

## SALISBURY ASSESSMENT SOLUTIONS AVAILABLE OFFERINGS

- Arc Flash Risk Assessments
- Electrical Hazard Risk Assessments
- Electrical Engineering
- Written Electrical Safety Program Assistance & Support
- Thermography
- Assistance with Personal Protective Equipment Selection
- NFPA 70E Compliance Support

## ARC FLASH RISK ASSESSMENT

An arc flash is an explosion of electrical energy that can cause substantial damage, injury and death. Analyzing the arc flash hazards is critical to the worker and workplace safety. NFPA 70E calls for an arc flash hazard analysis and risk assessment procedure to maintain a safe workplace.

An arc flash risk assessment, per NFPA 70E, is a study investigating a worker's potential exposure to arc flash energy. This is conducted for the purpose of injury prevention as well the confirmation of safe work practices. The determination of the arc flash boundaries and the appropriate levels of personal protective equipment (PPE) needed are critical deliverables of an arc flash risk assessment.

There are three steps to completing an arc flash hazard analysis as outlined by NFPA 70E Article 130.5 (2015 Edition):

- 1. Arc Flash Boundary** - When an arc flash hazard exists, distance a person can receive a 2nd degree burn from an arc flash source is the arc flash boundary. This is noted with an arc flash label placed on the electrical equipment. Incident energy and arc flash boundary calculation methods are provided in Annex D.
- 2. PPE for Application** - Within an arc flash boundary, the amount of personal protective equipment (PPE) is based on either an incident energy analysis or Hazard/Risk Categories. Table H.3(b) in Annex H of the NFPA 70E offers information on selection of arc-rated clothing and other PPE.

**When it comes to selecting Arc Flash PPE, only 1** of the following methods shall be used for the selection of PPE. *(The results of an incident energy analysis to specify an arc flash PPE Category in Table 130.7(C)(16) shall not be permitted.)*

- (1) Incident Energy Analysis Method.** The incident energy exposure level shall be based on the working distance of the employee's face and chest areas from a prospective arc source for the specific task to be performed. Arc-rated clothing and other PPE shall be used by the employee based on the incident energy exposure associated with the specific task. Recognizing that incident energy increases as the distance from the arc flash decreases, additional PPE shall be used for any parts of the body that are closer than the distance at which the incident energy was determined.

**Informational Note:** For information on estimating the incident energy, see Informative Annex D. For information on selection of arc-rated clothing and other PPE, see Table H.3(b) in Informative Annex H.

- (2) Arc Flash PPE Categories Method.** The requirements of 130.7(C)(15) and 130.7(C)(16) shall apply when the arc flash PPE category method is used for the selection of arc flash PPE.

**3. Equipment Labeling** - Electrical equipment that is likely to require examination, adjustment, servicing or maintenance shall be field marked with a label containing the following:

- (1) Nominal system voltage
- (2) Arc flash boundary
- (3) At least one of the following:
  - a. Available incident energy and the corresponding working distance, or the arc flash PPE category in Table 130.7(C)(15)(A)(b) or Table 130.7(C)(15)(B) for the equipment, but not both
  - b. Minimum arc rating of clothing
  - c. Site-specific level of PPE

The process of data collection, calculation, analysis, PPE selection and labeling are critical and complex tasks. The best way to avoid compliance and regulation issues and protect your workers is to allow an experienced, qualified electrical engineering team complete the analysis and work with you on creating and maintaining an electrical safety program.

**SAS has a highly trained team of experts that will work with you every step of the way toward an electrically safe workplace. SAS offers services that ensure your workplace is compliant and that your workers are protected.**

