



QUANTA
TECHNOLOGY

POWER DISTRIBUTION CONTINUING EDUCATION

INDEPENDENT, OBJECTIVE, AND PRACTICAL EXPERTISE
IN ELECTRIC POWER



POWER DISTRIBUTION

INDEPENDENT — OBJECTIVE — PRACTICAL — EXPERTISE

If your company is like many electric utilities at the moment, it is facing increasing peak load and energy growth due to electrification that will require additional power distribution and customer level planning effort. But it also faces a very tight labor market for power engineers and planners, making it difficult to have enough planners, with the required skills, to meet that challenge.

Quanta Technology offers a wide curriculum of continuing education seminars and tutorials covering the entire field of power T&D and DER technology, planning, engineering, and management. If you have an interest in a topic, very likely we have a course on it. The four courses listed below were designed to help utilities challenged by electrification load growth and tight planning resources “train up” new talent quickly and help fine-tune their organization’s capability to handle the future challenges they face.

Flexible, Tailorable, Customizable

These courses are available tailored your company’s specific needs and can include a focus on your company’s specification planning, tools, procedures, and guidelines. These course are available on-site or over the internet and can be modified for duration and depth.

Taught by Industry’s Leading Experts

All continuing education series seminars are taught by experienced professionals who are actively doing the type of work they teach. Overall technical leadership of courses in power distribution is provided by H. Lee Willis, author of the *Power Distribution Planning Reference Book*, *Spatial Electric Load Forecasting*, and *Introduction to Integrated Resource T&D Planning*. Lee is the lead instructor on these four courses.



INTRODUCTION TO POWER DISTRIBUTION SYSTEMS PLANNING

Objective: A short-course designed to quickly bring new members of the distribution planning team up to speed on feeder system planning and how to do it.

This introductory course is designed help engineers and technicians with only a basic technical background understand the entire distribution system, the challenges planning for growth creates, and their company’s methodology for planning that system, with a focus on short-range (two to five year ahead) feeder-system forecasting, planning, and project development. This course is designed to quickly boost the understanding and skills of new planners so they can more quickly become contributing members of their planning team.

The course begins with an overview of the entire distribution planning process as accomplished at most utilities in the U.S., with all of its parts and interactions, sufficient for novice planners to understand how their role fits into the bigger picture of maintaining a robust and efficient delivery system and using it to satisfy both the customers’ service and the company’s business needs. Skills and concepts needed to quickly become a useful member of a team doing feeder-system upgrades for short- and medium- (two to five year) ahead planning of the feeder system, including forecast and load studies, development, review and evaluation of alternatives, basic criteria achievement studies (load flow, reliability, resiliency), protection, voltage and power factor correction, and project development.

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LOAD FORECASTING AND PLANNING FOR AN ELECTRIFICATION FUTURE

Objective: Meet the challenges of the future by understanding the basics and finer points of electrification and how to best plan for it.

This course is designed for experienced planners and managers who are facing increasing load growth due to electrification of transportation (i.e., electric vehicles) and stationary applications like building heating and industrial processes. It begins with an analytical look at the differences between the load growth electrification causes and the typical trends planners have seen in the recent past, focusing on how and why planners will need to use different tools and procedures. Legacy methods the industry used the last time it faced similar type and magnitude of load growth (air conditioning) are studied to learn lessons in how to best address high per capita load growth planning. Current industry experience and activity/planning methods in use and leading-edge methodology developed to address the unique needs of EV planning and building electrification analysis.

Planning methods and tools appropriate for high-growth distributed per-capita load expansion patterns, as caused by electrification, are review in depth, with focus on methodology and tools, where to get them, how to use them, and how to document and defend the resulting plans and budgets. Four pitfalls to avoid, and six definite “must do” steps and techniques in electrification load analysis, forecasting, and planning.

Both probabilistic and multi-scenario approaches to handling uncertainty are addressed, as are guidelines for defensible archiving and documentation of results.



INTEGRATED-RESOURCE PLANNING FOR RETAIL ELECTRIC UTILITIES

Objective: It’s required and it potentially it can provide benefits to both customers and utility, if planners objectively and comprehensively. This course shows you how.

Modern electric distribution utilities face new challenges due to distributed energy resources, which among other ways of distinguishing them can be viewed as falling into two categories:

- Those owned by customers (e.g., rooftop PV, Tesla Powerwalls, etc.), which create hosting, two-way flow, and other complexities not part of traditional T&D planning.
- Those owned or available to the utility, including energy storage, PV, other DG, and various DER and NWA solutions.

This course looks at both types of DER and the data, analysis, evaluation, planning methods, and the economic and reliability methodology needed to comprehensively and objectively plan the utility’s retail-level system, practices, and operation to best meet all those combined needs. Most typically, the first category is treated as an expanded consequence of customer load and energy growth requiring additional dimensions of the customer forecast phase. The second category is an expansion of traditional planning methods, and involves both modeling a wider range of resources, but assessing their interactions and synergy. It shows how, why, where, when and what is changed in the planning process to accommodate each. It goes over methods that accommodate various DER and discusses the detail and evaluation potential and benefits of each.



FUNDAMENTALS OF ELECTRIC UTILITY POWER DELIVERY SYSTEMS

Objective: For new employees and those not familiar with the power industry, electric utilities, or T&D systems, a quick overview so they understand the basics and can fit into their new job.

This course is an appropriate introductory step to new employees joining a retail electric utility, transmission or generation operator, energy consulting company, power equipment manufacturer, or regulatory authority. It provides a basic and non-technical overview of electric power and its use, the electric power industry and its regulation, customer usage of electricity, T&D systems and the basic types and functions of equipment in them, electrical safety concepts, and electric utilities and their operations and business models.

The course is designed for new employees unfamiliar with the utility industry and power systems. It is also appropriate for employees moving into new positions where they need to have a broader understanding of their company’s assets, customer base and/or the way it manages its business and operates its system.

This course is typically tailored and customized to individual company and participant needs and can be varied in duration and focus as needed.

Material is covered in a very accessible non-technical manner, with a focus on how different aspects of your company fit within the context of its role within the power industry.

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NOT YOUR

TRADITIONAL CONSULTANTS

INDEPENDENT — OBJECTIVE — PRACTICAL — EXPERTISE

Who:

- Trusted advisors and solution providers with global utility experience
- Industry-recognized thought leaders
- Engineers and MBAs with the ability to address business and technology strategy, as well as the most specialized issues
- Experience spanning the entire lifecycle, from planning to EPC implementation with Quanta companies, to asset management and renewal

Why:

- Independent, objective, and practical advice and solutions
- Unique business, regulatory, and technical expertise and best practice know-how
- Unique SW and HW solutions
- Staff extension requiring technical skills
- Testing, commissioning, integration, and post-installation evaluations of technologies via sustainable technology integration labs

Traditional
Management
Consultants



Traditional
Engineering
Companies


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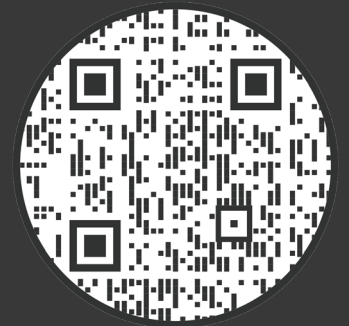
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for your projects. Contact
and follow us today.**