

LOG OF MEETING

DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: Task Group on Innovative Technology

DATE OF MEETING: October 11, 1994

PLACE: Room 410A, 4330 East West Highway, Bethesda, MD 20814

DATE OF ENTRY: December 10, 1994

SOURCE OF ENTRY: Dennis McCoskrie, ESEE *DM*

COMMISSION ATTENDEES

Bill King, ESEE
Ed Krawiec, ESEE
Dennis McCoskrie, ESEE

Larry Moskowitz, LSEL
Robert L. Northedge, ES

NON-COMMISSION ATTENDEES:

Vladi F. Basch, Baltimore Gas & Electric Co.
Edward S. Charkey, America Insurance Services Group
Robert J. Clarey, Cutler Hammer
Bob Dawley, Redtrol, Inc.
David A. Dini, Underwriters Laboratories
Robert Dunigan, National Assoc. of Electrical Distributers
Michael F. Kliene, Mintz, Levin, Cohn, Ferris, Glovsky & Popeo
Ray Legatti, Technology Research Corp.
Terry Macalady, Cooper Industries, Bussman Division
Jim Pauley, Square D Company
Robert Petty, HouseMaster of America
Saul Rosenbaum, Leviton Manufacturing Co., Inc.
Steve Scully, National Association of Home Builders Research Center
Nick Wakeman, Product Safety Letter
John Young, Siemens Energy & Automation Inc., ITE

SUMMARY OF MEETING:

Mr. King opened the meeting by introducing Robert Northedge as the new project manager for the Home Electrical Systems Fires Project and announcing that he (Bill King) was resuming the Directorship of CPSC's Electrical Engineering Division.

CPSA 6 (b)(1) Cleared

No Min/Priv/Blis or
Product Identified

Exempted by

1-27-95
[Signature]

Exempted by

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Mr. Northedge identified the principal current components of the project:

- a. Rehabilitation Methods and Costs
- b. Encouraging Adoption of NFPA-73 (Residential Electrical Maintenance Code for One- and Two-Family Dwellings),
- c. Demonstration Rehabilitations of as Many as Four Typical Older Homes
- d. Innovative Technology (The subject of this meeting)

He stated that the principal effort to discover appropriate new technology was a research contract with Underwriters Laboratories and introduced the technical officer for the contract, Ed Krawiec.

Mr. Krawiec outlined the schedule and objectives of the contract and introduced David Dini, Research Engineer of Underwriters Laboratories. Mr. Dini reviewed the UL plan for executing the CPSC contract; a copy of the transparency/outline of his presentation is attached to this meeting log.

He entertained questions after presenting this review. Mr. Legatti asked for a technical definition of the active fault that a home wiring monitor should detect. Mr. Dini mentioned that experimentation with circuit-board materials had demonstrated ignition from 15-watt arcs. Others at the meeting stated that heat sources at power levels as low as 6 watts had ignited adjacent flammable materials.

Questions were raised as to the specific fire data that identified ignition sources that might have been detected by new devices. Mr. McCoskrie replied that no new specific analyses of residential system electrical fires had been conducted by CPSC since 1987.

Mr. Krawiec commented that an important characteristic of new residential system monitors would be whether periodic testing would be performed by the user or automatically by the device itself. He also reported that current investigations of circuit-breaker performance indicated that the majority of problems occur in the electro-mechanical portion of the system.

Mr. Northedge adjourned the meeting.

**Technology for Detecting and
Monitoring Conditions that Could
Cause Electrical Wiring System Fires**

For U.S. Consumer Product Safety Commission

(CPSC-P-94-1112)

By Underwriters Laboratories Inc.

Task 1

INITIAL MEETING

Technology for Detecting and Monitoring Conditions that Could Cause Electrical
Wiring System Fires

Task 2

Literature Search

Acquire relevant information regarding current technology for indication when conditions exist that could cause fires in household electrical wiring systems.

- Technical papers
- Foreign sources
- Patents

NERAC- Information Retrieval Service

Technology for Detecting and Monitoring Conditions that Could Cause Electrical Wiring System Fires

Task 3

Search for Unpublished Information

- **Manufacturers**
- **Trade Associations**
- **Inventors**
- **Researchers**

UL Client Database

Technology for Detecting and Monitoring Conditions that Could Cause Electrical
Wiring System Fires

Task 4

Acquisition of Specimens

Samples of products that show promise will be purchased or obtained from manufacturers.

Budget - \$3000

Task 5

Analysis of Products and Technology

- Analyze technical and product literature
- Consult with developers/inventors for relevant information
- Analyze most promising products in detail
 - Safety
 - Effectiveness
 - Technology innovation

Task 5 - Analysis of products / technology

	Device No.														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Cost to Manufacture															
Ease of Installation & Maintenance															
Susceptibility to False Response															
Reliability															
Life Cycle Costs															
Efficacy															
Arc Faults															
Overheating Conductors															
On-line Arcing/Sparking															
Glowing Connections/Contacts															
Exploding Wires/Contacts															
Overheating Nonconductors															

Technology for Detecting and Monitoring Conditions that Could Cause Electrical Wiring System Fires

Task 6

Description and Assessment of Products and Technology

- Describe principle of operation
- Describe the nature of the incident that the technology addresses
- Estimate benefit of the device
 - Fire source that the device may be able to detect
 - Cost-Benefit ratio

Task 7

Log Book and Monthly Reports

- **Log Book**
 - Biweekly copies to CPSC
 - Given to CPSC at end of project
- **Monthly Reports**
 - Highlights
 - Progress reports
 - Significant developments
 - Budget reports

Task 8

Final Report

To contain reference to all material reviewed during the project, products and technologies evaluated, and people contacted.

CPSC to review draft report before finalized.

Task 9

FINAL MEETING

Technology for Detecting and Monitoring Conditions that Could Cause Electrical
Wiring System Fires

