



In House Programs

T2G

TECHNICAL TRAINING GROUP

Design of Electric Power Systems

When it comes to designing an electric power system, the NEC® is just the minimum. See how to design using the NEC but also how to go beyond the code. When and why do you need to oversize neutrals? How do you perform lighting calculations? Learn some of the “tricks of the trade” when it comes to electrical design.

Course Credit: 2 Days - 1.6 CEUs or 16 PDHs



Course Agenda

DAY ONE

INTRODUCTION

Safety, Codes and Standards, Economics

TYPES OF SYSTEMS

Radial, Network, Double Ended

VOLTAGE SELECTION

120/240V, 208Y/120V, 480Y/277V
Delta vs. Wye, Voltage Drop Issues

LOAD CALCULATIONS

Lighting and Appliance Loads, Receptacles,
VA per Square ft., Continuous vs. Non-Continuous

CONDUCTORS

Conductor and Conduit Sizing, Insulation Type,
Correction Factors, Neutral and Ground Conductors

OVERCURRENT PROTECTION

Fuses, Circuit Breakers, Ground Fault Protection, Time
Current Curves, Operation and Settings of Devices

PANELBOARDS

Branch and Main Circuit Breakers, Lighting and Appliance

SWITCHBOARDS

Bus Ratings, Breakers, Bus Bracing, AIC, Layout, Series
Ratings, Bus Structure

LIGHTING DESIGN

Zonal Cavity Lighting Calculations, Lighting Layout

DAY TWO

TRANSFORMERS

Types of Transformers, Characteristics and Specifications
K Factor, Protection Based on NEC® 450, Inrush Current

MOTOR CIRCUITS

Locked Rotor and Overload Protection, Insulation Class /
Service Factor, Motor Tables, Sizing of Feeders, Protection

GROUNDING

Grounding Electrode System, Equipment Ground, Conductor
Selection, Separately Derived Systems, High Resistance,
Ground, Ground Loops and Power Quality

HAZARDOUS LOCATIONS

Class I, II, and III, Divisions and Groups, Explosion Proof

LIGHTNING PROTECTION

Air Terminals, Conductors, NFPA 780

GENERATORS

Emergency Vs. Standby, Selection of Unit, Gasoline, Gas
(LP/Natural), Diesel Driven, Design Factors

AUTOMATIC TRANSFER SWITCHES

Size and Ratings, 3 Pole vs. 4 Pole

UNINTERRUPTIBLE POWER SUPPLIES

Sizing, Heat Loss, Compatibility with Generators

CASE PROBLEM

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For more information contact:
T2G Technical Training Group® at 800-874-8883.

See sample videos of Jim's teaching style at:
www.brainfiller.com