

**U.S. Consumer Product Safety Commission
LOG OF MEETING**

SUBJECT: CPSC electrical- and fire-related activities

DATE OF MEETING: February 20, 2001

LOG ENTRY SOURCE: William H. King, Jr., ES *W.H.K.*

DATE OF LOG ENTRY: February 21, 2001

LOCATION: Capital City Chop House restaurant, Morrisville, NC

CPSC ATTENDEE(S): William H. King, Jr., ES

NON-CPSC ATTENDEE(S):

Thomas Wollan, Underwriters Laboratories Inc. (UL)
Regina Davis, UL
Dave Belt, UL
and UL attendees at the UL PE Awards Dinner

SUMMARY OF MEETING: Attached is the material presented by Mr. King at this meeting.

CPSA 6 (b)(1) Cleared
2/27/01
No Firms/Products of
Products Identified
Excepted by
Firms Notified,
Comments Processed.

OFFICE OF THE SECRETARY
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P 3:21

U.S. CONSUMER PRODUCT SAFETY COMMISSION



**Reducing Risks of Injury and Death
Associated with Consumer Products**

William H. King, Jr.

February 20, 2001

CPSC HISTORY

- Established in 1973 under the Consumer Product Safety Act
- Independent Federal regulatory agency
- Three Commissioners

CPSC - 2001

- Total Budget - \$52 million
- About 480 staff (incl. 40 engineers)
 - Headquarters 310 (Bethesda, MD)
 - Field 137
 - Laboratory 33 (Gaithersburg, MD)

PRODUCT JURISDICTION 15,000 TYPES OF PRODUCTS

Most products found in the home, EXCEPT:

- | | |
|--------------------|----------------------|
| ■ Tobacco products | ■ Aircraft |
| ■ Medical devices | ■ Firearms |
| ■ Food and drugs | ■ Pesticides |
| ■ Motor vehicles | ■ Cosmetics |
| ■ Boats | ■ Workplace products |



CPSC FUNCTIONS

- **Collect & Analyze Data**
- **Perform Applied Research**
- **Encourage Voluntary Standards**
- **Require Performance Safety Standards**
- **Require Safety Labeling**
- **Require Special Packaging**
- **Enforce regulations**
- **Recall Defective Products**
- **Ban Hazardous Products**
- **Inform Consumers**

CPSC USE OF DATA

- **Define size of problem**
 - priorities, project decisions
- **Characterize problems**
 - help design effective intervention
- **Justify regulatory action**
 - reasonably, legally
- **Support recalls**

CURRENT ELEC. PROJECTS

- Clothes Dryers
- Plastic Appliance Housings
- Range Cooking Fires
- Toaster-Ovens
- Fixed Room Heaters
- Portable Fans
- Incandescent Torchiere Lamps
- GFCIs
- Arc Fault Circuit Interrupters (AFCIs)
- Home Wiring Fire Hazards
- Battery-Operated Ride-On Toys

Contacting CPSC

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- William King
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Federal Programs for Wire System Safety

National Science & Technology Council
Committee on Technology

Wire System Safety Interagency Working Group

Background

- Gore Commission Feb 1997 - Aging Wiring in Aircraft
- FAA/NASA/DOD initiate Aging Wire Programs
- NASA Shuttle Safety Report May 2000 - Aging Wiring and Issue Beyond Aviation
- OSTP Initiates NSTC IWG May 10 - Calls for the formation of Wire System Safety Interagency Working Group Under Technology Committee
- First WSSIWG Meeting June 2- 14 Agencies
- Terms of Reference Complete
- Report to the President November 2000
- National Wire System Safety Strategy March 2001

Wire System Safety Interagency Working Group

Consumer Product Safety
Commission

Department of Commerce

Department of Defense

Office of the Secretary of Defense

United States Air Force

United States Navy

United States Army

Department of Energy

Department of Transportation

Federal Aviation Administration

Federal Railroad Administration

Federal Transit Administration

US Coast Guard

National Aeronautics and Space
Administration

National Science Foundation

Nuclear Regulatory Commission

In addition, the following organizations are
represented on the WSSIWG:

Defense Nuclear Facilities Safety Board

Office of Management and Budget

Office of Science and Technology Policy

National Partnership for Reinventing
Government

National Transportation Safety Board
(observer)

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Organization of Report

- Introduction
- Potential Wiring Safety Issues
- Current Practices
- Current Science & Technology (S&T) Initiatives
- Analysis of Current Practices and S&T Initiatives
- Conclusions & Recommendations

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Introduction

- Significance of wiring system safety
- Background on aging of wiring systems
- Scope, membership, & mission of WSSIWG

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Potential Wire Safety Issues

- Environmental Stress - Chafing, embrittlement, and corrosion
- Improper installation
- Mishandling of wiring during maintenance
- Accumulated damage as wire ages

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Current Practices

- Conformance with existing regulations, codes, and standards and revisions to them.
- Training of inspectors and mechanics.
- Inspection, assessment, and maintenance of wire.
- Engineering improvements.
- Safety investigations.
- Analysis of wire system data.
- Exchange of technical information.

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Current S&T Initiatives

- **Diagnostics:** non-destructive evaluation (NDE) techniques, inspection and detection technologies, and monitoring sensors for identifying wire system defects.
- **Failure Mechanisms:** causes and models of wire system failure and to analyze maintenance data.
- **Interconnection Technologies:** improved connectors, such as circuit breakers and in wire systems, training, management tools, and advanced distribution technologies, such as modular wiring, fiber optics, and wireless technologies.
- **New Materials:** new materials for wire system components, such as conductors and insulation including novel approaches for wire systems such as the application of microelectronic machine technology.

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Common Issues

- Faulty wiring poses a risk to public health and safety; it may lead to failure of essential functions and even to smoke and fire.
- Managing aging wire systems is expensive and time-consuming.
- Inspection, testing, and maintenance of wire systems is a technical challenge.
- Most diagnostic procedures can detect only "hard failures" that result in serious deterioration of electrical integrity.
- Our knowledge about how wire systems age and how they fail is limited.

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Common Issues

- There are limitations to our electrical codes and standards.
- Wire systems are becoming more complex with increasing computerization of operations and of information about those operations.
- Wire system maintenance is very expensive and it is difficult to get funding to address wiring issues before a system break down.
- Current practices flow from – and are limited by – the current state-of-the-art of wire systems technology in terms of design, installation, diagnosis and maintenance.

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Conclusion

Wire system safety is a national issue that transcends government agencies and is important to public health and safety.

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Recommendations

- **Four basic strategies are necessary to improve wire system safety:**
 - Altering the perception of wire systems.
 - Increasing collaboration between industry, academia, and the government.
 - Improving the management and functionality of wire systems.
 - Improving wire system technology.
- **Invest in Wire System Safety S&T**
- **Intensify collaboration between industry, academia, and the government to rapidly implement technological advances.**

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