

2027 WEBINAR SERIES

Hi-Line Engineering is excited to offer twelve webinars, one per month, throughout 2027, all geared toward keeping you up-to-date on industry issues and standards.

Each webinar will consist of one hour of instruction and a thirty-minute question and answer session.

All webinars will begin at 10:00 a.m. Central Time.



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Common Design Errors in Distribution Lines

January 12

Effective distribution line design is built on both engineering principles and practical experience. This webinar examines some of the most common design errors identified through years of designing and inspecting thousands of miles of distribution lines. Attendees will learn best practices, understand the consequences of common mistakes, and gain valuable insights that can be applied to future projects.

Understanding Grounding on Distribution Systems

February 9

Learn the fundamentals of grounding in both utility and customer electrical systems, and why grounding is essential for safety and reliability. Topics include the purpose of grounding, fault current paths, equipment protection, and the role of grounding in system operation. The webinar will also examine the consequences of improper grounding, including shock hazards, stray voltage, equipment damage, and dangerous fault conditions.

Interconnection of Solar and BESS Systems

March 9

As solar and battery energy storage systems (BESS) continue to be deployed across electric utility systems, it is increasingly important for utility personnel to understand the requirements governing their interconnection and operation. This webinar reviews the key provisions of IEEE 1547 and the National Electrical Code (NEC) that apply to solar and energy storage installations. Participants will learn about interconnection requirements, protection considerations, operating characteristics, and compliance issues that can affect both utilities and customers.

Techniques for Capacitor Placement

April 6

This webinar covers the placement of distribution capacitors to maintain an efficiently operating distribution system. VAR flows will be defined and their impact on the distribution system explained. Because VAR flows vary throughout the day and across seasons, capacitor placement strategies must account for these changing conditions.

Underground Design Methods for Subdivisions

May 11

This webinar will review common underground design criteria and practical methods for designing underground distribution systems. Topics include cable routing, conduit applications, burial depth requirements, equipment limitations, and common design mistakes. The session will also address single-contingency outage considerations, overcurrent protection schemes, and the factors that influence overall system performance and reliability.



Introduction to Distribution Load Flow & System Analysis

June 15

Distribution load flow analysis is a fundamental tool used in electric utility planning and system design. It provides critical insight into system performance, helping engineers identify voltage concerns, overloaded equipment, and other operational deficiencies. Participants will learn how planning criteria are applied to identify system deficiencies and evaluate potential solutions. The session will also discuss common corrective measures, including the application and placement of voltage regulators and a practical overview of capacitor placement strategies.

Estimating Load Requirements for Large Three-Phase Customers

July 13

The challenge of serving large three-phase customers is determining load requirements. Three different methods for approaching this challenge will be described. The session will also examine the concepts of load diversity and demand, along with National Electrical Code (NEC) guidelines for sizing feeders and service equipment. Attendees will gain a better understanding of how to evaluate customer load requirements.

Improving Service Quality of Long Feeds

August 10

Every electric utility has that one long feeder that has voltage problems and reliability problems. Often there are few customers on the feeder, making it difficult to justify costly system upgrades. This webinar will discuss common solutions including multiple phasing, reconductoring, replacement of aging infrastructure, and the use of capacitors and regulators. The session will also explore emerging technologies such as distributed generation, microgrids, and battery energy storage systems and their potential role in improving reliability, voltage performance, and overall system operation.

Sneak Peek of the 2028 NESC

September 14

The 2028 NESC is available in August of 2027 and becomes effective in February of 2028. This webinar provides an overview of the updates.

Underground Cable Pulling Techniques & Calculations

October 19

Many utilities are placing cable in conduit for protection and future replacement of the cable. However, limitations in pulling tension and side wall bearing pressure could damage the cable and shorten its service life. This webinar will explain cable pulling calculations and will demonstrate software solutions. Participants will learn practical techniques to minimize cable pulling tensions and reduce installation risks, helping to ensure long-term cable performance.

Arc Flash Calculations and Changes in IEEE 1584

November 9

IEEE 1584 is scheduled for a new release in 2028. This webinar will review the changes in the new standard and how that may impact the calculation of incident energy and the selection of PPE for employees. Participants will gain an understanding of the practical implications of the updated standard and how utilities, engineers, operations personnel, and safety professionals can prepare for its implementation.

Lightning Protection

December 7

Learn how lightning affects electric distribution system reliability. Topics include lightning fundamentals, the differences between direct and induced strikes, surge arrester applications, and proven protection strategies for overhead distribution systems. Special attention will be given to underground electric systems, including the unique challenges associated with lightning-induced surges and practical methods for protecting underground infrastructure. Attendees will gain a better understanding of lightning behavior and effective techniques for improving system reliability and resilience.



ABOUT HI-LINE ENGINEERING

Hi-Line Engineering, a GDS Company, specializes in providing engineering consulting services to electric utilities.

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 lines 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 a wide range of engineering studies for rural electric cooperatives, municipalities, and military bases.

ABOUT WEBINAR INSTRUCTOR

Kevin Mara, P.E., the Executive 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 over 40 years of experience as a distribution engineer and has helped utilities throughout the United States.

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.

Kevin manages a team of engineers and analysts who design more than 400 miles of distribution each year and provide engineering support from planning to operations. Kevin earned his BS in Electrical Engineering from Georgia Institute of Technology and is a Registered Professional Engineer in 23 states.



2027 WEBINAR REGISTRATION FORM

Webinar Dates and Subjects	Check desired webinars
January 12 – Common Design Errors in Distribution Lines	
February 9 – Understanding Grounding on Distribution Systems	
March 9 – Interconnection of Solar and BESS Systems	
April 6 – Techniques for Capacitor Placement	
May 11 – Underground Design Methods for Subdivisions	
June 15 – Introduction to Distribution Load Flow & System Analysis	
July 13 – Estimating Load Requirements for Large Three-Phase Customers	
August 10 – Improving Service Quality of Long Feeds	
September 14 – Sneak Peek of the 2028 NESC	
October 19 – Underground Cable Pulling Techniques & Calculations	
November 9 – Arc Flash Calculations & Changes in IEEE 1584	
December 7 – Lightning Protection	

Pricing Subscriptions and Savings						
# of Attendees	# of Webinars and Pricing (check desired subscription below)					
	1 webinar		6 webinars		Complete Series	
Single	\$195		\$936		\$1,638	
10 to 20	\$1,365		\$7,020		\$9,360	
21+	\$2,340		\$9,360		\$14,040	

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Please fill in the information below and email to melanie.ward@gdsassociates.com
Questions? Call Melanie Ward at **334-887-3297** or email melanie.ward@gdsassociates.com

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