Course Description and Features

This course focuses on the ***application considerations*** of the apparatus found in the typical industrial electrical power system. It is important that all of the components of the system be applied properly to ensure the optimum operation, reliability and safety of the system from the programmable controller to the largest power transformer. The participants will ***work on example problems*** based on the concepts discussed in the workshop, with special emphasis on **practical system considerations.** There will be homework assigned each day. (This course is equivalent to 30 PDH.)

Who Should Attend

Anyone who has ***engineering responsibilities*** for designing, operating and maintaining an industrial power distribution system will benefit from this workshop. The course covers a wide range of subjects, and it will provide valuable information to such people as plant and corporate engineers, utility service representatives, design engineers, and operating and maintenance personnel. A minimum of ***three years engineering experience*** is recommended.

Primary Course Instructor

W. Edward Reid, PE, Principal Engineer at Qual-Tech Engineers, has over 30 years of experience in the analysis of industrial and utility electrical power systems. His experience has contained a special emphasis on problem-solving including, shunt and series capacitor applications, filter design from low voltage industrial to HVDC applications, harmonic analysis, equipment insulation failures, power outage and disturbance problems, equipment applications considerations, and arc flash analysis. He has been active in numerous industry IEEE committees, including the Capacitor Subcommittee, Harmonics Working Group, Pulp & Paper committee, and the T&D Committee.

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Lawrence, PA 15055

724-873-9275
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QUAL-TECH ENGINEERS
A DIVISION OF ECI

INDUSTRIAL POWER SYSTEMS WORKSHOP

October 10-13, 2023

Pittsburgh, PA

The Electrical Power Engineers Since 1983

Industrial Power Systems Workshop

October 10-13, 2023 — Pittsburgh, PA
2 Park Drive
Lawrence, PA 15055

⇒ Accommodations

The Hilton Garden Inn– Southpointe/Pittsburgh is 8 minutes from the workshop site.

⇒ Registration

Register by September 15, 2023

- Online at www.qualtecheng.com. Credit card payments only accepted with online registration.
- Or, mail registration form to:
  Equipment & Controls, Inc.
  2 Park Dr., PO Box 614
  Lawrence, PA 15055

⇒ Course Fee

$2400

Includes program materials, break refreshments and lunch. Advance registration is required. If you cannot attend, please notify us by October 1 for a full refund. Cancellations received after that time are subject to a $50 late charge. A substitute may be registered at any time prior to the start of the course.

For additional information, please call Donna Franco at 724-820-2043 or email donna@qualtecheng.com.

Qual-Tech Services

⇒ Power Factor & Harmonic Analysis
⇒ Turnkey Filter Solutions
⇒ Short Circuit & Coordination Evaluation
⇒ Arc Flash Analysis & PPE Labeling
⇒ Problem Solving of Power System Issues
⇒ Power System Audits
⇒ Power System Workshops
… And More!

Course Schedule

(Professional Development Hours = 30)

Part 1 - Overcurrent Protection

- **Fundamentals**
  - ⇒ Basics
  - ⇒ Per Unit System
  - ⇒ Symmetrical Components
- **Short Circuit Calculations**
  - ⇒ Basic Calculations
  - ⇒ Equipment Standards & Ratings
  - ⇒ Estimating Methods for Typical Systems
- **Overcurrent Coordination**
  - ⇒ Basic Concepts
  - ⇒ Low & Medium Voltage Applications
  - ⇒ General Guidelines
- **Arc Flash Analysis**
  - ⇒ Analysis
  - ⇒ Application Guidelines

Part 2 - System Voltage Control & Protection

- **Fundamentals**
- **Voltage & Var Control**
  - ⇒ Load Power Factor Characteristics
  - ⇒ Voltage and Var Flow
  - ⇒ Motor Starting and Flicker
- **System Disturbances**
  - ⇒ Disturbance Characteristics
  - ⇒ Sensitivity of Equipment
  - ⇒ Equipment Standards
  - ⇒ Solutions
- **Overvoltage Protection**
  - ⇒ Equipment Withstand Characteristics
  - ⇒ Sources of Overvoltage
  - ⇒ Overvoltage Protection Methods
- **Harmonics**
  - ⇒ Sources of Harmonics
  - ⇒ Application of Capacitors
  - ⇒ Effects of Harmonics
  - ⇒ Harmonic Standards
  - ⇒ Methods of Controlling Harmonics

Registration Form
Industrial Power Systems Workshop
October 10-13, 2023

Name_____

Position_____

Company_____

Address _____

City_____

State_____Zip Code_____

Phone_____

Email_____

_____Enclosed is a check for $2400.00
(Payable to Equipment & Controls, Inc.)

_____Bill my company to the attention of:

_____

_____Enclosed is Purchase Order Number:

_____

Mail to:
ECI
2 Park Dr., PO Box 614
Lawrence, PA 15055

Or...

Register online at www.qualtecheng.com. Credit card payments accepted with online registration only.