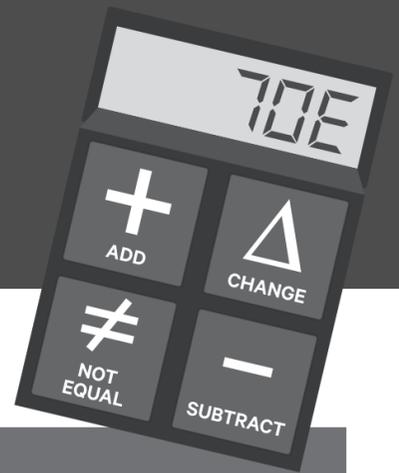


THE MATH OF NFPA 70E: Standard for Electrical Safety in the Workplace®



Every three years, the National Fire Protection Association (NFPA) updates its 70E standard to help facilities avoid the effects of electrocution and arc flash incidents. The 2015 additions, subtractions, and other changes build on the safety, training and maintenance requirements of the 2012 standard to facilitate even greater mitigation of electrical hazards.



2012

2015

TERMINOLOGY

“Hazard” and “risk” used without definition clarity



Hazard: Potential for harm from exposed energized electrical conductors and/or the condition of equipment
Risk: Chance or probability that the hazard could result in physical harm

Uses the terms “arc flash hazard analysis,” “shock hazard analysis,” and “electrical hazard analysis”



Uses “arc flash risk assessment,” “shock risk assessment,” and “electrical risk assessment”

References hazard risk categories (HRC)



References arc flash personal protective equipment (PPE) categories

Mentions limited, restricted and prohibited approach boundaries



Prohibited approach boundary

QUALIFICATION

A qualified person shall be trained and **knowledgeable** in the construction and operation of equipment or specific work methods



Such a person shall demonstrate skills related to the construction and operation of the electrical equipment and have additional training in minimum approach distance to exposed parts

WORK PRACTICES

Limits the use of tables when determining arc flash boundaries



Additional limitations regarding the “table method” to encourage use of engineering analyses

LABELING

Must include nominal system voltage, arc flash boundary and one of the following: minimum arc rating of clothing; required level of PPE or highest HRC



Option of including available incident energy and the corresponding working distance as one of the additional pieces of information

Arc flash labels should be applied to AC and DC equipment



Label requirements for switchboards, switchgear, panel boards, industrial control panels, meter socket enclosures, and motor control panels

Should be updated periodically and when any major modification or renovation takes place, not to exceed 5 years



The stipulation to update labels when the hazard risk assessment shows the labels are inaccurate

RISK ASSESSMENT & WORK PERMITS

Required when work is planned within the limited approach boundary of exposed energized conductors or circuit parts; and when an increased risk exists



The need for a permit plan for tasks that are routine in nature and performed by a qualified person such as testing, troubleshooting, visually inspecting, etc.

Table 130.7 (C)(15)(b) shows HRC values for DC locations although calculating the HRC values is a preferable approach



Required risk assessment prior to work on a battery system based on use of newly revised DC task-based tables

GENERAL MAINTENANCE

Electrical equipment, including overcurrent protective devices, must be maintained in accordance with manufacturers’ instructions or industry consensus standards



The stipulation that the equipment owner is responsible for the maintenance and its documentation

UNDERSTANDING THE MATH OF NFPA 70E CAN BE A CHALLENGE, BUT VERTIV™ CAN BE YOUR TUTOR!
For help protecting your critical assets and achieving regulatory compliance, call a local sales representative today at 1-800-LIEBERT.