



*Now in its 13th year! Gain valuable hands-on experience and insights.*

## **Residential Electricity for Fire Investigators**

*An in-lab program exploring electrical wiring, distribution systems and fire causation.*

**Sign up now – Class size is limited to 45 participants.**

**Sept. 30-Oct. 2, 2020**

Optional CFI test credits available (22 hours)  
along with continuing education credits.

This three-day training session is intended to provide you with hands-on practical experience with wiring residential system and a better understanding of how electricity can cause fires.

We'll examine how electricity gets to homes, how it's transformed and distributed through a structure and how electrical fires occur. We'll also discuss circuit protection in a structure, how to use the electrical system to determine the origin of a fire and what to look for to help rule out (or rule in) electrical fire causations.

### **Other topics include:**

- ✓ How homes are wired and why they're wired in certain ways.
- ✓ The many ways receptacles can be wired and the implications of that wiring to fire investigation.
- ✓ What information to obtain from property owners and occupants.
- ✓ Electrical theory in an easy-to-understand format.
- ✓ Causes of electrical fires –
  - Learn why arcing occurs frequently in fires but seldom causes them and why excessive current could easily cause fires, but seldom does.
  - Gain more knowledge about floating neutrals. Perhaps you've seen floating neutral demonstrations but never really understood the concept. We'll clarify it all with some useful demonstrations.
  - Learn about high voltage and how it might be present inside a house. Learn the clues about fires that involve high voltage.
- Achieve a better understanding of high resistance (or glowing) connections. Where and why do they occur? What are the clues after a fire to help you determine if a high resistance connection was involved?
- Review case studies that illustrate all of these electrical failures and others. Learn from seeing the results of actual failures.

### **In addition, you'll:**

- ✓ Handle burned and unburned electrical components labeled and displayed to help you better understand what you're seeing.
- ✓ Practice with hands-on demonstrations built just for this seminar. Trace circuits, analyze wiring and determine what could happen electrically.
- ✓ Learn to reconstruct electrical distribution systems.
- ✓ Study many displays aimed at helping you understand how components of an electrical distribution system work and how to instantly spot electrical work that was done wrong.

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“Residential Electricity for Fire Investigators” will be held on-site at Fire Findings’ laboratory testing facility, 2026 Plaza Drive, Benton Harbor, Michigan, 49022.

*Just 40 minutes from South Bend (Indiana) or Kalamazoo (Michigan) airports and 2 hours from Chicago airports. St. Joseph/Benton Harbor is located along the southern shores of Lake Michigan — a gorgeous area to visit – and home of the 2020 Senior PGA Championships!*

Tuition is just **\$750** per person for the three-day session. MCOLES approved.

### **Who should attend 'Residential Electricity for Fire Investigators'?**

- ✓ In-the-field fire investigators.
- ✓ Fire and police department investigators.
- ✓ Those in the industry who need to expand their knowledge of electrical fire causation.

### **Why attend?**

"Residential Electricity for Fire Investigators" will broaden your understanding of electrical systems and further your ability to interpret evidence of electrical fire causation.

In addition, the knowledge you take back to the field is aimed at assisting you with determining whether electrical energy can be ruled in or out as the cause of a fire.

You'll also see dozens of practical demonstrations, all targeted to enhance your working knowledge of electrical systems.

## **Course Background**

As a participant in "Residential Electricity for Fire Investigators," you'll see and learn exactly how electrical power is supplied to a structure. To show how electrical energy is delivered from high-voltage lines to wall switches and outlets, the classroom will become a mini-electrical system, with utility poles, transformers and electrical service entrances in place and unique, simulated electrical conductors strung throughout the room.

The class will provide you with a hands-on practical experience in wiring residential systems, as you learn to trace wiring and analyze the implications of the presence (or absence) of the evidence of electrical activity in various areas of a structure's wiring.

Nearly every structure has energized electrical wiring, but few fire investigators truly understand how such systems work. You'll not only be able to see exposed wiring systems, but put common household circuits together and learn why they were (or shouldn't have been) made that way. Then use the knowledge you gain to test yourself with in-the-lab experiments. The goal of this class is to help you attain more knowledge in your quest to determine whether electrical energy can be ruled in or out as the cause of a fire.

Optional test credits toward CFI certification are also available along with continuing education credits.

## **About your instructors**

**Jack L. Sanderson** is a nationally known speaker on a wide variety of fire investigation topics. As editor of *Fire Findings*, he authored dozens of articles on electrical fire causation. He's also an instructor for our long-running, "Investigation of Gas and Electric Appliance Fires" course.

Sanderson, a certified fire investigator (CFI), has more than 30 years of in-the-field experience and brings his working knowledge as a former building inspector to this session. He has also done the electrical wiring of several residential structures. He will discuss wiring receptacles, switches and other parts of a residential electrical system along with the fire-causing implications of that wiring.

*Fire Findings'* electrical expert, **Nathan P. Dwyer, PE, CFI**, has conducted hundreds of electrical examinations at fire scenes and is intimately familiar with residential wiring and electrical fire causation. Dwyer will address how electrical fires occur and how to interpret evidence of electrical involvement.

## **Settle in and make yourself at home**

Each day starts with a deluxe continental breakfast at 8 a.m. and includes snacks and beverages anytime. Lunch is provided the third day. Classes start at 8:30 a.m. and end at 4:30 p.m. daily, except the third day when the class ends at 2 p.m. with the presentation of certificates.

# Fire Findings' lab becomes 'ELECTRICITY CENTRAL' for Residential Electricity course

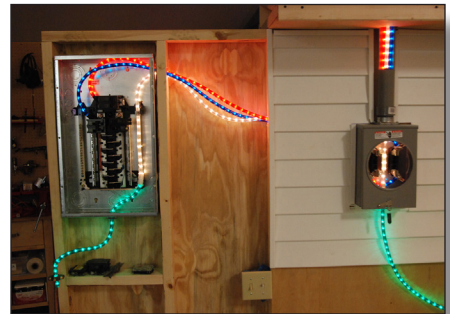


Figure 1. What would a seminar about electricity be without utility poles? Fire Findings' laboratory setting allows for full-scale and elaborate displays of a wide variety of components you encounter every day.

These are a few photos from our course, "Residential Electricity for Fire Investigators."

*Fire Findings'* founder, Jack Sanderson, and Nathan Dwyer, PE, are your instructors and spearhead the content and demonstration design work.

**Sign up early!**  
**Sessions fill quickly.**



Figures 2 and 3 (above and left). Components of the electric distribution system are displayed and controlled to provide a better understanding of the route electricity takes in its journey to your home.

Figure 4. Instructor Jack Sanderson discusses an answer to one of many test questions derived from actual fire-damaged displays





# Easy Registration for 'Residential Electricity'

Sept. 30-Oct. 2, 2020



**Fax**

*your completed enrollment and credit card or government voucher number to 269-925-2204.*



**Phone**

*for information and openings, 269-925-2200.*



**Mail**

*this completed enrollment to:  
Fire Findings LLC  
2026 Plaza Drive  
Benton Harbor, MI 49022-2212.*

On-line registration available at **www.firefindings.com**.

## Who will attend?

Name \_\_\_\_\_

Title \_\_\_\_\_

Organization \_\_\_\_\_

Street \_\_\_\_\_

City/State/ZIP \_\_\_\_\_

Ph \_\_\_\_\_ FAX \_\_\_\_\_ E-mail \_\_\_\_\_

Years of experience in fire investigation \_\_\_\_\_

Number of hours of origin/cause investigation classes \_\_\_\_\_

Brief description of your present career responsibilities \_\_\_\_\_

### ***Just one session scheduled for 2020.***

☐ Sept.30-Oct. 2, 2020

### ***How do you prefer to pay your tuition?***

☐ Check enclosed ☐ Government voucher or purchase order enclosed

*Please make payable to Fire Findings, LLC (Fed ID # is 38-3282454)*

☐ Bill my credit card (*check one*) ☐ MasterCard ☐ Visa ☐ Discover ☐ AmEx

Card # \_\_\_\_\_ Code \_\_\_\_\_ Exp. date \_\_\_\_\_  
(security code)

Cardholder name (*please print*) \_\_\_\_\_

Cardholder signature \_\_\_\_\_

### ***Hurry! Each session is limited to 45 registrants.***

For more information and seminar openings, call us at (269) 925-2200, e-mail **info@firefindings.com** or fax (269) 925-2204. **\*\*Note:** Please check seminar availability before making hotel, auto or flight arrangements.

### ***Special lodging rates are available.***

Comfort Suites, Stevensville, Michigan, (269) 428-4888, offers a special rate of \$84 per night for queen or king suites. All rooms have microwave ovens and refrigerators. Enjoy hot breakfast buffet, fitness center and spa / indoor pool. We'll email you a link for this special rate with your seminar registration confirmation, or mention Fire Findings if making a reservation by phone.

For a free visitor information packet and area maps, call the Southwestern Michigan Tourist Council at (269) 925-6301.

## ***What you get***

Your \$750 tuition to *Fire Findings'* seminar, "Residential Electricity for Fire Investigators," includes:

- ✓ 3 days of intensive, in-lab, hands-on instruction.
- ✓ Live demonstrations.
- ✓ Hands-on experience wiring basic residential wiring circuits.
- ✓ Practice tracing wiring, diagramming wiring and interpreting the implications of damage to it.
- ✓ Deluxe continental breakfast each day; snacks and beverages anytime and lunch the third day.
- ✓ Answers to your questions about electrical wiring and potential failures.
- ✓ A certificate recognizing your participation.
- ✓ Optional CFI test credits and CEUs available.