U.S. Consumer Product Safety Commission
LOG OF MEETING

SUBJECT: Fire research needs for electrical wiring in older buildings

DATE OF MEETING: October 10, 2002

LOG ENTRY SOURCE: William H. King, Jr., ES WHK

DATE OF LOG ENTRY: October 11, 2002

LOCATION: Room 518, Bethesda Towers

CPSC ATTENDEE(S):
William H. King, Jr., ES
Linda Edwards, ESEE
Doug Lee, ESEE

NON-CPSC ATTENDEE(S):
Rick Mulhaupt, The Fire Protection Research Foundation (FPRF)
Stephen Hanly, FPRF
John Marcario, National Electrical Manufacturers Association

SUMMARY OF MEETING: The purpose of the meeting was to explore possible research into the condition of older wiring systems in buildings.

CPSC staff presented a brief summary of recent wiring system safety activities (copy attached).

FPRF staff presented a tentative concept for a new research project entitled

OGC & GC Cleared 10-15-02 AB
No Mfrs/PrvtLblrs or Products Identified
Accepted by
Firms Notified

"Residential Electrical System Aging Research Project" (copy attached).

A second meeting, referred to as a core planning meeting by FPRF, is planned within the next several months. Invitations will be sent by FPRF to federal agencies with responsibilities that include housing.

Residential Electrical System Aging

The U.S. Consumer Product Safety Commission (CPSC), in cooperation with the U.S. Fire Administration (USFA), developed a program for identifying hazards in electrical wiring in older homes, and bringing these homes up to an acceptable level of safety at moderate expense. Electrical wiring fires are one of the leading causes of residential fires, and the fourth most frequent cause of fatal fires. It is not reasonable to expect that all existing housing stock in the United States will be brought up to compliance with the current edition of the *National Electrical Code*. This program provides a practical alternative.

For the past several years, the main focus of the CSPC effort has been directed toward publicizing the program. This on-going effort has multiple facets. CPSC distributed nationwide hundreds of copies of specially prepared videotapes demonstrating how to inspect and correct gross wiring deficiencies in older dwellings, hundreds of copies of the model inspection code for homes (NFPA 73), and hundreds of copies of CPSC print materials. The distribution included fire officials, electrical code officials, building code officials, electricians, and other interested parties. CPSC networked with fire marshals to provide new technology circuit protective devices (arc fault circuit interrupters) for state mansions. CPSC also sponsored training sessions in states with relatively high fire death rates, gave interviews for media exposure, and worked with other federal agencies to address effects of aging of electrical wiring in buildings. Widespread adoption of this program should result in a reduction in residential fires, deaths, injuries, and dollar loss.

Although much of the technical work has been successfully completed, critical decisions regarding the extent of the corrective measures needed to reduce the risk of fire remain the subject of discussion among wiring system experts. As a result, CPSC will initiate discussions with potential partners in an effort to collect and evaluate wiring system components extracted from older dwellings of various age categories. The results of such an analysis could provide definitive information with regard to the need to repair and replace wiring systems.

Residential Electrical System Aging Research Project

Tentative Concept

Background

Concern has been expressed in the electrical community regarding the aging of electrical systems in residential occupancies, possibly resulting in fires.

A question not yet fully answered is: "Why is there an electrical fire problem in the United States, even though we have such a good code?" Among the potential answers may be that electrical components, like any product, age over time. Coupled with this, residential electrical systems are seldom inspected. This project hopes to address this issue in two ways: It intends to survey the condition of representative samples of systems installed in different eras. And it intends to work with one or more Authorities Having Jurisdiction to more extensively document components and systems involved at the point of origin of harmful fires. This project will provide critical information to code writers – especially NFPA 73 and the NEC® – as well as AHJs, electrical equipment manufacturers, installers, property owners, and insurers.

Goal

Characterize the condition of various age cohorts of residential electrical systems by surveying a representative sample of actual installed systems; and document how aging may relate to residential electrical fire experience.

Scope and *M.O.*

The survey: Actual installed residential electrical system components from the service point to the outlet. Residences of various ages will be selected, tentatively organized into 10-year age cohorts, and their conditions documented in a database. Alterations and the date of alteration also will be documented.

The investigations: More detailed investigation information than is commonly collected today; e.g., a report that includes the actual or estimated age of components/system believed to be involved at a residential fire's point of origin. This will be obtained from a brief questionnaire completed by the fire investigator, or by the fire investigator and an electrical inspector together. The Foundation will collaborate with an AHJ, such as a local government or federal agency, to develop and implement the program. A database will be developed.

The data will be analyzed and technical reports published.

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