



Infrared Inspection of Electrical Power Systems 16 Hours

Who Should Attend?

Technicians, Engineers or Supervisors responsible for preventative and scheduled maintenance.

Course Description:

Students will learn basic infrared theory as it applies to infrared inspection of electrical systems. Selection criteria, manufacturers, models, range and level settings of infrared imagers and accessory equipment are covered. Students have the opportunity to use imager in class. Detailed instruction on safety and indoor and outdoor inspection of transformers, buss, switchgear, fuses, circuit breakers, and cable trays is provided. Guidelines for report generation, presentation and end user/thermographer responsibilities are also addressed.

Outline:

- A) Introduction
- B) Basic Infrared Theory
 - i) Heat Transfer
 - ii) Electromagnetic Spectrum
 - iii) Emittance, Reflectance, and Transmittance
 - iv) Atmospheric Transmission
 - v) IR Wavebands and Lens Materials
- C) Infrared Equipment
 - i) Selection Criteria
 - ii) Range and Level Settings
 - iii) Class Demonstrations
 - iv) Hands-on Imager Use In Class
- D) Electrical System Inspection
 - i) Theory and Thermal Signatures of Problems/Anomalies
 - ii) Airborne Inspection of Transmission Lines
 - iii) Ground-Based Inspection of Distribution Systems
 - iv) Substation Inspections
 - v) In-Plant Inspection of:
 - (1) Transformers
 - (2) Buss
 - (3) Switchgear
 - (4) Fuses
 - (5) Circuit Breakers
 - (6) Cable Trays
 - vi) Guidelines for Inspection
 - (1) End User Responsibilities
 - (2) Thermographer Responsibilities
 - (3) Safety Practices
 - (4) Data Gathering and Report Presentation

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