Basic Electric Distribution Systems - Part 1

2026 Webinar Schedule

This webinar series is perfect for educating new employees in the utility industry or office employees who desire a broader knowledge of field operations in the electric utility industry. Hi-Line is excited to offer this series, which provides a high level overview of the power industry from generation to distribution to consumer.

All webinars will begin at 1:00 p.m. Central Time. Each webinar will consist of one hour of instruction, followed by a thirty-minute question and answer session.

Generation to Distribution January 13	Electricity is more complex than flipping a switch. Power is generated using a variety of methods and transported over a vast system called the electric power grid. This webinar discusses the electric power grid from generation to the end user. The presentation provides a high-level overview of basic electric theory as well as discussion of the various types of electric utilities.
The Transmission System February 10	The transmission grid moves bulk power from generation resources to local communities. The grid is an open access resource and the rules of the road for sharing the resource are explained. Looped and radial systems, the components for substations, and energy delivery are included in the discussion.
The Electric Distribution System March 24	The electric distribution system is a complex network of overhead and underground lines and equipment. This webinar discusses the components of overhead and underground distribution lines, as well as the specifications necessary to ensure the strength of the materials. This session also includes an overview of overcurrent protection methods and the balance between protecting the system and minimizing outages.
Special Equipment: Transformers & Meters April 21	Transformers are a key piece of equipment that makes alternating current (AC). This webinar addresses transformer function along with specialty transformers, such as voltage regulators. Meters not only record power usage, but meter bases are the line of demarcation between utility-owned facilities and the customers' facilities. This presentation discusses the proper methods for installing and removing meters, service entrance specifications, service clearances, and meter safety.
Safety May 12	The National Electrical Safety Code sets the clearances for power lines, as well as strength requirements, worker safety zones, and worker safety personal protective equipment. This webinar presents an overview of the National Electrical Safety Code requirements using easy to understand charts, photographs and diagrams.
System Reliability and Resiliency June 9	System reliability is an important aspect of electric utility operations. Power is seen as a necessity of life and, as such, power outages can be public relations nightmares. Utilities strive to "keep the lights on" and, in the event of an outage, restore power as quickly and safely as possible. This presentation discusses the typical causes of outages and restoration procedures.

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 lines in all types of terrain and loading conditions. Many of these projects include 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, municipals, and military bases.

About the Instructor

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 over 30 years of experience as a distribution engineer, including six years as a Distribution Engineer at Savannah Electric and Power.

Kevin has extensive knowledge in power quality analysis, system reliability, loss analysis, territory, and joint-use issues, as well as management and operation of electric utilities. He has designed SPCC plans, broadband over power lines (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 22 states.

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BASIC ELECTRIC SYSTEMS WEBINAR REGISTRATION FORM

Webinar Dates and Subjects		Check desired webinars
1.	**January 13** – Generation to Distribution	☐
2.	**February 10** – The Transmission System	☐
3.	**March 24** – The Electric Distribution System	☐
4.	**April 21**– Special Equipment: Transformers & Meters	☐
5.	**May 12** – Safety	☐
6.	**June 9** – System Reliability and Resiliency	☐

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Questions? Call Rachael Harms at **334-887-3297** or email rachael.harms@gdsassociates.com

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