

Arc Flash Hazard Analysis


PS&S provides electrical power system studies including Arc Flash Hazard Analysis for Commercial, Industrial, and Institutional organizations throughout New York, New Jersey, and Connecticut. Arc Flash is the violent release of superheated gases caused by an electric arc. Workers can be killed or seriously injured by arcing faults even without direct contact. Electric arcs produce up to or beyond 35,000 degrees Fahrenheit.


Let us help you provide a safe working area for your employees relative to electrical hazards.



Why Arc Flash Hazard Analysis is Required

- 1 OSHA Standard 29 CFR 1910 requires employers to ensure the safety of all workers in work place including conducting an assessment for each employee who performs work on or near exposed, energized parts of electric circuits, providing adequate personal protective equipment, and training.
- 2 NFPA 70 National Electrical Code (NEC) Article 110.16 requires equipment owners to clearly mark electrical equipment about Arc Flash Hazard for examination, adjustment, servicing, or maintenance of the equipment. Electrical equipment including switchgear, switchboard, motor control center, panelboard, and industrial control panel. NEC Article 240.87 requires arc flash energy reduction for overcurrent device installed in a 1200A or higher circuit breaker.
- 3 NFPA 70E Standard for Electrical Safety in The Workplace Article 130.5 indicates that an arc flash risk assessment shall be performed to determine if an arc flash hazard exists, appropriate safety-related work practices, arc flash boundary, and PPE to be use within the arc flash boundary. The arc flash risk assessment shall be updated when a major modification or renovation takes place and shall be reviewed at intervals not to exceed 5 years.

|  WARNING | | |
|---|---|---|
| Arc Flash and Shock Hazard Appropriate PPE Required | | |
| Hazard Level 2 Arc Flash Protection 39 in Flash Hazard Boundary 4.2 cal/cm ² Incident Energy at 18 in 4.0 - 8.0 cal/cm ² Flash Hazard Range | Shock Protection 240 VAC Shock Hazard 42 in Limited Approach Boundary Avoid Contact Restricted Approach Boundary Prohibited Approach Boundary | PPE Required Cotton Underwear + FR Shirt & Pants Hardhat + Polycarbonate Face Shield + Safety Glasses + Ear Canal Inserts Voltage Rated Electrical Gloves Rubber Soled Leather Boots |
| Equipment Name: PANEL-1 Date: 09/02/16 47 Warning: Changes in equipment or system configuration will invalidate the calculation values and PPE requirements. | | |

|  DANGER | | |
|--|--|---|
| Arc Flash and Shock Hazard Appropriate PPE Required | | |
| Hazard Dangerous! Arc Flash Protection 444 in Flash Hazard Boundary 230 cal/cm ² Incident Energy at 18 in 40.0 - 999.0 cal/cm ² Flash Hazard Range | Shock Protection 480 VAC Shock Hazard 42 in Limited Approach Boundary 12 in Restricted Approach Boundary Prohibited Approach Boundary | PPE Required No FR Category Found Do not work on live! Do not work on live! Do not work on live! |
| Equipment Name: SWGR-1 Date: 09/02/16 24 Warning: Changes in equipment or system configuration will invalidate the calculation values and PPE requirements. | | |



For more information on Arc Flash Hazard Analysis and PS&S, please contact
Walter Fedick, PE at 732.584.0339 or wfedick@psands.com.

Let us help you provide a safe working area

PS&S can provide Arc Energy Reduction Methods Recommendations in compliance with NEC and meet owner's budget schedule:

1. Zone-selective interlocking
2. Differential Relaying
3. Energy-reducing maintenance switching with local status indicator
4. Energy-reducing active arc flash mitigation System
5. Protective Device Settings evaluation

Arc Flash Hazard Warning Labels show information including:

1. Personal protective equipment (PPE) Category Level and Requirements
2. Arc Flash Hazard Boundary
3. Arc Flash Incident Energy
4. Working Distance

More to Offer

- Short Circuit Study
- Load Flow Study
- Arc Flash Hazard Study
- Recommendations to Reduce Arc Flash Hazard Level
- Arc Flash Hazard Warning Labels
- Installation Arc Flash Hazard Warning Labels on Electrical Equipment
- Arc Flash Hazard Training

More to Offer

Design of Arc Flash Reduction methods and contacting manufacturers. Provide cost estimate for arc flash reducing methods under owner's budget. Provide construction service including construction shop drawing review.

Electrical Equipment Evaluation Study determines if the electrical equipment is capable of providing adequate service and protections of electrical cables, motors, generators, and transformers.

Protective Device Coordination Study determines the electrical power system selectivity by isolating electrical fault currents to the appropriate protective devices and reducing nuisance tripping, which is critical for the safe operation of the electrical power distribution system.



For more information on Arc Flash Hazard Analysis and PS&S, please contact
Walter Fedick, PE at 732.584.0339 or wfedick@psands.com.