DISCOUNT PROGRAM PRICING
Details Page 4

Arc Flash/Short Circuit Study Engineering Course

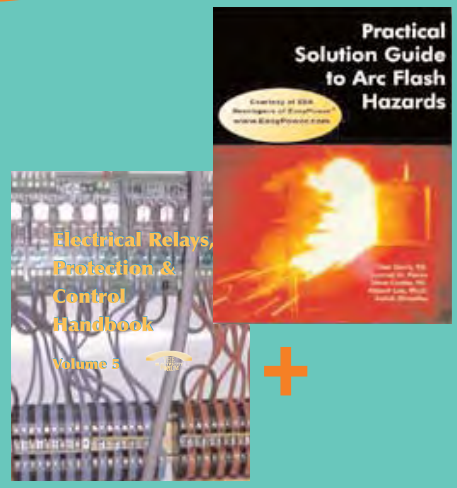
Protect Yourself and Your Workers

Complete Program Details www.electricityforum.com/forums/arc-flash-study.html

TORONTO, ON - November 16-17, 2009

OTTAWA, ON - November 18-19, 2009

$699



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Arc flash/short circuit study training is essential for understanding your equipment and how to mitigate any potential arc flash hazard problems.

THIS COURSE WILL TEACH YOU HOW TO:

- Develop a realistic risk assessment, ensuring proper personnel safety and increased compliance by workers
- Eliminate hours of engineering time and prevent costly mistakes
- Assure electrical system reliability
- Provide documentation and labeling for your Arc Flash Hazard Safety Program
- Avoid unnecessary costs from over specification of gear, providing higher potential worker productivity - saving thousands of dollars on an annual basis!
- Understand short circuit study fundamentals
- Understand arc flash study fundamentals
- Comply with standards for limits of approach
- Produce arc flash labeling
- Perform arc flash approach boundary calculations and more!

DELEGATES RECEIVE:

- FREE EasyPower "Practical Solution Guide to Arc Flash Hazards" (Value $70.00)
- FREE Electrical Relays, Protection & Control Handbook Volume 5 (Value $35.00)
- $100 Coupon Toward any Future 2009/2010 Electricity Forum Event (Restrictions Apply)
- 1.4 Continuing Education Unit (CEU) Credits
- FREE Magazine Subscription (Value $50.00)
- Forum Presentations in Paper Format
- Register Three, Get One FREE (Details Page 4)

CORPORATE SPONSORS

WESCO DISTRIBUTION

EasyPower

AGO INDUSTRIES INC.

Earn Continuing Education Units (CEUs)

THE ELECTRICITY FORUM
Since 1986

More than 25,000 Satisfied Students

Far too often, plant electrical systems go through changes without serious attention paid to short circuit levels and equipment ratings. Even new buildings and installations are not immune to short circuit problems. The results can be expensive at best, disastrous at worst! Understanding how to conduct a short circuit study can reduce the risk your company faces and help avoid catastrophic arc flash injury to workers and equipment. It's about safety & reliability.

Only after an arc flash hazard analysis has been completed through a proper arc flash study, can engineering revisions be made to your system to reduce the incident energy to manageable levels. But only a proper short circuit study and arc flash study can identify the buses with high incident energy levels and only an arc flash study can determine the rating of the personal protective equipment really needed at each location in a facility.

CONSIDERATIONS FOR DETERMINING IF YOU NEED AN ARC FLASH STUDY

- Arc flash study has not been performed in the past three years
- Short-circuit, protective coordination studies have not been performed in the past five years
- Changes have occurred to electrical distribution system or electric utility system
- Safety audit is being required
- Facility insurance policy is up for renewal
- Modifications or expansions of electrical distribution system are being considered

COURSE DESCRIPTION

Developing and implementing an ongoing arc flash hazard program which meets the new regulations noted in CSA Z462 or IEEE-1584 can be challenging. Rule of thumb methods could result in both unnecessary worker exposures to hazards from under protection and significant lost plant productivity due to overprotection. Performing an accurate arc flash/short circuit study and applying labels is only one aspect of a true arc flash hazard program. A comprehensive corporate electrical safety program also includes development and implementation of the proper processes, procedures, documentation, and training programs.

This Arc Flash/Short Circuit Study course is designed to provide a comprehensive and systematic understanding of arc flash hazards, prevention, electrical safety, calculation and analysis. It is also designed to provide the detailed steps required to perform an arc flash study. Participants will learn how to perform in-depth calculations of incident energy, arcing current and flash protection boundaries based on the various methods of CSA Z462 and IEEE 1584. There will also be a demonstration of how to perform an Arc flash/short circuit study using a commercially available computer program.

WHO SHOULD ATTEND

This Arc Flash/Short Circuit Study course is intended for electrical engineers, plant supervisors, electrical maintenance professionals and electricians who are involved with industrial, commercial and institutional electric power distribution systems: Plant, facility, and corporate electrical engineers dealing with one or more company distribution systems, and consulting and utility engineers dealing with clients' systems. Consultants, architect-engineers will also find this course very beneficial.

COURSE TIMETABLE FOR BOTH DAYS

Welcome and Opening Remarks: 8:00AM	Lunch: 12:00PM
Start: 8:05AM	Refreshment Break: 2:30PM
Coffee Break: 10:00AM	Finish: 4:00PM

THE ELECTRICITY FORUM

Since 1986

Arc Flash/Short Circuit Study Engineering 2-Day Course

To see the extended course outline please visit:**www.electricityforum.com/forums/arc-flash-study.html**

DAY 1

Dave Windley, *President, Wintek Engineering*

EasyPower® *Complimentary Continental Breakfast - Sponsored By ESA Inc.*

PERFORMING A DETAILED ARC FLASH STUDY

- Standards and Legal Requirements
- CSA Z462-08 - Workplace Electrical Safety
- IEEE 1584 - 02/04 – Guide for Arc Flash Analysis
- Occupational Health and Safety Acts
- Canadian and Provincial Electrical Codes
- Purpose of the Study
- Methodology and Steps to Completion
- Organization of the Study
- Challenges

CSA Z462-08 AND ELECTRICAL SAFETY PROGRAMS

- Safe Approach Distances
- Qualified vs. Unqualified Workers
- Work on or Near Energized Electrical Equipment
- Energized Electrical Work Permit
- Safe Work Practices and Procedures

ARC FLASH HAZARD APPROACH BOUNDARIES

- Limited Approach Boundary
- Restricted Approach Boundary
- Prohibited Approach Boundary
- Flash Protection Boundary

POWER SYSTEM FUNDAMENTALS

- Power System Configuration
- Modes of Operation
- System Grounding Fundamentals
- Typical System Examples

ELECTRICAL FAULTS

- Definitions and Terminology
- Arcing Faults vs. Bolted Faults
- Causes
- Effect of Current on Overcurrent Device Clearing Time
- Current Limitation
- Effects on Personnel and Equipment

SHORT CIRCUIT STUDIES

- Purpose
- Equipment Ratings
- Sources and Magnitudes of Fault Current
- Developing a System Model
- Necessary Information and Assumptions
- Per Unit Calculation
- Software Calculation

PROTECTIVE COORDINATION

- Typical Device Curves and Settings
- Transformer Protection
- Feeder Protection
- Motor/Generator Protection
- Type 2 Coordination
- Fault Let-Through
- Approved Series Combinations

DAY 2

AGO INDUSTRIES INC. *Complimentary Lunch - Sponsored By AGO Industries*

PERFORMING ARC FLASH CALCULATIONS

- Explanation of Concepts
- CSA Z462 Method
- IEEE 1584 Method
- Data Collection Strategies
- System Modeling
- Arc Flash Study Software Demonstration

DATA COLLECTION

- Transformer
- Conductor
- Motor
- Overcurrent Device
- Generator Data

IEEE 1584 - ARCING CURRENT CALCULATIONS

- Arcing Current Calculations - Significant Factors

TIME CURRENT CURVES

- Determining the arcing current clearing time
- Impact of Device Settings
- Effectiveness of various protective devices

IEEE 1584 - INCIDENT ENERGY CALCULATIONS

- Incident Energy Calculations - Significant Factors

IEEE 1584 - FLASH PROTECTION BOUNDARY CALCULATIONS

- Flash Protection Boundary Calculations
- 4 ft. rule vs Detailed IEEE Calculations

ARC FLASH LABELS

- Legal Requirements
- Optional information
- Effective Use
- Examples

DETERMINING PPE REQUIREMENTS

Bill Murphy, *AGO Industries*

- Hazard Risk Category
- Determination using Incident Energy Calculations
- Simplified CSA Z462 Chart Method
- Comparison of Methods
- PPE Matrix
- Selecting the Correct PPE
- Testing and Specification
- Establishing an FRC Program

REDUCING THE RISK – PRACTICAL SOLUTIONS

- Reducing Incident Energy Levels
- Retrofit and Equipment Modification
- New Installations and Equipment
- Engineering Solutions
- Risk Reduction Example

Act Now! Limited Seating! Register Today!

REGISTRATION FEES

The registration fee to attend the Arc Flash/Short Circuit Study Engineering course is $699.00 + $34.95 GST. The registration fee includes: course documentation, EasyPower "Practical Solution Guide to Arc Flash Hazards", Electrical Relays, Protection and Control Handbook Volume 5, magazine subscription, Electricity Forum $100 coupon towards any future 2009/2010 Electricity Forum event (Restrictions Apply), refreshments and complimentary lunch (GST #R105219976).

Discount Program Pricing

Save $50

Register and prepay with a credit card 14 days prior to course date and receive an early bird registration fee of $649 + $32.45 GST.

Register 3 Delegates At the Full $699 Price, THE 4TH REGISTRATION IS FREE

ON-SITE TRAINING AVAILABLE

Why not request a FREE Arc Flash/Short Circuit Study Training On-Site Training Course quotation directly for our company?? *http://www.electricityforum.com/on-site-training-feedback.htm* Our on-site training courses are tailored to meet your company's specific requirements and conducted on your own premises for your employees. Save the cost of travel and hotels and save on our regular public enrollment registration fees. Plus, our instructors can work with you in advance to determine the level of electrical training and experience of your employees and the specific applications that you would like covered. Electrical on-site training courses are best because they are delivered using the equipment your electrical technicians use every day. This maximizes the educational value of your electrical training investment. For more information, contact: Randy Hurst, President, The Electricity Forum *randy@electricityforum.com*

WHEN AND WHERE

(*Please indicate where you want to attend the course*)

Arc Flash/Short Circuit Study Engineering Course - 2 Day

Ways to register

PHONE : (905) 686-1040

FAX: (905) 686-1078

MAIL:
The Canadian Electricity Forum
Unit 215, 1885 Clements Rd.
Pickering, ON L1W 3V4

ON-LINE:
www.electricityforum.com/forums/arc-flash-study.html

☐ **Toronto, ON - November 16-17, 2009**
Quality Suites Toronto Airport Hotel, 262 Carlingview Drive,
Tel: 416-674-8442

☐ **Ottawa, ON - November 18-19, 2009**
Chimo Hotel, 1199 Joseph Cyr Street,
Tel: 613-744-1060

When redeeming a $100 coupon from a previous course, you must **RESGISTER AND PREPAY** prior to the course date.

ATTENDEE INFORMATION

Name_____

Title_____

Company_____

Address_____

City_____Province_____Postal Code_____

E-mail_____

Tel:( ) _____ Fax:( )_____

METHOD OF PAYMENT

☐ Cheque enclosed *
☐ Invoice me under PO#:_____
☐ Send invoice attention: _____
☐ Bill my credit card:
☐ AMEX ☐ VISA ☐ MasterCard
Card #_____
Exp. Date_____
Signature_____
Card Holder name _____
(if not registrant)

* Payable to the Canadian Electricity Forum

CANCELLATION AND REFUND POLICY: Registration fees are refundable only upon receipt of written notification 10 days prior to the conference date, less a 10 per cent service charge. Substitution of participants is permissible up to and including the day of the forum. The Canadian Electricity Forum reserves the right to cancel any conference it deems necessary and will, in such event, make a full refund of the registration fees.