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Arc Flash Analysis/Study

View Course Details

COURSE DATES AND TIMES

April 23-24 , 2026

10:00 am - 4:30 pm ET

Why Arc Flash Analysis Training Matters

Arc flash hazards cannot be managed using rules of thumb or generic PPE categories. Arc Flash Analysis training matters because it teaches how real electrical system conditions translate into measurable injury risk. By understanding incident energy calculations, equipment labeling, and boundary determination, organizations can make defensible safety decisions, reduce severe burn risk, and meet regulatory expectations while supporting safer energized work practices.

This course should be taken with our **Power System Fundamentals** Course - April 10, 2026

This course is also a companion to our **Short Circuit Analysis/Study And Protective Device Coordination** Course - April 16-17, 2026

Arc Flash Analysis Training Overview

Arc Flash Analysis Training equips electrical professionals with the knowledge and skills to conduct comprehensive arc-flash hazard analyses, calculate incident energy levels, and apply NFPA 70E, CSA Z462, and IEEE 1584-2018 standards to real-world systems. Participants will learn to evaluate fault current, determine arc flash boundaries, and create compliant arc flash labels that accurately define risk and PPE requirements for energized work. This two-day, instructor-led course combines theory, calculation practice, and live software demonstrations to help professionals perform and interpret full arc flash studies with confidence.

This course emphasizes the direct link between arc flash studies, short-circuit analysis, and protective device coordination, ensuring that equipment ratings, relay settings, and system protection schemes are optimized for both safety and reliability. Participants gain practical insight into system modelling, arcing fault scenarios, and coordination analysis using professional engineering software tools. The course also includes updates from IEEE 1584-2018, highlighting the latest methodologies for incident energy and arcing current calculations.

Beyond calculations, this training teaches participants how to implement and maintain a compliant electrical safety program that integrates labelling, documentation, and worker protection policies. It addresses updating arc flash studies when system changes occur, reviewing results during safety audits, and ensuring continuous compliance with OSHA, NFPA 70E, and CSA Z462 requirements. Participants will also learn how to develop corporate-level strategies for program maintenance and ongoing worker training.

This Arc Flash Analysis Training course is ideal for electrical engineers, maintenance supervisors, safety coordinators, and facility managers responsible for industrial, commercial, and institutional power distribution systems. It also benefits consultants, utilities, and engineering firms that design, analyze, or maintain electrical infrastructure that requires arc flash studies and documentation.

Learning Outcomes

Upon completing this course, participants will be able to:

- Perform comprehensive arc flash, short-circuit, and coordination studies for industrial and commercial systems.
- Calculate incident energy, arcing current, and arc flash boundaries in compliance with NFPA 70E, CSA Z462, and IEEE 1584-2018.
- Create and maintain compliant arc flash labels and PPE selection programs.
- Integrate study results into an ongoing electrical safety program aligned with OSHA and insurance standards.
- Understand and apply the fundamentals of short-circuit studies to improve system reliability.
- Identify and mitigate high-risk electrical equipment through accurate modelling and coordination analysis.
- Interpret study results to propose cost-effective engineering solutions that reduce hazards.

- Maintain documentation, labelling, and periodic updates required for safety audits and insurance compliance.
- Save time and reduce errors using proven software tools and data collection methods.

Related Courses

- Electrical Safety Training Courses
- Arc Flash Training - CSA Z462
- Electrical Safety For EHS Managers
- Electrical Safety Program Development
- OSHA Lockout Tagout (LOTO)
- Electrical Safety For Non-Electrical Workers
- Arc Flash Channel

WHO SHOULD ATTEND

This Arc Flash Analysis Training course is designed for professionals managing electrical safety and compliance in industrial, commercial, and institutional facilities. Ideal participants include:

- **Electrical engineers** performing arc flash studies and ensuring NFPA 70E / CSA Z462 compliance.
- **Plant and facility engineers** are responsible for power distribution system reliability.
- **Utility and consulting engineers** conducting short-circuit and coordination studies.

- **Maintenance supervisors** oversee electrical safety programs and ensure compliance with labelling requirements.

- **Electricians and contractors** are working on energized equipment and implementing safe work practices.

- **Architect-engineers** involved in system design or protection coordination projects.

This training benefits anyone overseeing arc flash hazard analysis, PPE selection, or electrical safety program development in accordance with NFPA 70E, CSA Z462, and IEEE 1584 standards.

STUDENTS RECEIVE

- Arc Flash Analysis/Study Training Certificate

- 1.2 Continuing Education Unit (CEU) Credits (12 Professional Development Hours)

- FREE 100-Page Digital Electrical Safety Handbook (Value $20)

- $100 Coupon Toward Any Future Electricity Forum Event (Restrictions Apply)

- FREE Magazine Subscription (Value $25.00)

- Course Materials In PDF Format

COURSE OUTLINE

Arc Flash Analysis Training Course Outline

DAY ONE

1. **An Overview of Fault Current Analysis**

   - Fault Current Sources
   - Short Circuit Current Parameters

- Actual Fault Types
- Balanced Fault Analysis
- Impedance Diagrams
- Fault Current Calculations

2. **Overcurrent Coordination Fundamentals:**

- Overcurrent protection general consideration
- Protection guidelines
- TCC Plots
- CTIs

3. **Fuse Characteristics:**

- Low Voltage Fuses
- Power Fuses
- TCC Curves
- Fuse Coordination Criteria

4. **LV Circuit Breaker Characteristics:**

- Molded Case Circuit Breakers (MCCBs)
- Low Voltage Power Circuit Breakers
- TCC Curves
- Coordination Criteria

5. **An Introduction to Arc Flash Calculations**

- Arc Flash Analysis
- Causes Of Electrical Flash Events
- Why Perform Arc Flash Studies? Who Should Perform Them?
- CSA Z462/NFPA 70ENF
- IEEE Standard 1584
- Fault Magnitudes
- Overcurrent device responses

6. **Major Changes to IEEE 1584.**

- Electrode configurations
- Typical working distance
- Classes of equipment and typical gap
- Transformer exception at 240V

DAY TWO

7. Calculation Methodology

- Overview Of Protective Device Coordination
- Understanding Time-Current Curves
- Fault Current Vs. Energy Released
- Calculating With Uncertainty
- Protective Device Trip Time

8. Data Collection Process

- How To Improve Outcomes
- Data Collection Activities & Skill Sets
- Obstacles In Data Collection
- Required Equipment/Device Information
- Understanding Short-Circuit Ratings

9. Arc Flash Calculations Continued

- Accumulated Energy
- Minimum and Maximum Faults
- Use Of Tolerances
- Current-Limited Devices
- System Modes of Operation
- Calculating arcing current
- Determination of arc duration
- Calculate the incident energy
- Arc-flash boundary calculations

10. Mitigating Risk of Arc Flash Hazards

- Clearly Understanding Risk Vs Hazard
- Overview Of Electrical Equipment
- How To Reduce Arc Flash Levels
- Fuse-Protected Vs. Non-Fuse-Protected Circuit Breakers
- Arc-Resistant Switchgear
- Arc Flash Label Issues
- Safety: The Overriding Concern

Exercise: Arc Flash Analysis/Study using Popular Software

COURSE SCHEDULE:

Start: 10 a.m. Eastern Time
Finish: 4:30 p.m. Eastern Time

Contact us Today for a FREE quotation to deliver this course at your company’s location.

Request Quote