Power Studies and Arc Flash Risk Assessment

In today's manufacturing environment, knowing your facilities Arc Flash risk and properly labeling your electrical equipment is a necessity. Arc Flash can result in devastating consequences beyond equipment damage, including permanent injury and death. Coalmont offers the technical knowledge and skills to provide you with everything you need to meet Arc Flash prevention requirements for OSHA compliance. Coalmont uses the NFPA 70E protocol and specialized software to perform Arc Flash Studies. NFPA 70E is the industry gold standard for electrical safety.

What Is Arc Flash?

An Arc Flash is an explosive release of energy caused by an electrical arc due to either a phase to ground or phase to phase fault. These faults can be caused by many factors, including accidental contact with electrical systems, buildup of conductive dust, corrosion, rodents, dropped tools, worn out equipment, and improper work procedures. An arc flash can produce extreme temperatures up to 35,000 degrees Fahrenheit. On some case such as large 480 systems, the flash can be 20,000 degrees up to 20 inches away.

The Coalmont Approach to Arc Flash Studies

Data Collection

Coalmont engineers will visit your facility to collect the electrical data needed to perform an Arc Flash Hazard Analysis. Information gathering and the systems analysis begins at your incoming power point and continues to individual electrical systems inside your plant. Enclosures that present potential exposures to an Arc Flash will be identified. Our data gathering includes wire size, wire length, transformer data, and circuit over-current protection information, and other information specific to your electrical system as required by IEEE 1584.

Single-Line Modeling

Data collected by Coalmont Engineers will be entered into a complex power study software to build a custom model of your plant electrical distribution system. This model will be used to perform multiple analysis including:

- Short Circuit Analysis
- Protective Device Coordination Analysis,
- Protective Device Interrupt Rating Analysis
- Incident Energy Analysis

Engineering Report

Coalmont will use the modeling data analysis to create an engineering report containing data, analysis, and other information about your electrical system. Coalmont will present two hard copies of the report in three ring binders, and an electronic version on a USB storage device to your designated representative. Coalmont will archive all of your data for future analysis and updates.

Mitigation Recommendations

Coalmont will provide findings describing dangerous or disruptive conditions within your plant. Arc flash hazards will be calculated and compared to NFPA Standard 70E. Hazards requiring personal protection equipment (PPE) will be included in the report. Coalmont will make recommendations for mitigating all hazards of 4 calories/cm² and above.

Equipment Labeling

A Coalmont technician will install durable labels on equipment based on the data calculated. The labels will indicate:

- Equipment Name
- Arc Flash Boundary
- Incident Energy
- Flash Hazard Category
- Voltage
- Limited Approach Distance
- Restricted Approach Distance
- Prohibited Approach
- Over Current Protection Device that clears the arcing fault current

Complete Electrical Drawing Revisions

In addition to our standard Arc Flash Study and Assessment, Coalmont can update your existing electrical drawings to show as found and as corrected information. Updated drawings will save your facility time, money, and reduce lost production time. Your custom ACAD electrical drawings will be provided in printed and electronic versions.

To learn more about Coalmont Arc Flash Studies and Assessments, contact your Coalmont representative at (205) 477-4611.