NFPA 70E-2015

Updates to the Standard

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NFPA 70E-2015

- Major shift in how stakeholders evaluate electrical risk
  - Definitions in Article 100
    - Hazard
    - Hazardous
    - Risk
    - Risk Assessment

NFPA 70E-2015

- Change arc flash analysis to arc flash risk assessment
- Shock hazard analysis to shock ris assessment
- Electrical hazard analysis to electrical hazard risk assessment
- Hazard identification and risk assessment to risk assessment

NFPA 70E-2015

- Add safety related maintenance requirements and other administrative controls to the Scope statement to clarify that training and auditing are equally important safety-related work practices.
- Removal of “bare-hand” work since the term is considered to be “utility” work.

NFPA 70E-2015

- Energized Electrical Work Permit added to definitions
- Qualified person was revised to correlate the definition with OSHA 1910.399
- Delete Prohibited approach boundary
- Electrical Safety Program must now include condition of maintenance
- Audit of field work - annually

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- Requires location, sizing and application of temporary grounding in job planning
- Clarifying where normal operation of electric equipment is permitted
  - Properly installed and maintained
  - Doors closed and secured
  - All covers in place and secure
  - No evidence of impending failure

NFPA 70E-2015

- Either incident energy analysis method OR arc flash PPE categories method to be used NOT both. IEA method cannot use PPE table 130.7(C)16
- Field marking label is the responsibility of the OWNER!
- Conductive articles shall not be worn within the restricted approach boundary

NFPA 70E-2015

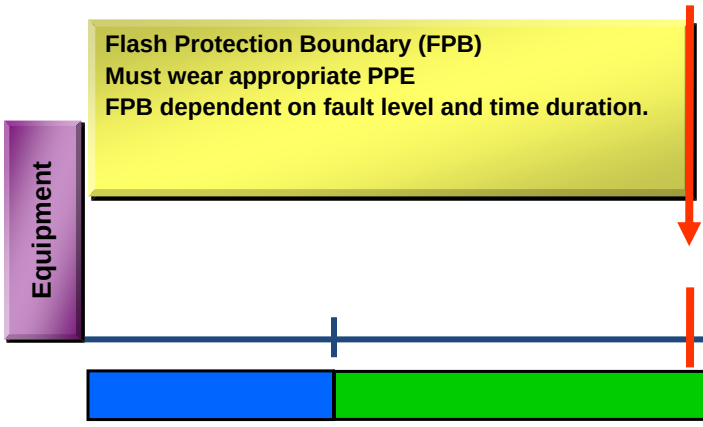
- New task based table (AC&DC) determines when arc flash PPE is required. 130.7(C)(15)(A)(a)
- New equipment based table to determine PPE category.(130.7(C)(15)(a)(b);130.7(C)(15)(B)
- HRC 0 removed. Table changed to PPE.
- Changed insulated tools or handling equipment from limited to restricted boundary

NFPA 70E-2015

- Barriers cannot be placed closer that the limited approach or arc flash boundary (whichever is closer)
- New section added requiring the employer to perform a risk assessment before cutting or drilling into equipment, floors, walls or structural elements where there is likelihood of contact

NFPA 70E-2015

- The equipment owner or their representative is responsible for maintenance of electrical equipment & documentation
- New maintenance requirements for test equipment. Must include functional verification 110.4(A)(5);250.4
- New section 320.3(A)(1) requires risk assessment on battery systems



Restricted Shock Boundary: Qualified Persons Only PPE as directed

Limited Shock Boundary: Qualified or Unqualified Persons*
* Only if accompanied by Qualified Person

Note: shock boundaries dependent on system voltage level

WARNING LABEL

Table 130.4(D)(a) Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Shock Protection for Alternating-Current Systems (All dimensions are distance fro menergized electrical conductor or circuit part to employee.

Nominal System Voltage Range Phase to Phase[a]	Exposed Movable Conductor[a]	Exposed Fixed Circuit Part	Restricted Approach Boundary[b]; Includes Inadvertent Movement Adder
<50 V	Not specified	Not specified	Not specified
50 V-150 V[d]	10'	3'6"	Avoid contact
151 V-750 V	10'	3'6"	1'
751 V- 15kV	10'	5'	2'2"
15.1 kV-36kV	10'	6'	2'7"
36.1kV-46kV	10'	8'	2'9"
46.1kV-72.5kV	10'	8'	3'3"
72.6kV-121kV	10'8"	8'	3'4"
138kV-145kV	11'	10'	3'10"
161kV-169kV	11'8"	10'	4'3"
230kV-242kV	13'	13'	5'8"
345kV-362kV	15'4"	15'4"	9'2"
500kV-550kV	19'	19'	11'10"
765kV-800kV	23'9"	23'9"	15'11"

Note1: For arc flash boundary, see 130.5(A)

Note2: All dimensions are distance from exposed energized electrical conductors or circuit part to employee.

Table 130.7 C(15)(A)(a) Arc Flash Hazard Identification for Alternation Current (AC) and Direct Current (DC) Systems

Task	Equipment Condition*	Arc Flash PPE Required
Reading a panel meter while operating a meter switch	Any	No
Normal operation of a circuit breaker (CB), switch, contactor, or starter	*All the following:*	
	The equipment is properly installed	No
	The equipment is properly maintained	No
	All equipment doors are closed and secure	No
	There is no evidence of impending failure	No
	One or more of the following:	
	The equipment is not properly installed	Yes
	The equipment is not properly maintained	Yes
	Equipment doors are open or not secure	Yes
	Equipment covers are off or not secure	Yes
	There is evidence of impending failure	Yes
For AC systems: Work on energized electrical conductors and circuit parts, including voltage	Any	Yes

Table 130.7(c)(15)(A)(b) Arc-Flash Hazard PPE Categories for Alternating Current (AC) Systems

Equipment	Arc-Flash PPE Category	Arc-Flash Boundary
Panelboards or other equipment rated 240 V and below	1	19"
Parameters: Maximum of 25kA short-circuit current available; maximum of 0.03 sec (2 cycles) fault clearing time; working distance 18"		
Panelboards or other equipment rated >240 V and up to 600 V	2	3'
Parameters: Maximum of 25kA short-circuit current available; maximum of 0.03 sec (2 cycles) fault clearing time; working distance 18"		
600 V class motor control centers (MCCs)	2	5'
Parameters: Maximum of 65kA short-circuit current available; maximum of 0.03 sec (2 cycles) fault clearing time; working distance 18"		
600 V class motor control centers (MCCs)	4	14'
Parameters: Maximum of 42kA short-circuit current available maximum of 0.33 sec (20 cycles) fault clearing time; working distance 18"		
600 V class switchgear (with power circuit breakers or fused switches) and 600 V class switchboards	4	20'
Parameters: Maximum of 35kA short-circuit current available; maximum of 0.5 sec (30 cycles) fault clearing time; working distance 18"		
Other 600 V class (277 V through 600 V, nominal) equipment	2	5'
Parameters: Maximum of 65kA short-circuit current available;		

Table 130.7(C)(16) Personal Protective Equipment (PPE)

PPE Category	PPE
1	**Arc-Rated Clothing, Minimum Arc Rating of 4 Cal/cm²** (see note 1)
	Arc-rated long-sleeve shirt and pants or arc-rated coverall
	Arc-rated face shield (see note 2) or arc-rated flash suit hood
	Arc-rated jacket, parka, rainwear, or hard hat liner (AN)
	Protective equipment
	Hard hat
	Safety glasses or safety goggles (SR)
	Hearing protection (ear canal inserts)
	Heavy duty leather gloves (Note 3)
	Leather footwear (AN)
2	**Arc-Rated Clothing, Minimum Arc Rating of 8cal/cm²** (see note 1)
	Arc-rated long-sleeve shirt and pants or arc-rated coverall
	Arc-rated flash suit hood or arc-rated face shield and arc-rated balaclava (see note 2)
	Arc-rated jacket, parka, rainwear, or hard hat liner (AN)
	Protective equipment
	Hard hat
	Safety glasses or safety goggles (SR)
	Hearing protection (ear canal inserts)
	Heavy duty leather gloves (Note 3)
	Leather footwear
3	**Arc-Rated Clothing Selected so that the System Arc rating meets the required Minimum Arc Rating of 25cal/cm²** (see note 1)
	Arc -rated long-sleeve shirt (AR)
	Arc-rated long pants(AR)
	Arc-rated coverall (AR)
	Arc-rated arc flash suit jacket (AR)
	Arc-rated arc flash suit pants (AR)
	Arc-rated arc flash suit hood
	Arc-rated gloves (see note 1)
	Arc-rated jacket, parka, rainwear, or hard hat liner (AN)
	Protective equipment
	Hard hat
	Safety glasses or safety goggles (SR)