

2018 Updates to NFPA[®] 70E[®], *Standard for Electrical Safety in the Workplace*[®]

The 2018 National Fire Protection Association (NFPA) 70E, Standard for Electrical Safety in the Workplace, is a national consensus standard developed to help you avoid workplace injuries and fatalities due to electrical hazards. This document provides an overview of the key revisions to NFPA 70E in 2018. Use this information to update your electrical safety program and practices.



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REVISED TERMS AND DEFINITIONS

NFPA 70E adds several new terms and updates a few to promote understanding. The most notable changes are the addition of the **electrical safety program** and revision of **arc flash boundary**.

Arc flash boundary: When an arc flash hazard exists, the distance from an arc source at which the incident energy equals 1.2 cal/cm^2 – *this incident energy level is where you can get a second degree burn on unprotected skin upon exposure to an arc flash.*

Electrical safety program: A documented system consisting of electrical safety principles, policies, procedures, and processes that directs activities appropriate for the risk associated with electrical hazards.

RISK ASSESSMENTS

NFPA 70E now expects detailed, documented risk assessments to be a part of your electrical safety program. You must consider **human performance** in your risk assessments for electrical work.

Use risk assessment findings to select hazard controls, including personal protective equipment (PPE) and insulating protective equipment (IPE).

Informative Annex F gives more information on the risk assessment process. Informative Annex Q provides details on human performance and electrical safety. Informative Annex H and several tables in NFPA 70E provide information on PPE and IPE selection.

ELIMINATION OF LIVE ELECTRICAL WORK

NFPA 70E now emphasizes the use of elimination over other hazard control options. Your goal is to eliminate live electrical work whenever possible to reduce arc flash hazards and electrical shock hazards!

Risk assessments include:

- SHOCK RISK ASSESSMENTS
- ARC FLASH RISK ASSESSMENTS

These assessments require you to:

- Identify shock hazards and/or arc flash hazards
- Estimate the likelihood of occurrence and potential severity of injury or damage to health
- Determine if additional protective measures are required

JOB SAFETY PLANS

NFPA 70E added the components of a **job safety plan**. You need to have a qualified person create a written job safety plan before any electrical work begins. There is no particular form you need to use to write your job safety plan – review and modify your existing hazard analysis process (e.g., job safety analysis, job hazard analysis) to develop these plans. Use this plan to create the energized electrical work permit, if applicable, and job briefing. Update the job safety plan whenever there is a change in the scope of work. Informative Annex I provides a job safety planning checklist and example energized electrical work permit.

JOB BRIEFINGS

NFPA 70E clarifies that a qualified person must use the job safety plan to provide a **job briefing** to all employees involved in the electrical work. You must do the job briefing before the start of work. Include the energized electrical work permit, if applicable, in your briefing. Provide employees with a new job briefing if any aspect of the job safety plan changes.

INCIDENT INVESTIGATIONS

NFPA 70E now requires **incident investigations** to be a part of your electrical safety program. Your program must include information on how to properly investigate any incidents that occur. Include information on root-cause analysis, near-miss reporting, and protocols for follow-up investigations.

LOCKOUT/TAGOUT PROGRAM

NFPA 70E now states the need to have a **written lockout/tagout (LOTO) program and procedures**. Include LOTO provisions for equipment, training, and audits. Review and implement all NFPA 70E, Article 120 requirements to establish an electrically safe work condition. Informative Annex G provides an example LOTO program.

AUDITS

The revised standard requires qualified persons to conduct **audits**. Audits include:

- Electrical safety program audit (every 3 years)
- Field work audit (annually)
- LOTO program and procedure audit (annually)

Set up your audits to identify deficiencies through the review of established programs, training, and worker execution of procedures. Document the completion of each audit and correct all deficiencies.

For additional information on the SMCX's services, please visit the SMCX-hosted website at: <https://www.smscx.org/>.

JOB SAFETY PLAN REQUIREMENTS:

- Job description
- Individual job tasks
- Electrical hazards for each task
- Shock risk assessment results
- Arc flash risk assessment results
- Work procedures
- Special precautions
- Energy source controls



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