

CPS
23/5/95

**LOG OF MEETING
DIRECTORATE FOR ENGINEERING SCIENCES**

SUBJECT: Innovative Methods of Repairing Hazardous Wiring Conditions

DATE OF MEETING: March 2, 1995

PLACE OF MEETING: CPSC Engineering Laboratory, Gaithersburg, MD

LOG ENTRY SOURCE: Erlinda M. Edwards, ESEE *ed*

COMMISSION ATTENDEES:

Dennis McCoskrie, ESEE
Linda Edwards, ESEE
Larry Moskowitz, LSEL
Dick Schenck, LSEL
Ted Gordon, LSEL

NON-COMMISSION ATTENDEES:

Steve Scully, National Association of Home Builders Research Center
William L. Einwaechter, Bradley Electro Sales Corp., Columbia, MD
Mark A. Smock, Elite Raceway Systems, Solon, OH
Ray R. Keden, Elite Raceway Systems, Solon, OH

SUMMARY OF MEETING:

Dennis McCoskrie explained that the CPSC project on Home Electrical System Fires was an outgrowth of a 1987 CPSC report, Residential Electrical Distribution Fires. That report indicated that there was a correlation between the age of a dwelling and the likelihood that it would experience an electrical fire; homes over 40 years old were at greatest risk.

Mr. McCoskrie further explained that one of the reasons often given for not repairing or updating old wiring systems is that the cost is too high. To try to counter this excuse, NAHB Research Center was awarded a contract to identify cost-effective repair methods for correcting hazardous wiring conditions.

Mr. Ray Keden displayed samples of surface raceways produced by Elite Raceway Systems and which are used in France and Germany; the market for surface raceways is larger in Europe (\$500 M) than in the US (\$150 M) due to differences in building construction. He stated that the safety standards for residential wiring devices in Europe exceed those of UL, and efforts to improve US safety standards are in progress. Examples of raceway safety features cited include double insulation and inaccessibility of hot wires.



Mr. Steve Scully reported on some of the problems encountered during the electrical rehabilitation of a home in Prince George's County:

There was little opportunity to run branch circuits horizontally because there were numerous doorways and other openings. The rehabilitation project required a very high percentage of branch cables to be vertical in order to utilize existing wiring. To provide additional outlets, raceways were installed vertically through the flooring at locations where outlets were desired.

Because the home had plaster walls, electricians were reluctant to run wiring through the walls. In order to preserve existing plaster walls and baseboard moldings, it was desired to keep the wiring adjacent to the wall. A bendable raceway was really needed, but Mr. Scully was not aware of any surface raceway systems which satisfied this purpose.

Where wiring was not exposed and non-metallic (NM) cable (commonly referred to as Romex) was used, difficulties were encountered at transitions from NM to the raceway and from a raceway to a fixture. Mr. Scully asked if there were any adaptors which could have been used for such transitions. Mr. Keden demonstrated an adaptor with a bushing which could be used at the fixture to provide mechanical protection from sharp edges; no mechanical connection is required for this application.

There were problems in getting from NM cable to the raceway where there was an outlet on the other side of the wall because no adaptors were found for that transition. Mr. Keden explained that, because the raceway is a "lay-the-wire-in" system, there is no strain on the wiring during installation and, consequently, no special fittings or clamps to secure the cable are required.

Other areas which Mr. Scully said he would like to see addressed include thresholds to connect circuits across doorways as well as hold carpeting in place, and a system to connect a baseboard raceway to a mid-level switch and to an over-door light fixture.

Mr. Scully stated that all electrical rehabilitation would utilize existing, listed products. The project is not attempting to develop new products. Rather, it will attempt to deal with current products and the problems encountered in using those products. Mr. Scully added that, as a part of the rehabilitation work, NAHB is putting together a narrative guidebook of alternative solutions to electrical wiring hazards.