



Puzzled on how you're going to stay up-to-date on training? Let Hi-Line help you piece together all your training needs. Our online training webinars will fit into any budget and schedule. **2018** will start out with a **FREE Webinar**, followed by 10 more webinars you won't want to miss!

Below are the **1.5 hour webinars** for **2018**. Each webinar will consist of one hour of instruction and a thirty minute question and answer session. **All webinars will begin at 10:00am Central Time**. Most presentations will be in Power Point format with handouts in pdf format, although more extensive materials may be available for some of the sessions.

January 9 - FREE Webinar – Characteristics of Underground Primary Cable

To efficiently size underground cables, one must first understand the physical structure of the conductors, and the function of the components of the underground cable. Understanding the function and limitation of each layer of the underground cables enables the designer to more effectively design underground distribution lines.

February 13 – Sizing Single-Phase Transformers

To size a transformer, it is necessary to have an understanding of basic electric theory, transformer theory, and the thermal loading characteristics of a transformer. Multiple considerations must be evaluated to determine the correct size transformer for maximum efficiency and reliability. These considerations include weather conditions affecting peak demand, building/ house size, appliances and voltage flicker.

March 13 – Sizing Three-Phase Transformers

Transformers are one of the most significant costs to be considered when serving new customers, and this is especially true for three-phase services. Unlike single-phase transformers which are generally shared by two or more services, three-phase transformers are typically dedicated to one consumer. Sizing three-phase transformers is based on three methods – panel rating, comparable facility, and diversity of the loads.

April 10 – Transformer Banking

A designer's goal should be to provide the most efficient, economical and reliable power to the consumer. To achieve this goal, a designer must consider the numerous configurations to combine two or three distribution transformers to supply power to a service, and the advantages and disadvantages of each configuration.

May 8 – Trends in Fuse Savings

The goal of "fuse saving" is to avoid expensive fuse replacement and to avoid lengthy consumer outages. Fuse saving schemes are not practical for all distribution lines. The distribution system must be evaluated to determine the sections of line where implementation of a fuse saving scheme will be beneficial, and to determine the coordination for a fuse saving scheme.

June 19 – Application and Use of Fault Indicators

Locating faults on underground distribution systems is often frustrating and challenging. Installation of fault indicators can provide a means to quickly locate the source of the outage, thereby drastically reducing the outage time. The challenges to using fault indicators include when and where to install fault indicators to be most beneficial and cost effective. In addition, fault indicators need to be selected based on the continuous current and available fault current.

July 10 – Understanding and Mitigating Uplift

Uplift is a common problem in the electric utility industry. Understanding the causes for uplift is the beginning of solving and preventing uplift on the distribution system. Recognizing instances where uplift typically occurs will lead to design practices that eliminate the problem before construction. Understanding the causes of uplift, will help designers re-design existing structures to correct existing problems.

August 14 – Understanding Construction Specifications

The purpose of construction specifications, whether RUS specifications or individual utility specifications, is to create a uniform construction criteria for the electric distribution system. Engineers, designers, superintendents, and linemen need a working knowledge of the utility specifications to ensure the power lines are designed and built to be safe, reliable and efficient. The discussion of construction specifications will include materials, design parameters, maximum line angles, and design guides.

September 11 – Design and Framing of Riser Poles

The design of a riser pole must consider the underground cable attachment to the pole, the placement of arresters to reduce lead lengths, different types of terminators, and switches. The webinar will discuss different framing methods for riser poles that meet NESC requirements as well as operational goals. Common errors in framing risers will be presented and analyzed.

October 9 – Professional Ethics for Utility Personnel

Ethics is not always black and white or good and evil. Often simple situations such as going to lunch with someone can be considered a breach of ethics. Using realistic examples, the presentation will discuss possible pitfalls when working with vendors, government officials, consumers, etc. and offer methods to avoid such situations.

November 13 – Primer on Current Demand Side Management Practices

Demand side management is employed with various goals and methods which can include sustainability, improving load factor, reducing generation requirements, reduction in transmission congestion, and reducing wholesale power costs. This webinar will address the tools used in the industry to manage the system demand. The advances in communication such as RF mesh radio systems and smart thermostats have increased the number and types of tools available for deployment.



About Hi-Line Engineering

Hi-Line Engineering specializes in providing engineering consulting services to electric utilities. The firm is a wholly owned subsidiary of GDS Associates, Inc.



Hi-Line's mission is to provide quality **energy delivery consulting** services at rates conducive to the demands of the deregulated marketplace. We specialize in safe, reliable, and *efficient* planning, design, and contract administration.

Our staff exhibits diverse experience in the planning, design, operation, and maintenance of electric distribution systems. We have designed hundreds of miles of distribution line in all types of terrain and loading conditions. Many of these projects included contract administration and right-of-way acquisition. Our planning services include experience in a variety of environments consisting of dense urban, resort beach, rural agricultural, and sparsely populated areas. Hi-Line has prepared planning studies for rural electric cooperatives, municipalities, and military bases.

About Webinar Instructors

Kevin Mara, P.E., a Vice President of GDS Associates, and the Principal Engineer of Hi-Line Engineering, a GDS Company, is considered an expert in many of the facets of power distribution systems including system planning, system operation, power system modeling and analysis, and system design. He has 20 years of experience as a distribution engineer including six years as Distribution Engineer at Savannah Electric and Power.

Kevin has extensive knowledge in power quality analysis, system reliability, loss analysis, territory, joint-use issues, as well as management and operation of electric utilities. He has designed SPCC plans, broadband over powerline (BPL), street lighting systems, system valuations, and substations.

Kevin manages a team of engineers and analysts who together assess the valuation of electric distribution systems for privatization. His team has reviewed and reported on more than 50 systems located throughout the United States. Kevin earned his BS in Electrical Engineering from Georgia Institute of Technology. He is a Registered Professional Engineer in 17 states including Georgia, Alabama, Florida, Indiana, Kentucky, Louisiana, Michigan, North Carolina, Ohio, South Carolina, Tennessee, Texas, Virginia, Missouri, Kansas, Mississippi, and South Dakota.

Jason Settle, P.E. has a BS in Electrical Engineering Technology and Math with an option in Power from Southern College of Technology, and is a registered Professional Engineer in Alabama. He has over 17 years of experience in engineering, operations and safety management of electrical utility systems. He is skilled in the preparation of construction work plans, substation justifications, and hands-on system operations. He also conducts engineering and operations training for Hi-Line. Mr. Settle's additional work experience includes developing long range plans, developing substation and distribution line switching procedures, performing coordination studies on distribution lines, performing voltage drop calculations, and staking distribution lines.



2018 WEBINAR REGISTRATION FORM



Webinar Dates and Subjects		\$149 Per Person	\$447 Unlimited
1.	January 9 - FREE Webinar – Characteristics of Underground Primary Cable	Free	Free
2.	February 13 – Sizing Single-Phase Transformers		
3.	March 13 – Sizing Three-Phase Transformers		
4.	April 10 – Transformer Banking		
5.	May 8 – Trends in Fuse Savings		
6.	June 19 – Application and Use of Fault Indicators		
7.	July 10 – Understanding and Mitigating Uplift		
8.	August 14 – Understanding Construction Specifications		
9.	September 11 – Design and Framing of Riser Poles		
10.	October 9 – Professional Ethics for Utility Personnel		
11.	November 13 – Primer on Current Demand Side Management Practices		

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