

## 5 REASONS TO CHOOSE AN ENGINEERED ANALYSIS OVER THE CATEGORIES METHOD TO PERFORM YOUR ARC FLASH ASSESSMENT



### METHOD OVERVIEW

#### IEEE (Engineered)

#### NFPA (Category / Table)

IEEE Standard 1584 “Guide for Performing Arc-Flash Hazard Calculations” is a commonly used engineering approach for conducting an arc flash risk assessment and for selection of personal protective equipment (PPE). It provides details on the theory and calculations used to determine the danger a worker could be exposed to.

This method categorizes tasks and indicates if PPE is required. If required, the PPE category (1 through 4) is then determined based on equipment type, voltage, short-circuit current, and fault clearing time.

The **IEEE** method establishes the calculated short-circuit current at each piece of equipment, which results in a specific incident energy level.

The **NFPA** category method is often applied without knowing the short-circuit current. By assuming that the short-circuit current is within the limits set by the NFPA tables, workers may be over or under protected.

The **IEEE** method takes into account the specific overcurrent protective device characteristics and arc duration, which allows for a calculation of incident energy and resulting PPE.

The **NFPA** category method assumes fault clearing times which may leave workers over or under protected.

Due to the detailed information gathered as required for an incident energy analysis, the **IEEE** method allows for an overcurrent protective device coordination study to be conducted. Improper coordination can lead to higher than necessary arc flash energy, or nuisance tripping.

The **NFPA** category method does not take overcurrent protective device settings into consideration.

By first calculating the available short-circuit current, the **IEEE** method can identify equipment that has insufficient withstand ratings, and by calculating the specific incident energy, it allows for arc flash risk level reduction strategies.

The **NFPA** Method does not calculate short-circuit current.

The **IEEE** method requires complete electrical system data collection and the creation of a complete electrical system single line diagram. This data will give a facility an overall “map” of the electrical system.

The **NFPA** category method looks at pieces of equipment individually.