



KINECTRICS

SPECIALIZED  
TRAINING  
COURSES

## Lightning Risk Management

### Overview

Starting with an introduction to lightning protection systems, including shielding and insulation failure mechanisms, this course provides the basics for understanding issues in controlling the risks of lightning damage. Referencing the most recent international standards such as IEC 62305/2006, protection methodologies will be compared and contrasted, reviewing the theory and practical implementation of each approach. Test procedures to prove the adequacy of protective devices and methods will also be demonstrated as examples of best practice. Finally, Kinectrics' experiences in the field and lessons learned related to the implementation of lightning protection system testing will be presented and shared with course attendees.

### Course Outline:

#### Defining and Managing the Lightning Risk

- Local climate conditions
- Vulnerability to lightning damage: Tubes to Gigabytes
- Issues in risk transfer via insurance
- Lightning protection standards
- Risk mitigation with lightning protection systems (LPS)

#### Methods for Analyzing and Testing Lightning Protection Systems (LPS)

- Electrical circuit models
- Travelling wave network models
- Electromagnetic coupling (EMC) models
- Transfer impedance testing

#### Special Issues in Lightning Protection of Renewable Energy Systems

- Getting lightning currents into and out of concrete structures
- Wind turbine lightning protection systems
- Rooftop solar panel lightning protection systems

#### Special Issues in Lightning Protection of Sensitive Installations

- Standard and premium power quality
- Continuous process equipment
- Server farms
- Telecommunications towers and chimneys
- Selection of surge protective devices

#### Maintenance Testing

- Visual inspection provisions
- LPS integrity testing
- Surge protective device integrity testing
- Safety issues

#### Kinectrics Case Studies

- Experience with on-site diagnostic testing
- Transmission line and station case studies

### Who Should Attend?

- New engineers facing practical electrical grounding layout problems for the first time
- Consulting engineers and architects dealing with specification of high-tech or renewable-energy facilities
- Customer engineers supervising construction of facilities to enclose high-value continuous process equipment
- Specialists in electrical power quality issues

### Key Benefits:

Upon completion of this course, attendees will be able to:

- Describe issues resulting in lightning failures of electrical power system components
- Analyze protection methodologies from the latest international standards
- Evaluate test results from actual case studies

### Price:

Two Days - \$1,500+GST

Complimentary lunch & coffee breaks

### Instructors:



**Bill Chisholm, P.Eng, Ph.D.** has over three decades of experience in lightning protection of electrical systems and was the key author of lightning protection standard IEEE 1243/1997.



**Emanuel Petrache, Ph.D.** Emanuel Petrache is a Senior Engineer with over ten years of industrial and academic experience in electromagnetic compatibility problems, including lightning effects.

### Register now:

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