Power System Engineering, Inc. (PSE) is offering a course on Distribution Line Design for utility staff responsible for designing and constructing distribution overhead line, underground line, and new services. The course has a mix of lectured material, group exercises, and participant discussion that revolves around real life design situations.

**Why Attend?**

- Acquaints new staff or changes in staff responsibilities with distribution line and new service design principles.
- Provides a refresher course for staff who are currently responsible for distribution line and new service design.
- Instructed by engineers and technicians who currently design distribution facilities and are up-to-date on design technologies and challenges that designers face.
- Comprehensive yet compact program gives participants enough information to immediately apply at their utility.

**Course Topics**

**Introduction**
- The power industry
- Generation, transmission, and distribution
- The roles of line designers and line stakers

**Power System Concepts**
- Voltage and current
- Single and three-phase power
- Demand and energy
- Power factor and load factor
- Coincident and diversity factor

**Electric Power Components**
- Overhead and underground systems
- Major equipment and functions

**Overhead Design**
- Conductor types and characteristics
- Conductor tension selection and sag tables
- Pole types, loading, selection, and setting depths
- Tangent structure configurations, components, loadings, and selection
- Angle structure configurations, components, loading, and selection
- Dead-end structure configurations, components, loading, and selection
- Guying and anchoring selection and configuration
- Equipment loading on structures
- NESC overview for overhead design

**Underground Design**
- Cable types and selection
- Elbows, terminators, splices, junction modules, etc. (200A & 600A)
- Junction modules, switchgear, fusing cabinets, fault interrupters, etc.
- Installation configurations (plow, trench, conduit, duct systems)
- Conduit sizing and pulling tensions
- NESC overview for underground design

**New Service Design**
- Customer service configurations
- Load estimating
- Transformer types, sizing, and configuration
- Secondary conductor sizing and selection

**Course Fees**

Register early to receive the discount!

Register on or before **November 30, 2012** to receive the discounted course fee: **$995.00**

Course fee after November 30: **$1,195.00**

— See next page for additional information —
Erik S. Sonju, P.E. is a registered professional engineer with 15 years of experience working as both a system engineer for a Midwest utility and an engineering consultant to electric utilities throughout the United States. He is the Vice President of Power Delivery Planning and Design for PSE located in Madison, WI. In addition to power delivery planning and analysis, Erik has actively designed or led the design of over 700 miles of transmission and distribution line for a variety of electric utilities. He has also instructed line design courses for electric cooperatives and investor owned utilities throughout the Midwest.

Mike Mezera is a degreed mechanical engineer and Line Design Engineer with PSE. His primary responsibility is transmission line design with projects ranging in voltage from 34.5kV to 115kV. He has also field engineered and staked cooperative distribution lines to RUS specifications. Mike’s engineering activities related to the design of electric transmission and distribution lines include: selection of land corridors, layout of structures within corridors, selection and loading analysis of structures, conductor sag and tension analysis, and review of NESC and local standards. Mike has developed and reviewed engineering calculations and design documentation for new and existing utility line projects.

Scott McLaughlin is a Utility Consultant with PSE located in Cedar Rapids, IA. He has been designing distribution and transmission lines for over five years for electric utilities throughout the Midwest. Scott has designed, staked, and overseen activities of over 500 miles of distribution line including underground distribution design utilizing up to 750 MCM URD cable. Scott attended power lineman school and has experience in distribution line construction. He has also instructed line design courses for electric cooperatives and investor owned utilities throughout the Midwest.

Douglas R. Joens, P.E. is President of PSE. Doug also provides guidance in the areas of system planning and line design for both transmission and distribution systems, including long range plans, construction work plans, system protection and sectionalizing studies in addition to work order inspection and electric utility operations. Doug’s experience also includes power supply analysis and large power contract drafting. Throughout the years, he has been involved in numerous training courses as an instructor. Examples of training courses include Line Design, Energy Loss Mitigation and Basic Electric Utility Training. Doug is a Registered Professional Engineer in multiple states.

Fee Includes
Morning and afternoon refreshments, course material, and course binder. The fee does not include hotel, travel, lunch, or other expenses.

Please Bring the Following
A calculator that has trigonometric functions which will be used during class for example problems and a copy of the most recent National Electrical Safety Code book.

Location
This course will be held at the Sheraton Madison located at 706 John Nolen Drive, Madison, WI 53713. A group rate of $95 plus tax is available for a standard king room including breakfast. To reserve a room, please call 866-716-8103 and ask for the Power System Engineering room block. Reservations must be made by Tuesday, January 1, 2013 in order to receive the group rate.

For questions or more information on this course, contact:
Heather Howard
608-268-3560
howardh@powersystem.org
Visit our website at www.powersystem.org to register online. At the top of the home page on our website, click on news & events then Calendar of Events. Locate Distribution Line Design Training on the calendar and follow the prompts to register online. Or if you prefer, you can complete the form below and mail it along with the course fee to the address listed below.

Register on or before November 30, 2012 to receive the discounted course fee: $995.00

Course fee after November 30: $1,195.00

Name ____________________________________________________________________________

Title ____________________________________________________________________________

Company _________________________________________________________________________

Business Address __________________________________________________________________

City ___________________________ State _____ Zip Code ______________

Phone ____________________________________________________________________________

Fax ______________________________________________________________________________

Email Address _____________________________________________________________________

Number of Attendees ____________ Amount Due $ ________________________________

Payment Method:

Complete this form, include a check made payable to Power System Engineering, Inc. and mail to:

Power System Engineering, Inc.
Attn: Heather Howard
1532 W. Broadway
Madison, WI 53713

– Registrant cancellations received after January 1, 2013, will be charged a 25% cancellation fee. –