

Arc Flash Study & Analysis

Protect Your Workforce with an Arc Flash Study

Ensure Safety...

Enhance Compliance....

Reduce Risks....!

Introduction to Arc Flash

- **Definition of Arc Flash** – An arc flash is the energy release that occurs during an electrical fault when current flows through the air between two live conductors or to the ground causing a short circuit. This phenomenon can result in extremely high temperatures, intense light, pressure waves.
- **Causes of Arc Flash** – Equipment failure, Improper maintenance, Human error, Equipment malfunction, Environmental factors such as dust, moisture, Arcing faults, Design flaws, Improper work practice etc.
- **Objective of Arc Flash Study** - The main objective is to enhance workplace safety, ensure regulatory compliance with standards like OSHA, NFPA 70E, and IEEE 1584, and minimize equipment damage and downtime. The study helps establish safe working distances, recommend appropriate personal protective equipment (PPE), and implement risk mitigation strategies such as engineering and administrative controls.

Regulatory Standards and Guidelines

- OSHA (Occupational Safety and Health Administration)
- NFPA 70E (Standard for electrical safety in the workplace)
- IEEE 1584 :2018 (IEEE Guide for performing Arc flash hazard calculation)
- CEA guidelines on Handling of electric supply lines and apparatus

Steps to Conduct an Arc Flash Study

Data Collection:

- Electrical System Data (Single Line Diagram, Switch Gear Ratings)
- Historical Data (Maintenance Records, Incident History)

System Modelling and Analysis:

- Software Tools
- Electrical Network Modelling
- Short Circuit Analysis
- Relay / Protective Device Coordination

Incident Energy Calculations:

- Determining potential energy levels.
- Establishing safe working distances and arc flash boundaries.

Risk Mitigation:

- Engineering and administrative controls.
- Recommendations for personal protective equipment (PPE).

Labeling and Documentation:

- Custom arc flash labels for your equipment.
- Detailed reports and maintenance of records.

Training and Awareness:

- Safety training programs for your team.
- Emergency response procedures and best practices.

Why Q Sine?

- **Expertise:**
Our team of certified professionals has extensive experience in electrical safety of more than 3 decades.
- **Compliance:**
We ensure your facility meets OSHA, NFPA 70E, IEEE 1584 standards and CEA guidelines.
- **Customized Solutions:**
We provide inputs to fix the unique needs of your facility.

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OUR PRODUCTS

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OUR SERVICES

- PQA Audit
- Energy Audit
- Arc Flash Study
- Short Circuit Analysis
- Load Flow Analysis
- Rental Services