

LOG OF MEETING

SUBJECT: Twenty-Seventh International Conference on Fire Safety

DATE OF MEETING: January 11-14, 1999

DATE OF LOG ENTRY: January 25, 1999

PERSON SUBMITTING LOG: James F. Hoebel

LOCATION: Millbrae, CA

CPSC ATTENDEE(S): James F. Hoebel, Engineering Sciences

NON-CPSC ATTENDEE(S): See attached

SUMMARY OF MEETING: The subject meeting continues to be an excellent forum for applied research in fire safety, addressing issues of furnishings, textiles, buildings, transportation, testing, and materials. An agenda is attached. Some highlights are described below.

The initial paper by Mr. Damant reviewed primarily CPSC published fire data estimates to show the current status of fires, injuries, and deaths associated with such consumer products as furnishings, textiles, and apparel. While some trends are down (cigarette ignited furniture and mattress fires), other upward trends were noted, such as cigarette ignited trash fires.

Mr. Hoebel's presentation on CPSC activities highlighted the current status of CPSC projects, including upholstered furniture, mattresses/bedding, children's sleepwear, multi-purpose lighters, smoke alarms, and candles. Many questions and discussion were stimulated relating to the furniture toxicity issue, planned studies mandated by the CPSC appropriations bill, CPSC role in mattress/bedding research studies, status of laundering amendments to Flammable Fabrics Act standards, etc.

During discussions of toxicity of fire retardants chemicals, Charles Waters noted that significant quantities of fire retardant chemicals are manufactured by "garage" outfits that are sold to casinos and elsewhere, and that these chemicals may not be adequately controlled and can be highly toxic.

Dr. Needles worried about fabrics that, when tested according to the CPSC general apparel standard, would take a relative long time to "burn through" but then the flame would spread very fast to the end of the sample.

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Dr. Yarbrough's paper noted that the cellulose insulation industry was currently concerned with corrosion and fungi resistance. He is also concerned about long-term flammability performance, although such performance is not regulated. He described one manufacturer that was telling customers that it was acceptable to install the insulation next to light fixtures.

Dr. Nelson described tests evaluating ferrocene as a flame retardant additive to polyurethanes. Better peak heat release was observed, with no attendant increase in smoke or CO production.

Dr. Needles described certain cotton or rayon lightweight loose fitting garments that pass the apparel standard but are of concern. He had a case where a garment of this type ignited, apparently by "poppers" that kids can throw to make small exploding sounds. He was unable to estimate an ignition mechanism.

Proceedings are expected to be published.

**Persons Whom You May Meet at the
Twenty-Seventh International Conference on Fire Safety**

(List prepared on January 6, 1999)

Ralph A. Anthenien, Air Force Research Laboratory
Robert Asaro, University of California, San Diego
Robert W. Bailey, Bailey Consulting Inc.
Robert H. Barker, American Fiber Manufacturers Association
R. Benrashid, Westvaco Corporation
Jeff Books, Albemarle Corporation
Bobby Bush, Hickory Springs
Loren M. Caudill, E. I. du Pont de Nemours and Company
J. Thomas Chapin, Lucent Technologies
Hugh Council, Office of the California State Fire Marshal
Jose Cordova, University of California, Berkeley
Gordon H. Damant, Inter-City Testing & Consulting Corp. of California
Ken Davis, Consultant
Roy Phillip DeMott, Milliken Research Corporation
N. Dale Dunham, San Francisco International Airport
Michael Ennis, Dow Chemical Company
Donald J. Ferm, U.S. Borax Inc.
Carlos Fernandez-Pello, University of California, Berkeley
Gladys M. Finley, Southwest Research Institute
Arthur Furst, University of San Francisco
Sanjeev Gandhi, Federal Aviation Administration
Ted Halchak, Akzo Nobel Chemicals
Carlos J. Hilado, Product Safety Corporation
Richard G. Hill, Federal Aviation Administration
Marcelo M. Hirschler, GBH International
James F. Hoebel, Consumer Product Safety Commission
James R. Hoover, E. I. du Pont de Nemours and Company
Fu-Yu Hshieh, Dow Corning Corporation
Arthur M. Ihrig, Lorillard Research
James D. Innes, Flame Retardants Associates
J. C. Jones, University of Aberdeen, U.K.
William J. Kennelly, Climax Molybdenum
David B. Kiddoo, AlphaGary Corporation
Melisa Lavery, KoSa - Avora FR
Ronald L. Markezich, Laurel/OxyChem
Stephanie Markos, National Volpe Transportation Systems Center
John A. McCormack, Calif. Bureau of Home Furnishings and Thermal Insulation
Frank McGarry, National Association of State Fire Marshals
Monty McGill, McGill Consulting and Investigation

C. Patrick McShane, Cooper Power Systems
Les Michael, California Division of Occupational Safety and Health
Joanne F. Mikami, Calif. Bureau of Home Furnishings and Thermal Insulation
Rick Mulhaupt, National Fire Protection Research Foundation
Howard L. Needles, University of California, Davis
Gordon L. Nelson, Florida Institute of Technology
Said Nurbakhsh, Calif. Bureau of Home Furnishings and Thermal Insulation
Steve Procter, Bay Area Rapid Transit District
Ray Quintanar, USDA Forest Service
Gene Rider, ITS Risk Analysis and Management
Nancy Rivera, ITS Risk Analysis and Management
Dennis Robitaille, Chestnut Ridge Foam Inc.
Constantine P. Sarkos, Federal Aviation Administration
Larry Schwartz, Raychem Corporation
Kelvin K. Shen, U.S. Borax Inc.
Linda Simmons, Hickory Springs
Marc G. Simpson, 3M Ceramic Textiles and Composites
Usman Sorathia, Naval Surface Warfare Center
Lee E. Stanford, Shook, Hardy & Bacon
Michael Stevens, Ashland Chemical Co.
Douglas Sullivan, Hickory Springs
Patricia A. Tatem, Naval Research Laboratory
Thomas Tsai, Federal Railroad Administration
King-Mon Tu, Akzo Nobel Chemicals Inc.
John P. Wagner, Texas A&M University
Edward Walton, Rockbestos-Surprenant
Charles A. Waters, International Fire Controls
David W. Yarbrough, Tennessee Technological University
Joe Ziolkowski, American Furniture Manufacturers Association

TWENTY-SEVENTH INTERNATIONAL CONFERENCE ON FIRE SAFETY

Monday, January 11, 1999

- 7:30 am Registration
- 8:15 Opening of Conference
Conference Director: Carlos J. Hilado, Product Safety Corporation
- 8:30 Introduction of participants
- Session on Fire Safety of Buildings and Contents**
- Chairman: Gordon H. Damant, Inter-City Testing and Consulting Corporation of California
- 8:45-9:15 Flammable Fabrics - The Injury and Death Toll Continues
Gordon H. Damant, Inter-City Testing and Consulting Corporation of California
- 9:15-9:45 Consumer Product Safety Commission Fire-Related Activities
James F. Hoebel, Consumer Product Safety Commission
- 9:45-10:15 California Futon Flammability Testing Update
John A. McCormack and Said Nurbakhsh
California Bureau of Home Furnishings and Thermal Insulation
- 10:15-10:30 break
- 10:30-11:00 Report of Effects of Decomposition/Offgas Products Research Advisory Council
Rick Mulhaupt, National Fire Protection Research Foundation
- 11:00-11:30 A Forced-Flow Ignition and Flame Spread Test Method for the Fire Properties of Materials
Carlos Fernandez-Pello and Jose Cordova
University of California, Berkeley
- 1:00-1:30pm A New Combustion Diagnostic for Smoldering Combustion Using Ultrasound
Ralph Anthenien, Air Force Research Laboratory
Carlos Fernandez-Pello, University of California, Berkeley
- 1:30-2:00 Developments in Test Procedures for Propensity Towards Spontaneous Heating
J. C. Jones, University of Aberdeen (U.K.)
- 2:00-2:30 Update on Activities of the National Association of State Fire Marshals
Francis A. McGarry, National Association of State Fire Marshals
- 2:30-3:00 Heat and Smoke Measurements of Construction Products Tested in a Room-Corner Configuration According to NFPA 265
Marcelo M. Hirschler, GBH International;
Marc L. Janssens, Southwest Research Institute
- 3:30-4:00 The Changing Face of Fire Investigation
Monty McGill, McGill Consulting and Investigation
- 4:00-4:30 Fires of Electrical Origin
Ken Davis, Consultant
- 4:30-5:00 Some Observations Concerning Cellulosic Smoldering and the Effect of Alkaline Metal Ions
Arthur M. Ihrig and Alexander Dyakonov, Lorillard Research

This program is subject to change.

TWENTY-SEVENTH INTERNATIONAL CONFERENCE ON FIRE SAFETY

Tuesday, January 12, 1999

7:30 am **Registration**
8:15 **Introduction of participants**
 Conference Director: Carlos J. Hilado, Product Safety Corporation

Session on Fire Safety of Buildings and Contents (continued)

Chairman: Gordon H. Damant, Inter-City Testing and Consulting Corporation of California

8:30-9:00 **Review of Cellulose Insulation Fire Safety**
 David W. Yarbrough, Tennessee Technological University

Session on Fire Safety in Transportation

Chairman: Richard G. Hill, Federal Aviation Administration

9:00-9:30 **A Review of Jet-A Flammability in Commercial Aircraft Fuel Tanks**
 Richard G. Hill, Federal Aviation Administration

9:30-10:00 **Fire Safety of Composites in the U.S. Navy**
 Usman Sorathia, Naval Surface Warfare Center

10:00-10:15 **break**

10:15-10:45 **Fire Safety of Insulated Wire in Aircraft**
 Larry Schwartz, Raychem Corporation

10:45-11:15 **Description and Experience with Implementing the BART Transit**
Vehicle Fire Safety Specifications
 Steve Procter, Bay Area Rapid Transit District

11:15-11:45 **Development of U.S. Passenger Train Fire Safety Standards**
 Thomas Tsai, Federal Railroad Administration;
 Stephanie Markos, National Volpe Transportation Systems Center

1:00-1:30pm **The Use of Fire Retardants in Aircraft and Trains**
 Charles A. Waters, International Fire Controls

1:30-2:00 **Recent Aircraft Cargo Compartment Fire Protection Tests**
 Constantine P. Sarkos, Federal Aviation Administration

2:00-2:30 **Bromine/Chlorine Synergism in Flame Retardant Plastics**
 Ronald L. Markezich, Laurel/OxyChem

2:30-3:00 **title to be announced**
 Robert Asaro, University of California, San Diego

3:00-3:30 **An Analysis of Railroad Accident Dynamics in College Station, Texas**
 Hart S. Brown and John P. Wagner, Texas A&M University

3:30-4:00 **Emergency Response to Terrorism**
 N. Dale Dunham, San Francisco International Airport

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TWENTY-SEVENTH INTERNATIONAL CONFERENCE ON FIRE SAFETY

Wednesday, January 13, 1999

7:30 am Registration
8:15 Introduction of participants
Conference Director: Carlos J. Hilado, Product Safety Corporation

Session on Methods and Materials for Increased Fire Safety

Chairman: Gordon L. Nelson, Florida Institute of Technology

8:30-9:00 Novel Flame Retardant Polyurethanes
Gordon L. Nelson, Florida Institute of Technology

9:00-9:30 An Investigation of Ignition of Thermoplastics through the Hot-Wire Ignition Test
Luiz de Araujo and John P. Wagner, Texas A&M University

9:30-10:00 Flammability Standards and Extremely Light Weight Fabrics
Howard L. Needles, University of California, Davis

10:00-10:15 break

10:15-10:45 Quantitative Analysis of Heavy Metals Emission during the Combustion and Baling of Polyvinyl Chloride Insulated Copper Wire
John P. Wagner and David P. Pickard, Texas A&M University

10:45-11:15 Full-Scale U.K. Fire Tests of LAN Data Communication Cables Used in Concealed-Space Applications: Phase III
James R. Hoover and Loren M. Caudill, E. I. du Pont de Nemours and Co.;
J. Thomas Chapin, Lucent Technologies; Arthur Willis, BICC Brand-Rex

11:15-11:45 Increasing Effectiveness of Flame Retardants and Smoke Suppressants through Combination Systems
James D. Innes and Ann M. Innes, Flame Retardants Associates

1:00-1:30pm Overview of U.S. vs. International Cable Fire Tests. Part II
Loren M. Caudill, E. I. du Pont de Nemours and Company

1:30-2:00 Single Burning Item Test vs. UL 910
J. Thomas Chapin, Lucent Technologies

2:00-2:30 Update on the Acceptance Criteria Using the White House Test
Michael Ennis, Dow Chemical Company

2:30-3:00 An Overview of the Fire Engineering Division of the California Department of Forestry and Fire Protection, Office of the State Fire Marshal
Hugh Council, Office of the State Fire Marshal ?

3:00-3:30 Concerns on Downrating Flammability Requirements on TV Cabinets
Jeff Books, Albemarle Corporation

3:30-4:00 Baseline Large Scale Fire Testing on ex-USS Shadwell for Damage Control - Automation for Reduced Manning Implementation
Patricia A. Tatem, Naval Research Laboratory

4:00-4:30 Activities of Cal/OSHA Relevant to Fire-Safe Materials
Les Michael, California Division of Occupational Safety and Health

*Use of Potential Heat
Fred Clarke*

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TWENTY-SEVENTH INTERNATIONAL CONFERENCE ON FIRE SAFETY

Thursday, January 14, 1999

- 7:30 am Registration
8:15 Introduction of participants
 Conference Director: Carlos J. Hilado, Product Safety Corporation
- Session on Methods and Materials for Increased Fire Safety (continued)**
Chairman: Gordon L. Nelson, Florida Institute of Technology
- 8:30-9:00 ~~Using the Cone Calorimeter to Study the Fire Hazard of Some Silicon Intermediates~~
 Fu-Yu Hshieh, Dow Corning Corporation
- 9:00-9:30 Recent Developments in the Use of Zinc Borate in Flexible PVC
 Donald J. Ferm, U.S. Borax Inc.
- 9:30-10:00 Testing and Certification Requirements for Shop-Fabricated Aboveground
Storage Tanks for Flammable Liquids
 Gladys M. Finley, Southwest Research Institute
- 10:00-10:15 break
- 10:15-10:45 Cone Calorimeter Study of Cyanate Esters for Aircraft Applications
 Sanjeev Gandhi, Federal Aviation Administration
- 10:45-11:15 Assessing Flammability Hazards and Preventing Burn Injuries
 Gene Rider, ITS Risk Analysis and Management
- 11:15-11:45 Introduction of the First Listing Standard for Liquid-Filled Distribution
and Power Transformers with High Fire Point Liquids
 C. Patrick McShane, Cooper Power Systems
- 1:00-1:30pm title to be announced
 Ray Quintanar, USDA Forest Service
- 1:30-2:00 A Comparison of Data from Pyrolysis Gas Toxicity Tests, Two
Continents and Twenty Years Apart
 Arthur Furst, University of San Francisco;
 Carlos J. Hilado, Product Safety Corporation

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