



## In House Programs

# T<sub>2</sub>G

## TECHNICAL TRAINING GROUP

## Grounding and Power Quality

Power Quality is a broad term used to describe the health of a power system's voltage and current. Spikes, sags, surges, noise and other events can disrupt the operation of critical systems. Many power quality problems can be attributed to improper or incorrect grounding. In this 1 Day class, Jim shows you the correct grounding and bonding requirements to minimize or reduce power quality problems as well as how to identify and solve common power quality problems. The class is based on his years of experience in conducting numerous power quality studies.

Course Credit: 1 Day - 0.8 CEUs or 8 PDHs



### Course Agenda

#### INTRODUCTION

Codes and Standards

#### TYPES OF SYSTEM GROUNDING

Solid and High Impedance Grounding  
Grounded B Phase, Ground Detection

#### GROUNDING ELECTRODE SYSTEM

Ground Rod, Metal Water Pipe, Building Steel  
Concrete Encased Electrode, Ground Ring  
Electrolytic Ground, Conductor Selection,  
Bonding Jumper

#### EQUIPMENT GROUNDING AND BONDING

Conductor Selection, Raceways, Conductors in Boxes

#### SEPARATELY DERIVED SYSTEMS

Service Entrance, Transformers, UPS, Generators and  
4 pole transfer switches,  
Serving Two Buildings from One Source

#### GROUNDING TO EARTH

Ground Resistance, Soil Resistivity, Ground  
Resistance Measurements, Grounding and Corrosion

#### OUTDOOR SUBSTATIONS

Ground Grids, Touch and Step Potential

#### SENSITIVE ELECTRONIC EQUIPMENT GROUNDING

Signal Reference Subsystem, Separation of Loads  
Isolated Ground Design, Shielded Transformers

#### TELECOMMUNICATION GROUNDING AND BONDING

Telecom Main Grounding Bus bar (TMGB)  
Telecom Bonding Backbone (TBB)  
Telecom Bus Bar (TGB)  
Telecom Closet and Equipment Room

#### POWER QUALITY ANALYSIS

Definitions, Wave Characteristics  
Sags/Swells, Grounding and Objectionable Current  
Noise, EMI, Ground Loops

#### POWER QUALITY SITE SURVEY

Survey Objectives, Measurements, Inspection, Test  
Equipment, Analysis

#### POWER QUALITY CASE PROBLEMS AND SOLUTIONS

Internal vs. External Events, Circuit Switching, Ground  
Potential Difference, EMI, Isolated Ground Problem

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For more information contact:

T<sub>2</sub>G Technical Training Group® at 800-874-8883.

See sample videos of Jim's teaching style at:

[www.brainfiller.com](http://www.brainfiller.com)