

16011 SHORT CIRCUIT AND PROTECTIVE DEVICE COORDINATION STUDY AND ARC FLASH ANALYSIS

1. SHORT CIRCUIT AND PROTECTIVE DEVICE COORDINATION STUDY

- a. Complete a Short Circuit and Protective Device Coordination Study to meet the requirements of NFPA 70.
- b. The study shall be performed with the aid of a computer software program. Obtain actual settings for packaged chiller and motor characteristics for equipment incorporated into the work.
- c. Calculate short circuit interrupting and, when applicable, momentary duties for assumed 3-phase bolted fault short circuit current and phase to ground fault short circuit current significant equipment throughout the system such as:
 - i. Medium voltage air interrupter switchgear
 - ii. Secondary unit substations
 - iii. Automatic transfer switches
 - iv. Engine generators
 - v. Switchboards
 - vi. Motor control centers
 - vii. Distribution panelboards
 - viii. Branch circuit panelboards

2. ARC FLASH ANALYSIS

- a. Complete Arc Flash Hazard Analysis calculations to meet requirements of NFPA 70E and IEEE 1584.
- b. Analysis Preparation:
 - i. Prepare analysis prior to ordering distribution equipment to verify arc flash hazard and proper labeling.
 - ii. Perform the analysis with the aid of computer software.
 - iii. Obtain actual sizes and lengths of conductors and fault current of system for incorporation into the analysis.
 - iv. Utilize circuit breaker actual trip settings and trip curves.
 - v. Calculate arc flash potential and provide code compliant labels for the entire electrical distribution system down to the 120/208 volt branch circuit panelboard level. This includes switchboards, motor control centers, distribution panelboards, branch circuit panelboards, safety switches, automatic transfer switches, enclosed circuit breakers, etc.