shock hazard and injury.

The results of the shock risk assessment need to be documented and specifically include the three before mentioned items. These three items are included in an Arc Flash Risk Assessment.

As it relates specifically to an arc flash or shock risk assessment by the worker it requires the consideration of “likelihood” for an occurrence or accident to happen. Specially in Article 130.5(b) you are told to estimate the likelihood of occurrence of injury or damage to health and the potential severity of injury or damage to health. The Arc Flash Risk Assessment goes a long way in helping make this determination, however it also requires consideration for the age, quality, maintenance, cleanliness and load on the equipment. That is a more difficult task that in part necessitates a qualified person to evaluate a job for the arc flash and shock risk as part of the planning phase to determine if additional protective measures are required, including the use of PPE.

So, what does all this mean to you the employer? Complying with consensus standards can be difficult. NFPA 70E offers electrical safe work practices for the industry. The NFPA 70E is a how-to-comply instruction manual for several of OSHA’s regulations including electrical hazard assessments and how to select the appropriate PPE for electrical hazards. It is however ever changing and keeping up with all the changes can be difficult.

A “Qualified Person” is defined as one who has received training in and has demonstrated skills and knowledge in the construction and operation of electric equipment and installations and the hazards involved

OSHA enforces compliance to NFPA 70E using Section 5(a)(1) of the Occupational Safety and Health Act of 1970, which is commonly referred to as the GENERAL DUTY CLAUSE, as the basis for implementation. As the employer you “shall furnish to each of its employees’ employment and a place of employment which are free from recognized hazards that are causing or likely to cause death or serious physical harm to employees.” As a result, companies

can be cited by OSHA for non-compliance of NFPA 70E. It is more important than ever that you utilize a third party that specializes in Arc Flash Risk Assessments and has the experience and knowledge of the OSHA and NFPA 70E requirements.

Working while exposed to Electrical Hazards?

- (1) Safety related work practices must be used
- (2) Shock Risk Assessment must be performed
- (3) Arc Flash Risk Assessment must be performed
- (4) Only qualified persons are permitted to perform justified energized work.

NFPA 70E Article 130.3

For more information contact:

844.321.3869
sales@thompsonspecialty.com
thompsonspecialty.com

Sources:
ECMAG- What’s New? What’s Changed
NECANET - 2018 NFPA 70E Preview
NTTTraining - NFPA 70E 2018 Updates

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