

PERSONAL PROTECTIVE GROUNDING: *Think Electrically, Not Mechanically*

December 5, 2018
Hyatt Place Denver Tech Center
Denver, CO



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course

OVERVIEW

Since 1994, OSHA has required grounding practices that will protect employees in the event that the line or equipment on which they are working becomes re-energized. The equipotential zone, or EPZ, is made to do just that.

OSHA requires the employer to install temporary grounds and bonds at the worksite in such a manner that keeps the worksite at the same potential and prevents harm to workers even if the line is accidentally re-energized or exposed to induced voltages.

This course will help participants to understand the current rules and regulations that require the employer to assess the workplace and develop grounding practices that will protect personnel working on or near deenergized lines and equipment.

This course will follow a review of several serious accidents involving improper grounding practices. The course will cover methods to manage electrical hazards effectively when dealing with deenergized electrical circuits. The course will cover the difference between grounding and bonding and help attendees to think electrically, not mechanically when installing personal protective grounds.

By drawing from personal experience, the instructor will answer important questions regarding Personal Protective Grounding, including, but not limited to:

- What regulations require personal protective grounding?
- What methods are available to perform equipotential grounding?
- Single phase or three phase?
- Bracket or single point grounding?
- What type of work exposes an employee to a reasonable likelihood that an electrical exposure could occur?
- What are the hazards with working in series or parallel with the grounding system?
- What are the electrical sources that may endanger the worker?
- What is the equipotential zone of protection?
- What is the proper method for installing and removing grounds?

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

- Discuss developing a safe work plan
- Discuss ASTM F855
- Identify Potential Hazards
- Establish the Work Practices / Barriers for the Job to Manage the Hazards
- Define Background and Definitions
- What is the Difference between Grounding and Bonding?
- Steps for Applying Grounding
- Steps for Applying Bonding
- Discuss Power System Source
- Discuss How deenergized lines can become unsafe
- Discuss Procedures and Guidelines

AGENDA

WEDNESDAY, DECEMBER 5, 2018

8:00 – 8:30 am

Registration & Continental Breakfast

8:30 – 5:00 pm

Course Timing

12:00 – 1:00 pm

Group Luncheon

- Introduction; Safety Analysis; Purpose of Temporary Grounding
 - o Introduction
 - o Electrical Safety Analyses
 - o Purpose of Temporary Grounding
 - o Review Recent Fatal Grounding Incidents

- Temporary Grounding Terms; Sources of Hazardous Energy
 - o Terms
 - o Sources of Hazardous Energy
 - o Stored Energy
 - o Static Buildup
 - o Backfeeding
 - o Induced-Voltage Areas
 - o Grounding and Bonding

- Temporary Grounding Preparations; Requirements for Temporary Grounding Devices
 - o Temporary Grounding Preparation
 - o Requirements for Temporary Grounding Devices
 - o General Requirements
 - o Specific Requirements
 - o Installation Requirements

- Selection and Evaluation of Temporary Grounding Devices; Installation and Removal of Temporary Grounding Devices
 - o Ground Cable Assemblies
 - o Insulation Devices
 - o Specialized Grounding and Testing Devices
 - o Evaluating Ground Cable Assemblies
 - o Cables
 - o Ferrules and Clamps
 - o Evaluating Hot Sticks and Attachments
 - o Testing Equipment
 - o Installation of Temporary Grounding Devices
 - o Removing PPGs

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.

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

PERSONAL PROTECTIVE GROUNDING COURSE ONLY:

December 5, 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.