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## Toronto Electrical Grounding Training Week

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

<https://www.electricityforum.com/onsite-training-rfq>

This 5-Day Electrical Grounding Course encompasses three of our leading grounding and bonding courses:

[Grounding and Bonding Training](#)

[High Voltage Electrical Grounding](#)

[Tower Grounding Training For Telecom Applications](#)

Our 2-Day basic industrial Grounding and Bonding course is founded on the Electrical Code and is designed to give students the correct information they need to design, install and maintain effective electrical grounding systems in industrial, commercial and institutional power systems.

Our 1-Day High Voltage Grounding course will provide the basic principles of grounding a power supply network to ensure safety of personnel and equipment. Understanding these

principles will provide the correct tools to design a grounding system applicable to utility networks and industrial plant distribution. This course covers the basic procedures in working safely on medium and high voltage systems.

Our 2-Day Telecommunications Grounding course will define and completely explain grounding and bonding for telecommunications systems. It will provide information for the installation of a grounding and bonding system for communications infrastructure.

This course will provide the participants with a good understanding of the principles of lightning protection and grounding of telecommunications facilities, such as self-supporting radio towers, guyed masts, monopoles and rooftop antenna mounting frames and structures and how techniques are applied in the field to protect these structures and the associated equipment, staff and the general public.

### **INCREASE YOUR GROUNDING KNOWLEDGE**

- Focus on specific electrical grounding and bonding problems and consequences relating to fires, safety of personnel, and damage to equipment
- Participate in a discussion of electrical grounding and bonding problems and how to overcome or avoid them
- Gain a firm foundation of knowledge for your next project involving electrical grounding and bonding
- Develop your knowledge of theory and practice

### **LEARN ABOUT**

- Specific grounding problems, installations and CEC requirements
- Testing procedures for industrial, commercial and institutional electric power grounding systems
- Practical solutions to grounding problems

## YOU WILL LEARN

- Work more safely and efficiently
- Have a better understanding of electrical grounding requirements under the CEC.
- Make fewer installation mistakes and pass inspections more easily
- Be more aware of the benefits of good grounding and bonding systems
- Be better prepared to design your next grounding and bonding system

## WHO SHOULD ATTEND

- Utility And Industrial Electrical Engineers And Engineering Technicians
- Project Engineers
- Design Engineers
- Field Technicians
- Electrical Technicians
- Electricians
- Plant Operators
- Plant Engineers
- Electrical Supervisors

## STUDENTS RECEIVE

- 100-Page Digital Electrical Grounding Handbook - Value \$20 (details below)
- 1.4 Continuing Education Unit (CEU) Credits
- A **FREE** Magazine Subscription (Value \$25)
- **\$100** Coupon toward any future Electricity Forum event (restrictions apply)
- Course Presentations in Paper Format

## **COURSE OUTLINE**

### **Edmonton Electrical Grounding Week Program Outline**

#### **Course Instructor:**

*Pablo Diaz, Electricity Forum Lightning Protection and Electrical Grounding Consultant*

#### **DAY ONE**

##### **Course #1: Industrial Electrical Grounding and Bonding Training Program**

SESSION 1: ELECTRICAL GROUNDING – OVERVIEW

SESSION 2: ELECTRICAL GROUNDING METHODS

SESSION 3: GROUNDING CONNECTIONS FOR SYSTEMS AND CIRCUITS

SESSION 4: GROUNDING OF GENERATOR TO SUPPLY EMERGENCY POWER

SESSION 5: GROUNDING CONNECTIONS FOR TWO OR MORE BUILDINGS OR STRUCTURES SUPPLIED FROM A SINGLE SERVICE

SESSION 6: CONDUCTOR TO BE GROUNDED FOR AC WIRING SYSTEMS

SESSION 7: CONDUCTOR ENCLOSURE BONDING

#### **DAY TWO**

SESSION 8: BONDING METHODS

SESSION 9: ELECTRICAL GROUNDING ELECTRODE SYSTEM

SESSION 10: GROUNDING AND BONDING CONDUCTORS

SESSION 11: GROUNDING AND BONDING CONDUCTOR CONNECTIONS

SESSION 12: GROUNDING AN ELECTRICAL DISTRIBUTION SYSTEM

SESSION 13: INDUSTRIAL PROCESSES CONTROL SYSTEMS GROUNDING

SESSION 14: ELECTRICAL GROUNDING IN HEALTH CARE FACILITIES

SESSION 15:

**FOUR CASE HISTORIES INCLUDED:**

THERE ARE FOUR CASE STUDIES THAT WILL BE PRESENTED:

PETROCHEMICAL, TELECOMMUNICATION, COMPUTER FACILITY, AND A MANUFACTURING PLANT. SECOND DAY ALSO INCLUDES A LABORATORY SECTION WHERE A THE PARTICIPANTS ARE TAUGHT HOW TO PERFORM A GROUNDING AND POWER QUALITY SITE SURVEY. MEASUREMENT PERFORMED: GROUND RESISTANCE AND RESISTIVITY, POWER QUALITY PARAMETERS SUCH AS: VOLTAGE, CURRENT, LOAD BALANCE, POWER FACTOR, DISPLACEMENT POWER FACTOR, VOLTAGE AND CURRENT HARMONICS, EFFECTIVE POWER (KW), APPARENT POWER (KVA), REACTIVE POWER (KVAR), K FACTOR FOR TRANSFORMERS, ETC, TO DIAGNOSE AND SOLVE MOST COMMON PROBLEMS.

**DAY THREE**

**Course #2: High Voltage Electrical Grounding and Bonding For Utility and Industrial Applications**

## SUBSTATION GROUNDING DESIGN

SESSION 1: DEFINITIONS AND INTERPRETATIONS

SESSION 2: GROUNDING OPTIONS

SESSION 3: GROUND GRID DESIGN FOR SUBSTATIONS

SESSION 4: SWITCHYARD AND SUBSTATION PROTECTIVE GROUNDING

SESSION 5: POWER LINE PROTECTIVE GROUNDING

SESSION 6: TECHNICAL CONSIDERATIONS IN PROTECTIVE GROUNDING IN  
SUBSTATIONS AND SWITCHYARDS

INTERNATIONAL AND LOCAL REGULATIONS

## **DAY FOUR**

### **Course #3: Electrical Grounding and Bonding For Telecommunications Networks**

#### OVERVIEW

SESSION 1: TELECOMMUNICATIONS GROUNDING OVERVIEW

SESSION 2: GROUNDING ELECTRODE SYSTEM

SESSION 3: SYSTEM GROUNDING

SESSION 4: TOWER INSTALLATIONS

SESSION 5: TELECOMMUNICATIONS ELECTRICAL BONDING SYSTEM

## SESSION 6: TELECOMMUNICATIONS STAND-BY/EMERGENCY GENERATORS

### **DAY FIVE**

SESSION 7: LIGHTNING PROTECTION SYSTEM FOR A TELECOMMUNICATIONS SITE

SESSION 8: TELECOMMUNICATIONS INDUSTRY GROUNDING PRACTICES

SESSION 9: GROUNDING AGAINST ELECTROMAGNETIC INTERFERENCE (EMI/ESD/RFI)

SESSION 10: TELECOMMUNICATIONS EQUIPMENT PROTECTION

STANDARDS AND CODES REFERNCES FOR THIS COURSE

REFERENCES

**Review of expectations  
Questions and Answers**

### **COURSE TIMETABLE**

**All days:**

Start: 8:00 a.m.

Coffee Break: 10:00 a.m.

Lunch: 12:00 noon (included with course)

Restart: 1:15 p.m.

Finish: 4:30 p.m.

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