REGIONAL POWER CLASS

» *EasyPower® Hands-On*
» *Protective Device Coordination*
» *Arc Flash Hazard Analysis*

EasyPower®
Power made easy

July 19 - 23, 2010
Portland, Oregon

Embassy Suites
Portland Airport

EasyPower, state-of-the-art Power System Analysis Software!

NFPA 70E & IEEE-1584

Arc Flash Hazard
» Analysis » Protection » Prevention

EasyPower Hands-On With Arc Flash and Protective Device Coordination

The EasyPower training course is tailored for engineers and designers who want to learn new skills or polish existing skills in the application of the EasyPower software suite for power system studies and design.

If you are just beginning with EasyPower, or if you want to hone your skills and learn new tricks and tips from the experts, this two-day course is for you. Using laptops you will build one-line models, develop an equipment database (including motor control centers and panel schedules), and perform system analysis using EasyPower ShortCircuit and PowerFlow views.

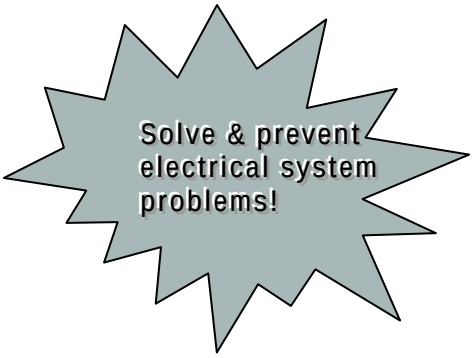
The training reference manual provided includes necessary theory and extensive notes. This training caters to both the novice and experienced power system engineer.

Days 1 & 2 – EasyPower Hands-On

Monday, July 19, 2010 | *7:30 a.m. to 4:30 p.m.*
Tuesday, July 20, 2010 | *8 a.m. to 4:30 p.m.*

Topics Include:

- EasyPower Overview
- EasyPower Functions and Features
- Hands-On Development of EasyPower One-Line and Database
- Motor Control Centers and Panel Schedules
- Application of EasyPower ShortCircuit
- Overview of EasyPower PowerFlow
- Sample Cases and Applications



Day 3 – Protective Device Coordination with EasyPower PowerProtector

Wednesday, July 21, 2010 l *8 a.m. to 4:30 p.m.*

Topics Include:

- Application of EasyPower PowerProtector for Protective Device Coordination Studies
- Proper System Coordination and Increased System Reliability
- Time Current Curves

ESA | PO Box 2110 | Clackamas, OR 97015 | Tel: 503-655-5059 | Fax: 503-655-5542 | Web: www.EasyPower.com

Arc Flash Hazard Analysis

Developing and implementing an ongoing arc flash hazard program which meets the new regulations noted in NFPA 70E, IEEE-1584, and the current OSHA Standard 29 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.

Industry is recognizing the benefits of obtaining accurate arc flash hazard data. Recently, the PCIC Safety Committee recommended that arc flash calculations be completed in conjunction with short circuit calculations and protective device coordination to help ensure the most accurate arc flash hazard results. ESA's own comparisons between EasyPower ArcFlash and the other methods indicate that the use of EasyPower ArcFlash could save companies thousands of dollars annually, per worker, in lost productivity.

Performing a 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. ESA can assist you in developing a complete safety program.

Days 4 & 5 – Arc Flash Hazard Analysis

Thursday, July 22, 2010 | *8 a.m. to 4:30 p.m.*
Friday, July 23, 2010 | *8 a.m. to 3:00 p.m.*

Earn 1.1 CEU Credits!

Topics Include:

- Arc flash causes and impacts
- Overview of NFPA 70E and IEEE-1584 standards and recommended practices
- Overview of Personal Protective Equipment
- Creating a System Model for an arc flash study
- Short Circuit Analysis for an arc flash study
- Protective Device Coordination for an arc flash study
- Application of EasyPower ArcFlash for arc flash hazard determination
- Hands-on application of EasyPower ArcFlash
- Arc flash hazard analysis with various system configurations including bus ties, generators, high impedance grounding, current limiting fuses and breakers, motor contribution, long feeders, etc.
- The course also includes a comprehensive manual

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Arc Flash Hazards & Why They Need to be Addressed

Arc flash hazards can result from many factors, including dropped tools, accidental contact with electrical systems, build up of conductive dust, corrosion and improper work procedures. An arc is produced by flow of electrical current through ionized air after an initial flashover or short circuit, resulting in a flash that can cause significant heating and burn injuries to occur. The electrical and safety industries are acknowledging that arcing faults can:

- Release dangerous levels of radiant heat energy capable of causing severe burns and ignition of clothing, which can result in treatment requiring years of skin grafting, rehabilitation, and even death
- Spray droplets of molten metal, with the explosion distributing the molten metal and shrapnel over a large area
- Produce blast pressure waves that have thrown workers across the room and knocked them off ladders
- Cause hearing loss from the sound blast related to the arcing fault

The Cost of treatment can exceed $1,000,000/case, along with potential litigation fees, fines, and escalation of insurance. Process losses can also be incurred.

Historically, the National Electrical Code (NEC) and other safety codes were primarily concerned with protection from fire, electrocution, and shock hazard – arc flash hazards were not addressed. This is changing – the 2002, 2005, and 2008 NEC contains requirements for warning labels and the National Fire Protection Association (NFPA) 70E – 2004, 2009 additions, along with the Institute of Electrical and Electronics Engineers (IEEE) 1584 – 2002, provide guidance on implementing appropriate safety procedures and calculating the potential hazards.

Although OSHA has not specifically addressed arc flash hazards, existing and new provisions impact how it is addressed:

- OSHA 1910.132(d), and 1926.28(a). The employer is responsible to assess the hazards in the work place, select, have, and use the correct Personal Protective Equipment (PPE) and document the assessment. OSHA considers NFPA 70E a consensus industry standard for assessing arc flash standards.
- OSHA considers Arc Flash assessments that follow NFPA 70E, in compliance with OSHA requirements and the accepted practice to protect workers from electrical safety hazards.

In 2002, a landmark agreement was forged between OSHA, IBEW, and NECA contractors to use NFPA 70E to protect electricians in Columbus, Ohio. That agreement set the trend for the NECA and the IBEW across the nation.

With EasyPower you will be prepared to take on the Challenge of Arc Flash Hazard Analysis.

With the new arc flash hazard study requirements from OSHA, the ability to quickly assess and determine arc flash hazards is critical to design and facilities engineers alike.

EasyPower with ArcFlash makes it easy to complete an arc flash hazard analysis!

With a mouse-click you can:

- Establish settings for all types of protective devices
- Verify protective device & arc hazard ratings
- Calculate momentary, interrupting and relay currents
- Coordinate your entire power distribution system to minimize downtime
- Compare for multiple arc flash calculation methods
- Print directly to selected label printers
- Provide the information you need to help ensure compliance with NFPA and OSHA requirements

EasyPower ShortCircuit, PowerProtector, and ArcFlash help you:

- 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 automated documentation and labeling for your Arc Flash Hazard Safety Program
- Avoid unnecessary costs from over specification of gear, providing higher potential worker productivity — savings thousands of dollars on an annual basis!

The Bottom Line:

EasyPower ShortCircuit, PowerProtector, ArcFlash, PowerFlow, Harmonics and Dynamic Stability modules work in concert to give you instant results on any system. You select the tools you need as you need them!

EasyPower's interface design thinks like you do, allowing you to easily design, analyze, troubleshoot, operate and control any power system.

Imagine… Completing your Arc Flash Study
in the time it takes others to get started!

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General Information

ESA conducts training at various locations throughout the United States. We schedule in multiple cities around the country to make it easy for you to attend at a manageable cost. Check our website for a complete list of 2010 training courses. **Please note:** No audio recording, video recording or photography is allowed during the training sessions.

Lodging & Transportation

Attendees are responsible for lodging and transportation to the seminar. For your convenience, ESA has reserved a block of rooms at the Embassy Suites Portland Airport, in Portland, Oregon. This block of rooms will be available for a room rate of $129.00 per night (plus applicable state and local taxes) for seminar attendees, through June 27, 2010. Contact the Embassy Suites Portland Airport for reservations and mention "ESA" to receive our discount, or you may register online at ESA's personalized group web page: http://embassysuites.hilton.com/en/es/groups/personalized/PDXESES-ESA-20100718/index.jhtml. The Embassy Suites Portland Airport offers complimentary airport shuttle. Parking at the hotel is also offered at no charge.

Embassy Suites Portland Airport
7900 NE 82nd Avenue | Portland, Oregon 97220
Phone: 503-460-3000 | Fax: 503-460-3030 | www.portlandairport.embassysuites.com

As you arrange for travel, please note that our seminar starts at 7:30 a.m. on Monday morning and ends at 3:00 p.m. on Friday. Classes begin at 8 a.m. and end at 4:30 p.m. on all other days.

Computer Requirements

This is a practical, hands-on seminar; plan to bring your own laptop as it will enhance your learning experience! ***You will be required to install EasyPower® training software on your laptop at the seminar; this will require admin rights are enabled on your laptop.*** We require that you use the training software so you will have access to all the features available within EasyPower.

If you are a current EasyPower user with your own license on your laptop, you may opt to uninstall your company's copy of EasyPower, or simply plan to reinstall upon completion of the seminar. The seminar copy of EasyPower will not override or affect any other types of software on the laptop; however, if you have a personal copy of EasyPower loaded, it may affect some of those files. If any device library changes have been made to your personal copy, you will need to archive your device library before installing the seminar copy of EasyPower. You will not need your hardware key for the training class.

Minimum system requirements necessary for installing EasyPower:

- >> EasyPower runs on 32-bit and 64-bit versions of Windows® XP, Server 2003, Server 2008, Vista (excluding Home Basic), and Windows 7
- >> Hard disk space requirement: 300 MB; 512 MB Memory (RAM) or higher
- >> Processor: Intel® based PC with Pentium® or higher processor (400MHz or faster)
- >> 1024 x 768 or higher resolution monitor and video adapter recommended
- >> CD-ROM drive
- >> Microsoft Mouse or other compatible pointing device. **A mouse is required to access all of the speed and efficiency features built into EasyPower.**

Refreshments

The Embassy Suites provides a complimentary cooked-to-order breakfast every morning for guests staying overnight. ESA will provide lunch and refreshments during designated breaks throughout the training.

ESA Training Contact Information

Contact our training department at 503-655-5059 ext 40 between 7a.m. and 4 p.m. PST with your training questions, or email Training@EasyPower.com.

COURSE REGISTRATION FORM

Course Dates and Location: July 19 – 23, 2010 in Portland, Oregon | **Registration will close July 5, 2010**

Two ways to register:

1) On the web at http://www.easypower.com/support_training.php or,
2) Fill out this form and fax it to 503-655-5542.

Name:		Phone:	
Company:		Email:	
Mailing Address:			

Course Description	***Dates***	***Price per Student***	
		With Current Maintenance Discount*	***Without Current Maintenance****
EasyPower Hands-On	July 19 – 20, 2010	$675.75	$795.00
Protective Device Coordination	July 21, 2010	$505.75	$595.00
Arc Flash Hazard Analysis	July 22 – 23, 2010	$760.75	$895.00
Package A: EasyPower Hands-On, Protective Device Coordination, and Arc Flash	July 19 – 23, 2010	$1,895.00	$2,195.00
Package B: Protective Device Coordination and Arc Flash	July 21 – 23, 2010	$1,195.00	$1,490.00
Package C: EasyPower Hands-On and Protective Device Coordination	July 19 - 21, 2010	$1,149.00	$1,390.00

Is your EasyPower Maintenance current*? (circle): Y | N

My company's EasyPower serial number is:

Payment Method (circle one): Visa, MasterCard, American Express, or Check (Purchase Orders are not accepted for training.)

Payment is due at the time of registration unless other arrangements have been approved by ESA.

We will contact you for your credit card information.

Total Investment for Course Selected	**$**

Transportation and hotel room reservations are the responsibility of the attendee. Please contact the hotel directly for room reservations. **Call or reserve online by June 27, 2010 to receive the ESA group discount.**

***EasyPower users with up-to-date maintenance will receive the discounted rate on seminar costs. You will also qualify for the maintenance discount if you purchase EasyPower within seven days of seminar. Discounts will be applied at time of purchase.

Substitutions are allowed at no additional charge if ESA is notified **prior to the registration closing date**. After that date, a $100 administrative fee will be charged to cover the costs of course material and certificate replacements. For any **cancellation** received after the registration closing date, the attendee may transfer the registration to a future seminar for a $100 administrative fee; however no refunds will be issued.

Please note: No audio recording, video recording or photography is allowed during the training sessions.

Interested in training at your facility? Contact us for a customized proposal for onsite training at your location!