



Basic Electric Distribution Systems

2027 Webinar Series

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

February 9

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

March 9

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 it are explained. Substation components and connectivity will be discussed to provide a basic understanding of substation operations.

The Electric Distribution System

April 6

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 used.

Special Equipment: Transformers & Meters

May 11

Transformers are a key piece of equipment that make alternating current. This webinar addresses transformer function, along with specialty transformers like voltage regulators. This presentation will also discuss methods for sizing transformers based on concept of diversity of electrical demand. Beneficial electrification will be discussed as it relates to the impact of transformers and services.

Meters not only record power usage, but meter bases are the line of demarcation between utility-owned facilities and the customers' facilities.



Smart Grid and Distributed Energy Resources

June 15

The rapid growth of solar, wind, and battery storage is transforming the electric distribution system. Join us for an informative webinar that examines the integration of distributed energy resources (DERs), including interconnection processes, protection requirements, and operational impacts. Learn how utilities are leveraging smart grid technologies, advanced communications, and intelligent edge devices to enhance reliability, visibility, and control while accommodating these emerging energy resources.

Risk, Reliability, and Resiliency

July 13

Keeping the lights on is one of the most important goals of every electric utility. However, utilities must contend with increasing challenges, including cyberattacks, physical security threats, wildfires, and extreme weather events. This webinar will provide an overview of the key risks facing electric systems today, the most common causes of outages, and the processes utilities use to restore service quickly and safely. Learn how utilities strengthen reliability and resilience while maintaining customer confidence during service interruptions.

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.

BASIC ELECTRIC DISTRIBUTION SYSTEMS

Registration Form

Webinar Dates and Subjects	Check desired webinars
February 9 – Generation to Distribution	
March 9 – The Transmission System	
April 6 – The Electric Distribution System	
May 11 – Special Equipment: Transformers & Meters	
June 15 – Smart Grid & Distributed Energy Resources	
July 13 – Risk, Reliability, & Resiliency	

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To register, 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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