EUCI
COURSE

FUNDAMENTALS OF ARC FLASH SAFETY, CALCULATIONS, AND REGULATIONS FOR UTILITIES

December 4, 2018
Hyatt Place Denver Tech Center
Denver, CO

> ***"EUCI's Arc Flash Fundamentals course was excellent. Very direct and introductive to arc flash and electric shock hazards. Mike Bahr is a great instructor. He is passionate and engaging."***
>
> Section Manager, Fleet Maintenance Services, Bruce Power

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AUTHORIZED IACET PROVIDER

EUCI is authorized by IACET to offer 0.8 CEUs for the course

OVERVIEW

Arc flashes release energy hotter than the surface of the sun, spray molten metal and create sound blasts as loud as a gun. Each year, thousands of arc flash incidents occur, resulting in burn injuries, hospitalizations, and fatalities. Arc flashes occur when a flashover of electric current leaves its intended path and travels through the air from one conductor to another or to ground, according to the Occupational Safety and Health Administration (OSHA). This course will provide attendees with the experience, tools and education that will help them to conduct the arc flash assessments that electric utilities are required to perform in order to protect their field workforce from the dangers of arc flash. This course will help participants to understand the current rules and regulations that require the employer to assess the workplace to determine which employees are exposed to hazards from flames or from electric arcs. This course will help the participants choose a method of calculating incident heat energy that reasonably predicts the incident energy to which the employee would be exposed.

By drawing from personal experience, the instructor will answer important questions regarding arc flash hazard assessment, including, but not limited to:

- What regulations require arc flash assessment?
- What methods are available to perform arc flash hazard analysis?
- Single phase or three phase?
- Are all my employees exposed?
- What type of work exposes an employee to a reasonable likelihood that an arc flash could occur?
- Should I use the table method or calculation method?
- After the assessment, what clothing is required?
- What information am I required to give my contractors?

The intent is that participants will be able to apply the information learned the first day they return to their jobs. Hands-on activities will be included throughout the day.

LEARNING OUTCOMES

- Explain the arc flash hazard potential
- Explain the regulatory requirements
- Define which regulation applies to your company
- Define arc flash assessment methods
- Discuss how to make estimates over multiple system areas
- Explain how to choose between the table method and the calculation method of arc flash hazards assessment
- Explain how to identify those employees who may as a result of the work they perform be exposed and how to determine the probability that an arc will occur
- Discuss how to select a reasonable distance from the arc to the employee
- Discuss how to select a reasonable arc gap
- Identify when to use single phase vs three phase calculations
- Discuss how to reduce arc flash clothing costs
- Explain arc flash clothing layering

WHO SHOULD ATTEND

- Plant, facility, and electrical engineers
- Consulting, utility and industrial engineers responsible for arc hazard analysis in the selection of protective equipment and clothing
- Utility engineers with responsibilities for NESC compliance
- Safety officers and program managers
- Utility Engineers needing in-depth understanding of arc hazard assessment and analysis

INSTRUCTOR

Mike Bahr

Transmission Safety Coordinator, Tri-State G&T
Owner, Castle Rock Safety Consultants

Mike Bahr is employed by Tri-Sate G&T as Transmission Safety Coordinator and has been a safety professional in the electrical industry for over 30 years. After being injured in an electrical accident in 1985, Mike has dedicated his career to the safety profession and has specialized in the area of Arc Flash Safety. Mike has developed and presented arc flash training worldwide and is a former principal member of the NFPA 70E committee (Electrical Safety Related Work Practices). Mike also served as the principal investigator for the development of the Department of Energy (DOE) Electrical Safety Program.

AGENDA

TUESDAY, DECEMBER 4, 2018

8:00 – 8:30 am **Registration & Continental Breakfast**

8:30 – 5:00 pm **Course Timing**

12:00 – 1:00 pm **Group Luncheon**

- Arc Hazard Defined
  - Terms
  - Utility work accident history
  - Typical arc flash exposures in the workplace
- Regulations/Standards
  - OSHA
  - NFPA
  - NESC
  - IEEE
- Arc Flash Assessment Methods
  - Table (NESC)
  - Lee-Theoretical, Empirical
  - ArcProTM
  - Data gathering
    - Distribution
    - Transmission
    - Station
    - Generation
- Single Phase/Three Phase
  - LV-generation/control
  - MV-HV
- Case Study – Examples
  - IEEE 1584
  - ArcPro
- Arc Flash Clothing/PPE
  - Layering
  - FR vs AR
  - Faceshields
- OSHA Required Information Transfer (Contractors)

REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

INSTRUCTIONAL METHODS

Case studies, PowerPoint presentations and group discussion will be used in this event.

IACET CREDITS

EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

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EVENT LOCATION

A room block has been reserved at the Hyatt Place Denver Tech Center, 8300 E Crescent Pkwy, Greenwood Village, CO 80111, for the nights of December 2-4, 2018. Room rates are $159 plus applicable tax. Call **1-303-804-0700** for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is November 2, 2018 but as there are a limited number of rooms available at this rate, the room block may close sooner. ***Please make your reservations early.***

Please make checks payable to "PMA"

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PLEASE REGISTER

○ **BOTH FUNDAMENTALS OF ARC FLASH SAFETY, CALCULATIONS, AND REGULATIONS FOR UTILITIES AND PERSONAL PROTECTIVE GROUNDING COURSES:**
December 4-5, 2018 | Denver, CO: US $1895
Early bird on or before November 16, 2018: US $1695

○ **FUNDAMENTALS OF ARC FLASH SAFETY, CALCULATIONS, AND REGULATIONS FOR UTILITIES COURSE ONLY:**
December 4, 2018 | Denver, CO: US $995
Early bird on or before November 16, 2018: US $895

How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

Print Name | Job Title

Company

What name do you prefer on your name badge?

Address

City | State/Province | Zip/Postal Code | Country

Phone | Email

List any dietary or accessibility needs here

CREDIT CARD INFORMATION

Name on Card | Billing Address

Account Number | Billing City | Billing State

Exp. Date | Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx) | Billing Zip Code/Postal Code

OR Enclosed is a check for $ _____ to cover _____ registrations.

Substitutions & Cancellations
Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before November 2, 2018 in order to be refunded and will be subject to a US $195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI's liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at (201) 871-0474.