

# Electrical Protection for Communication Systems



## Course Description

Electronic communication systems located in outside plant, and sheltered applications can suffer severe damage from power faults and lightning unless the protection is adequately specified, installed and maintained. This course will train you on the proper application, installation, maintenance and troubleshooting of electrical protection devices and systems. Mechanisms of damage caused by induction, lightning strikes, power fault ground potential rise, and lightning ground potential rise will be covered in detail with a clear explanation of the protection expectations and limitations. Problems caused by poor installation and lack of appropriate maintenance will be discussed and demonstrate how minimum maintenance can save you and your company considerable grief and expense.

Damage to electronic communication systems creates a significant excess operational cost. Repairs, equipment replacement, labor and transportation expense can have significant impact to the operational budget. Lost revenues and customer loss will occur if the damage is not prevented or repaired quickly. Effective electrical protection will pay for itself many times over.

Electrical protection standards and numerous guidelines exist that provide some explanations and answers but can make finding relevant information difficult. In some cases they contradict each other. This course will save you the time of sorting through all the standards and guidelines and provide you with the essential information as well as a convenient source to reference in the future.

The science of electrical protection is constantly evolving. In the last several years the understanding of how damage occurs and the protection technology available has improved substantially. Be armed with the most current tools to protect your infrastructure investment.

## Students Will Learn

- **How utility power faults and lightning can damage equipment**
- **Soil resistivity affects on equipment vulnerability**
- **The importance and limitations of grounding**
- **Power and Lightning Ground Potential Rise**
- **Special considerations for sites near or serving HV facilities**
- **Zone of Influence (ZOI)**
- **How to properly protect sites with towers**
- **The importance of lead inductance**
- **Signal and Power isolation methods and equipment**
- **How to select the right protection technology**
- **Proper installation of electrical protection equipment**
- **How protection technology fails**
- **And more...**

## **Target Audience**

This course is geared to field and service technicians, managers and engineers.

## **Prerequisites**

None.

## **Delivery Method**

Instructor-Led with numerous case studies and exercises.

## **Equipment Requirements**

**(This apply's to our hands-on courses only)**

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

## **Course Length**

2 Days