



## POWER INSTALL - Telecom Power Connecting Methods

**Length:** 4.5 Days

### Overview

POWER INSTALL provides instruction on the proper methods required to connect the power feeds which run from the telecommunications equipment into live secondary power distribution bays (BDFB). TPI Trainers has developed a mobile BDFB that will be utilized to simulate a live power environment. In class exercises provide individuals with the skills required to develop a thorough Method of Procedure (MOP).

The instruction describes the proper safety and installation procedures necessary to perform equipment additions in telecommunications facilities through the development of a comprehensive DC distribution MOP. These exercises also provide the student with the skills required to create, review or approve a comprehensive DC distribution installation MOP for installing new power cables, as well as transitioning the equipment loads from one BDFB to another without compromising service continuity.

Power connections made into live power distribution bays is considered to be a “critical work activity” in accordance with industry requirements. While Skill Level 3 and 4 installers can create a MOP, only Skill Level 4 installers qualified in performing power connectivity are permitted to perform these “critical work activities”.

It is not only paramount to recognize the importance of maintaining service continuity of the telecommunications equipment in a telecommunications facility, but also to realize that any errors during the installation process can impact other equipments served by the power system.

**Who should attend:** POWER INSTALL is recommended for all personnel working in a telecommunications environment. Installers will understand how to develop a quality MOP and technicians, managers and engineers will recognize what is expected when approving or observing the MOP for the addition of DC power cables.

Throughout the course knowledge assessments are used to reinforce the topics discussed. At the completion of the course you will be tested to document your knowledge. Successful completion of this test will earn TPI Trainers Certification.

**Note:** When POWER INSTALL is delivered to at your location our instructors can enhance your learning experience by specifically targeting the lessons learned to your specific power systems.

POWER INSTALL depicts the current industry standards and can be customized to meet the needs of your specific work group. To discuss the need to customize this course you can contact Vicki Johnson by calling 1-630-607-9302.

## Course Outline

- Installation Skill Level
  - competency
  - critical activity
- Safety Precautions
  - general installation
  - working in a “live” power environment
  - protection of equipment
  - insulation methods
  - use of insulated tools
- Impact on Telecommunications Equipment
  - Method of Procedure (MOP)
  - service continuity
- DC Power System
  - function
  - requirements
  - equipment voltage limits
  - voltage drop
- DC Distribution Methods
  - single power circuits
  - duplex power circuits
  - diversity
- General Circuit Protection Guidelines
  - fuse sizing
  - circuit breaker sizing
  - protection co-ordination
- Circuit Protection Application
  - fuses
  - circuit breakers
  - list 1 drains
  - list 2 drains
- Secondary Power Distribution Network
  - management & administration
  - switching systems
  - toll / transmission / transport systems

- Engineering the Power Distribution Network
  - operating voltage
  - minimum voltage vs. voltage drop
  - conductor sizing
  - calculations
  - power wire sizes
  
- Grounding methods
  - ground system
  - CBN (Common Bonding Network)
  - IBN (Isolated Bonding Network)
  - power plant
  
- Method of Procedures (MOP)
  - conditions for all MOPs
  - generic MOP
    - basic contents
  - detailed MOP
    - contents
  - MOP approvals
  - MOP changes
  - service interruptions & degradations
  
- Power to a New Equipment Bay
  - testing the battery supply lead
  - testing the battery return lead
  - labeling
  - powering-up the circuit
  
- Live Power Transitions
  - Battery return load amperage verification
  - battery return H-taps
  - load amperage verification
  - live battery connections
  - voltage difference measurements
  - paralleling of live power feeds
  - verification of load transfer
  - removal of original battery return leads
  - removal of original battery supply leads



**Class exercise:**

- Develop a detailed MOP for the addition of power cables into a new equipment bay.
- Run, secure and connect power cables as described in detailed MOP.
- Develop a detailed MOP for the transition of power feeds from the existing equipment bay to a new secondary power distribution bay.
- Run, secure, connect and transition the load from the existing power source to the new source cables as described in detailed MOP.

**Take Home Materials:**

A complete course manual will be provided. This manual will be a valuable reference as you return to your job.

**Who Can Benefit:**

This course is a benefit for individuals who require a considerable understanding of the methods required to add power cables into a live power distribution bay or transition the power feeds from one BDFB to another. Installers will understand how to develop a quality MOP and technicians, managers and engineers will recognize what is expected when approving or observing the MOP for the addition of DC power cables.