

# Arc Flash Analysis



*Electrical safety in the workplace is vital to all employees as well as employers. Preparation of an arc flash hazard analysis on energized equipment can help reduce injuries to personnel during an arc flash event.*

## Overview

- Pump Stations – potable water, recycled water, and sewage
- Oil Fields and Facilities
- Treatment Plants – water and wastewater
- Industrial Facilities and Plants
- Commercial Buildings
- Medical Buildings and Centers
- Data Centers
- Residential High Rises

# Arc Flash

An arc flash is a dangerous event associated with the release of energy caused by an electric arc between energized electrical conductors or circuit parts, risking lives and equipment. It is difficult to know the arc flash hazard risk inherent in your power system without assessment by knowledgeable technical resources.

Cannon's electrical engineers provide comprehensive arc flash studies using power system software. From initial field investigation to generating and applying arc flash labels to the equipment, our electrical engineers provide you with the information necessary to establish a safe work environment. Our licensed electrical engineers follow NFPA and OSHA standards and are members of IEEE, which is the organization that develops the standard for arc flash analysis.

## Projects



### Wastewater Facility Arc Flash Analysis

*Benicia, California*

The City of Benicia has a large wastewater treatment plant and several sewage lift stations that could require operators to work on energized electrical equipment. In an effort to reduce risk to personnel, Cannon was selected to perform an arc flash analysis.

Cannon's scope included researching existing data and documentation, gathering field data, creating electrical models of the sites in power systems software (SKM Power Tools), and analyzing the results. As well, the City wanted to mitigate the incident energies to levels where the City personnel would not have to wear personal protective equipment (PPE) suits, but wear minimal PPE instead. Cannon modeled different scenarios for the City and provided recommendations on equipment to install to reduce the incident energy levels. The results of the analyses of all the sites were presented in a report, and Cannon prepared and installed arc flash hazard labels on the electrical equipment.



### Pactiv Arc Flash Analysis

*Bakersfield, California*

Cannon was selected to provide an arc flash analysis to determine if the potential for a hazardous arc flash existed; identify opportunities to reduce hazardous risks; and determine the minimum safe working distance (arc flash boundary) from the equipment where an arc flash hazard exists. In addition, Pactiv wished to determine appropriate PPE (Personal Protection Equipment) required to avoid a permanent injury from an arc flash event, and to implement arc flash and electrical shock warning labels on energized equipment.



### Oil Field Arc Flash Protection

*Santa Maria, California*

Santa Maria Energy required a consultant to perform an arc flash analysis for the equipment in their oil production facilities at their Careaga Oil Lease. The facilities in the study included all of the electrical equipment in their Oil Plant, Gas Compressor Plant, and Steam Generator Plant. Cannon was selected to perform the arc flash study, which included site visits to gather pertinent data; using SKM Power Tools to prepare the arc flash study; preparation of a report; and printing arc flash labels. Cannon performed the arc flash study to include "worst case" scenarios based on the utility's different fault duties, and a diesel generator that provides power in emergency situations when utility power fails. Based on the results of the study, Cannon prepared arc flash labels to affix to the electrical equipment.