ARC FLASH TALKING POINTS FOR PROJECT MANAGERS AND ESTIMATORS

- **Do you see Arc Flash Labels on the Customer's Panels, Switchgear, MCC's as shown on the back of this document?**
  - ⇒ *Do they exist? Are they **Generic** (Not Acceptable, non compliant) or **Detailed** with AF Boundary, Hazard Risk Category (HRC) or Amount of Incident Energy in Cals/cm^2?*
- **Ask Customer if they know that OSHA & CAL-OSHA are enforcing NFPA 70E (Electrical Safety in the Workplace)?**
- **NFPA 70E is a consensus standard established by OSHA dealing with workplace electrical safety.**
  - ⇒ *All work must also comply with the OSHA standards 1910.132(d0, 1910.303(g) (2), 1910.331-1910.335 as well as the General Duty Clause*
  - ⇒ *OSHA 1910.269 (l)(6)(iii) The employer shall ensure that each employee who is exposed to the hazards of flames or electric arcs does not wear clothing that, when exposed to flames or electric arcs, could increase the extent of injury that would be sustained by the employee.*
  - ⇒ *OSHA has stated that employers must provide workers with appropriate PPE as per the OSHA 29 1910.132 (h)(1)*
  - ⇒ *CAL OSHA follows what Federal OSHA recommends and is enforcing NFPA 70E.*
- **NFPA 70E Requires Employer or Owner to:**
  - ⇒ *Identify all electrical hazards above 50V which include:*
    - *Shock and Electrocution*
    - *Arc-Flash and Arc-Blast*
    - *Toxic Gases, Sound and Light*
    - *Fire and Explosion*
    - *Improperly Protected Equipment*
    - *Improperly Maintained Equipment*
    - *Equipment Deficiencies*
    - *Equipment with Improper Short Circuit Current Rating (SCCR)*
    - *The owner is responsible for documentation, and installation, and maintenance of the Arc Flash per NFPA 70E - 130.5(D)*
  - ⇒ *Put safeguards in place for hazards above 50V*
  - ⇒ *Train employees on safe work practices.*
- **Arc Flash**
  - ⇒ *Violent eruption of energy from an electrical source.*
  - ⇒ *Arc temperature can reach 35,000 °F.*
  - ⇒ *Fatal burns can occur at distances over 10 feet.*
  - ⇒ *Over 2000 people are admitted into burn centers each year with severe electrical burns.*
  - ⇒ *Up to 80% of all electrical injuries are burns resulting from an arc flash and ignition of flammable clothing.*
- **Flash Hazard Analysis**
  - ⇒ *Flash hazard analysis must be performed to determine AF protection boundary and required PPE.*
  - ⇒ *Must be reviewed a minimum of every five years.*
  - ⇒ *Updates required if major modifications or renovations.*

- **How is an AF Hazard Analysis Performed:**
  - ⇒ **UTILIZE A QUALIFIED AND EXPERIENCED TEAM TO SAFELY AND ACCURATELY COLLECT FIELD DATA AND MODEL THE CUSTOMERS ELECTRICAL DISTRIBUTION SYSTEM**
  - ⇒ *Model the distribution system*
  - ⇒ *Calculate the short circuit current*
  - ⇒ *Determine the protective device operating times (Protective Device Coordination Study)*
  - ⇒ *Calculate the AF Energy level, AF Boundary, and Hazard Risk Category*
  - ⇒ *Print custom AF Labels with the details per NFPA 70 130.5 (D).*
  - ⇒ **FIELD CHECK AND ACCURATELY INSTALL ARC FLASH LABELS ON CUSTOMERS EQUIPMENT**
- **Benefits of Performing an Short Circuit, Protective Device, and AF Study:**
  - ⇒ *Increases Personnel Safety*
  - ⇒ *Reduces Accident Liability Exposure*
  - ⇒ *Increases Power System Reliability*
  - ⇒ *Increases Power System Efficiency*
  - ⇒ *Reduces Operating Costs*
  - ⇒ *Increases Equipment Protection*
  - ⇒ *Reduces Future Engineering Design Costs*
- **PowerStudies, Inc. can provide**
  - ⇒ *Arc Flash Hazard Analysis*
  - ⇒ *Electrical Safety Training for Qualified and Non-Qualified Persons*
  - ⇒ *If Customer is interested, get their contact info and forward to Delinah Martinez (ph. 253-656-5339) & Bob Fuhr (ph. 253-639-8535) at PowerStudies, Inc.*

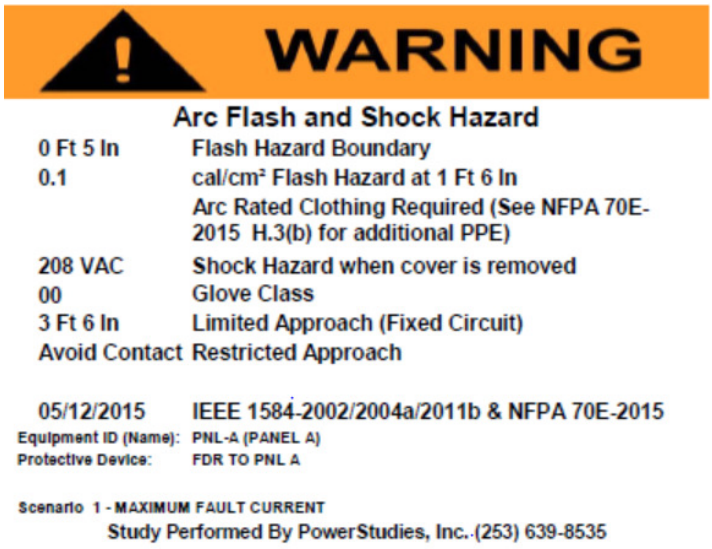

Figure 1 – Acceptable AF Label Listing Details

Figure 2 – Generic (Unacceptable) AF Label Listing Details