

Personal Protective Grounding: Think Electrically, Not Mechanically

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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 equi-potential 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

Learning Outcomes

Discuss developing a safe work plan

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?

Applying Grounding

Applying Bonding

Power System Source

Job Site and Work Area

Downlead (Pole Ground)

Induction

Discus Procedures and Guidelines

Things to Watch For

Working from the Structure

Working on the Ground

Splicing Conductor

Equipment / Material Entering or Leaving the Equipotential Zone

Working from a Bucket

Single Phase Line with System Neutral

Working Procedures for Bonded Sections of Two or Three Phase Lines

"Butt Down" / Tie-Down Locations

Wood Poles with Downleads

Steel Towers / Steel Poles / Concrete Poles

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Cutting Open Wire or Jumpers

Guyed Structures

Grounding inside a Substation

Underground Distribution

Inspection and Maintenance

Grounding Equipment and Vehicles

Grounding Non-insulated vs insulated Aerial Devices

About Mike Bahr

Mike Bahr has been a safety professional in the electrical utility/construction 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 electrical safety. Mike has developed and presented an extensive body of work 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.

Mike has developed a reputation for being one of the best trainers in the electric power industry

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