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SCADA Training: T&D Architecture, Implementation and Emerging Trends

View Course Details

COURSE DATES AND TIMES

October 15-16 , 2026

10:00 am - 4:30 pm ET

SCADA Training: T&D Architecture, Implementation, and Emerging Trends. This comprehensive 12-Hour Live Online, Instructor-led training course is designed to provide you with an in-depth understanding of SCADA systems, their applications, and the essential skills required to successfully implement and maintain SCADA technology in the electric utility Transmission and Distribution (T&D) industry.

In the rapidly evolving landscape of electrical distribution, Supervisory Control and Data Acquisition (SCADA) systems are pivotal for real-time monitoring, control, and optimization of power networks. This comprehensive 12-hour live online instructor-led course delves into the intricacies of Distribution SCADA systems, offering participants a blend of theoretical knowledge and practical insights. Through interactive sessions, real-world case studies, and hands-on demonstrations, attendees will gain the expertise to design, implement, and manage robust SCADA systems tailored for modern electrical distribution challenges.

This course is designed for engineers, technicians, operators, and other professionals who are involved in the planning, design, implementation, or maintenance of SCADA systems in the electric utility T&D industry. It is also suitable for those who seek a comprehensive understanding of the technology and its applications in this sector.

Throughout the course, you will gain a detailed understanding of SCADA system components, communication technologies, and protocols, as well as practical insights into their application in substations, power distribution networks, and transmission networks. You will also learn about the critical aspects of cybersecurity, system maintenance, and troubleshooting.

By completing this SCADA training, you will be equipped with the knowledge and skills necessary to contribute to the success of your organization, ensuring the stability, efficiency,

and security of our power grid. With the practical experience and industry-specific expertise gained in this course, you will be well-prepared to face the challenges and opportunities that lie ahead in the ever-evolving landscape of electric utility T&D systems.

Learning Outcomes

Upon completing this course, participants will be able to:

- Comprehend the fundamental components and architecture of Distribution SCADA systems.
- Analyze various SCADA system architectures and determine suitable configurations based on organizational needs.
- Evaluate and select appropriate hardware and software components for specific applications.
- Design and implement effective communication networks utilizing industry-standard protocols.
- Develop and configure HMI screens and databases for efficient monitoring and control.
- Implement robust cybersecurity measures to safeguard SCADA infrastructures.
- Stay abreast of emerging technologies and trends influencing the evolution of SCADA systems.

WHO SHOULD ATTEND

This course is designed for engineers, technicians, operators, and other professionals who are involved in the planning, design, implementation, or maintenance of SCADA systems in the electric utility T&D industry. It is also suitable for those who seek a comprehensive understanding of the technology and its applications in this sector.

- Electrical Engineers and Technicians involved in the design, implementation, and maintenance of SCADA systems.
- SCADA System Integrators and Developers seeking to enhance their knowledge of distribution networks.
- Utility Operators and Managers responsible for overseeing electrical distribution and automation.
- IT Professionals working on the integration of SCADA systems with corporate networks.
- Consultants and Project Managers involved in SCADA projects and infrastructure development.
- By participating in this course, attendees will acquire the skills and knowledge necessary to excel in the field of Distribution SCADA systems, positioning themselves as valuable assets in the modern electrical distribution sector.

STUDENTS RECEIVE

- **FREE** 100-Page Digital Electrical Safety Handbook (Value $20)
- **$100 Coupon** Toward Any Future Electricity Forum Event (Restrictions Apply)
- Certificate of Course Completion
- 1.2 Continuing Education Unit (CEU) Credits (12 Professional Development Hours)
- **FREE** Electricity Today T&D Magazine Subscription (Value $25.00)
- Course Materials In PDF Format

COURSE OUTLINE

SCADA Training Outline for Electric Utility T&D Systems - Course Outline

DAY ONE

Day 1: Foundations and Components

Introduction to Distribution SCADA Systems

- Course objectives and structure
- Key terminology and concepts
- Role of SCADA in modern electrical distribution

SCADA System Architectures

- On-premise configurations
- Cloud-based solutions
- Hybrid models
- Comparative analysis and selection criteria

Hardware Components

- Master stations and servers
- Remote Terminal Units (RTUs) and Intelligent Electronic Devices (IEDs)
- Sensors and actuators
- Integration of Programmable Logic Controllers (PLCs)

Communication Networks

- OSI model overview
- Physical network layers: wired and wireless media
- Communication protocols: Modbus, DNP3, IEC 60870-5
- Network infrastructure and topology

Software Components

- Human-Machine Interface (HMI) design and development
- SCADA databases and data management
- Alarm management systems
- Data trending and historical analysis

Data Management and Utilization

- Point lists and data acquisition
- Data processing and storage
- Leveraging data for operational efficiency and decision-making

DAY TWO

Implementation, Security, and Future Trends

SCADA System Implementation

- In-house development vs. outsourcing
- Project lifecycle: planning, design, deployment, and commissioning
- Key considerations for successful implementation

Stakeholder Engagement

- Identifying internal and external stakeholders
- Collaboration with SCADA vendors and integrators
- Coordination with field services and consultants

Cybersecurity in SCADA Systems

- Understanding vulnerabilities and threat landscapes
- Implementing robust security strategies and best practices
- Compliance with industry standards and regulations
- Incident response planning and disaster recovery

Emerging Trends and Technologies

- Integration of Artificial Intelligence (AI) and Machine Learning (ML)
- Advancements in cloud computing for SCADA
- Development of the Smart Grid and its implications
- Interoperability and integration with other enterprise systems

Practical Demonstrations and Case Studies

- Real-world examples of SCADA implementations
- Lessons learned and best practices
- Interactive exercises to reinforce learning

COURSE TIMETABLE

Both days:
Start: 10:00 am Eastern Time
Finish: 4:00 pm Eastern Time

Contact us Today for a FREE quotation to deliver this course at your company's location.

Request Quote