

Aging Electrical Systems and Safety

Our lives depend on the safe use of electricity in our homes, but safety doesn't just happen. Electricity continues to be a leading cause of home fires in the United States. In fact, according to the National Fire Protection Association, fires starting in electrical systems or lighting equipment damage 24,000 homes and kill 320 people each year. What some homeowners might think of as a "minor" electrical problem can lead to a dangerous or deadly fire. Your family and your home's smoke alarms may not detect an electrical fire until the home is fully engulfed, giving you less time and fewer options for escape.

Older Homes and Electrical Hazards

Older homes can have serious hidden hazards that require inspection and repair by electrical experts. That's why a recent, first-of-its-kind study from the Fire Protection Research Foundation carefully examined electrical risks and hazards present in older homes.

About the Study

The Residential Electrical System Aging Research Project was based on a thorough inspection of electrical systems and equipment in a sample of older homes across the country. This detailed assessment included a look within and "behind the walls" of each home, along with testing of key electrical system elements.

- The study closely examined electrical systems and devices from 30 homes in 10 states across the U.S.
- The majority of homes in this study ranged in age from 25 years to more than 90 years. Two of the homes were more than 100 years old.
- For each home, wiring and electrical systems, along with specific devices, were carefully inspected. After examining the homes, technicians also collected certain key electrical system elements (receptacles, service entrance panels, luminaires, junction boxes, etc.) and sent them to Underwriters Laboratories (UL) where they conducted a detailed laboratory analysis to determine how the elements performed after years of service in the field.

Findings from the Study

The results of this unique study show that the vast majority of potentially hazardous electrical conditions in these older homes were caused by:

- Failure to meet well recognized, proven safety code provisions found in the *National Electrical Code® (NEC®)*
- Failure to properly install and maintain important electrical equipment

It is important for homeowners to remember that many hazards can exist in older homes.

- Some older equipment and wiring appeared well-maintained, performing effectively and safely.
- Other older homes had dangerous electrical conditions.



HIDDEN ELECTRICAL HAZARDS

There are some simple steps homeowners can take to protect their families and homes from electrical hazards.

- Homes should be inspected by a qualified electrician who is looking specifically at the electrical system. A thorough review of the electrical system, such as that described in the NFPA 73 *Electrical Inspection Code for Existing Dwellings*, is particularly important when purchasing an older home.
- When you have electrical work done, use a professional electrician.