



# THE FIRE PROTECTION RESEARCH FOUNDATION

## Symposia

**SupDet 2009, February  
24- 27 in Orlando, FL**

*Early Registration*

*Deadline January 31*

This year's symposium will feature a workshop on clean agent suppression of energized electrical fires as well as three intensive days of the latest research and applications for suppression and detection systems. Featured presentations include keynote presentations on California's regulatory initiatives to reduce suppression agent contribution to greenhouse gas emissions and New Zealand's experience with design issues for fire protection systems in a performance based regulatory environment.

**New Strategies for  
Dust Explosion Hazard  
and Control**

*May 13, 14,  
Baltimore, MD*

This symposium will highlight updates in best industry practices for the management of the dust

## New Projects

### **Residential Sprinkler System Design Criteria for Varying Ceiling Configurations**

The Foundation has initiated a project to study the performance of residential sprinklers in home fires with a range of typical ceiling geometries to develop test methods and performance criteria with a goal to develop design guidance for reference in NFPA 13D. Phase I, which will involve a small scale test and analytical program to study factors influencing design including: ceiling slope, room volume and openings, design fire, combustibility of wall covering materials, and sprinkler system design characteristics (including operating water flow), will be complete by the end of 2009. Phase II will involve a full scale validation program with a goal to develop design guidance to relate performance criteria relative to flat ceiling performance.

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### **Reaching the U.S. Fire Service with Hydrogen Safety Information: A Roadmap for the U.S. Department of Energy**

The U.S. Department of Energy (DOE) is developing a comprehensive suite of information related to safety in the infrastructure supporting hydrogen energy sources for commercial implementation. The fire service is an important audience for this information, both as it relates to safety considerations in design and permitting of constructed facilities, and safety considerations related to incident response. The National Renewable Energy Laboratory has asked the Foundation to develop a detailed primer on the structure of the fire service in the United States, both from the fire prevention and emergency response perspectives, which describes jurisdictional boundaries, variation by type of facility, typical responsibilities, and key organizations. For several exemplar jurisdictions, specific information will be identified and compiled on the permitting process for applicable facilities, with a focus on refueling station and cell phone tower power facilities that are near the permitting stage.

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## Research Planning

### **Storage Fire Protection and Final Extinguishment**

Fire protection principles embedded in NFPA 13 involve the principals of fire control by fixed fire suppression systems and final fire extinguishment by the fire service. Today's larger and more complex warehouses present high challenges for both of these fire safety approaches. There is a need to identify reasonable boundaries for fire fighter actions, understand the gaps that remain between fixed fire protection performance and final extinguishment, and work towards solutions

explosion hazard. Keynotes from CSB, OSHA and NASFM will describe federal and state legislative initiatives; an update on the latest changes in NFPA standards will be presented. A one day seminar on dust explosion hazard prevention and control will also be offered on May 12 as an adjunct event.

Visit [our website](#) to register.

## Contact the Foundation

[epeterson@nfpa.org](mailto:epeterson@nfpa.org) for more information or to participate in Foundation programs

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that address the identified gaps. Fire fighter safety, water supply duration, storage over 30 feet, multiple row racks, the sensitivity of suppression mode sprinklers, and other matters all point to a need to reconsider this approach adopted some 50 years ago. The Foundation will hold a research planning session on this topic on January 20th in Quincy.

### **Dust Explosion Hazard Thresholds**

Recently there has been an increased awareness of the explosion hazard associated with combustible dusts. NFPA 654/A.2.2.3.1 includes criteria that have been used for determining whether an explosion hazard exists in a building compartment. There is, however, genuine concern over the technical pedigree of those criteria.

On January 12th in Atlanta, GA, the Foundation sponsored a research planning session to explore the development of a project to establish the technical basis for quantitative criteria for determining that a compartment is a “dust explosion hazard” that can be incorporated into NFPA 654 and other relevant safety codes and standards.

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[New Reports available on the Foundation's website](#)

### ***The Transition of the Hazardous Materials Codes and the Emergence of the Threshold Quantity System to NFPA 1 UFC***

This report provides information to NFPA Technical Committees on the background of the current national hazardous material classification system, focusing on threshold limits, and its technical basis. It provides an assessment of gaps and anomalies and recommendations for further studies.

### ***Intelligibility of Fire Alarm and Emergency Communication Systems***

This study addresses the efficacy of testing the intelligibility of a fire alarm or emergency communications system, by testing available design guidance and recommending methods for the performance testing of voice communication intelligibility.

### ***Thermal Capacity of Fire Fighter Protective Clothing***

This report documents research conducted to develop a better understanding of the effects of turnout materials on heat transmission and thermal energy storage in fire fighter protective clothing. It provides data to enhance test methods currently under development which will enable enhancements to [NFPA 1971, Standard on Protective Clothing Ensembles for Structural Fire Fighting](#).

### ***Marina and Boatyard Indoor Rack Storage Sprinkler Protection Literature Review***

This report presents the results of literature review, a loss history summary, and a hazard analysis for fires involving indoor rack storage of marine vessels in boatyards and marinas. The study lays out a research program to develop important design parameters such as water demand and automatic sprinkler placement for control and extinguishment of unwanted fires. This information will be provided to the Technical Committees responsible for NFPA 13 and NFPA 303.