AIChE Spring Meeting 2006

40th Loss Prevention Symposium 2006

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Orlando, Florida, USA

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Session 3 - Global Congress Joint Keynote Session
The Global Congress Keynote session recognizes AIChE's accomplishments in process safety over the past 40 years and sets the stage for the three Global Congress symposia as well as AIChE's future efforts in process safety.

Cochairs: Erdem A. Ural, PhD
           James R. Thompson
Chair: Tim Overton

Welcoming Remarks

1 Keynote Address, Process Safety in the Global Chemical Industry
   Gary Veurink

Part 1

N/A Keynote Address, Process Safety in the Global Petroleum Industry
      John Mogford
3 Expanding Role of the Loss Prevention Professional, Past, Present and Future
   John Murphy, Dennis Hendershot

Session 32 - Loss Prevention: Past, Present, and Future
An invited paper will introduce the session by highlighting the 40-year history of the Loss Prevention Symposium (LPS) and by addressing how this forum has remained on the forefront of ever-changing process safety and loss prevention technologies and practices. Papers defining the "State-of-the-Art" and illuminating where this "Art" must go in the future are invited. In addition to emphasizing life-safety issues, the LPS emphasizes the business importance of accident prevention. Papers are encouraged that discuss the long-term consequences of industrial accidents, with special emphasis on continued corporate viability and financial health, on corporate loss prevention programs, and on the ever-changing regulatory roadmap.

CoChair: Walter L. Frank
Chair: David G. Clark

15 The History of the Loss Prevention Symposia
    John A. Davenport
Session 54 - Mechanical Integrity

Mechanical integrity is a key requirement for harnessing the tremendous hazard potential created by industrial operations dealing with toxic materials or large quantities of chemical, thermal, mechanical or electrical energy. MI failure is often the initiating event that leads to major fires or explosions. This session invites papers on all aspects of mechanical integrity, including system design, consequence analysis, reliability, maintenance, and near-miss or full-blown incident experience.

CoChair: Henry L. Febo
Chair: Christopher Hanauska

50 Flexible Storage Phosphor Plate Versus Film-Based Technology for Erosion/Corrosion Profiling
Steve Mazur

60 Managing on Stream Leak Repairs
Jesse Wilson, Mark Frazier

66 Beyond Compliance – Taking Your Mechanical Integrity Program to the Next Level
Andrew Remson

80 Mechanical Integrity Best Practice for Sulphuric Acid Plants
Michael Robert Beaumont

114 An Analysis of the Gas Pipeline Explosion at Ghislenghien, Belgium
Haroun Mahgeretfeh, Olufemi Atti

Session 104 - Fire, Explosion and Reactive Hazards

The analysis, prevention and mitigation of fire, explosion and reactivity hazards continues to be important to the Loss Prevention community. This session invites papers that identify, characterize or offer design guidance on fire, explosion and reactivity hazards.
**Session 126 - Hazard Aspects of Combustion Equipment**

This session will focus on hazard aspects of various types of combustion equipment, such as fired heaters, flares, thermal oxidizers, steam boilers, waste heat boilers, and paper plant recovery boilers. Papers may be submitted on the following topics: process design for safe operation, equipment specifications for improved safety, control systems and instrumentation for improved operational safety, operating procedures and practices for safe operation, case histories of combustion equipment accidents and failures, etc.

**CoChair:** Daniel A. Crowl  
**Chair:** Stanley S. Grossel

- **225** A Proposed Comprehensive Model for Elevated Flare Flames and Plumes  
  **David Shore**

- **261** Flare Safety and Reliability Enhanced with New Flare Pilot Systems  
  **John A. Bellovich**, James C. Franklin, Robert E. Schwartz

- **269** Proper Flare Safety  
  **John Straitz III**
Session 189 - Hazards & Risks Associated With Alternate Energy Systems

The commercialization of alternative energy systems is becoming increasingly important to the Loss Prevention community as they introduce new hazards and risks that we must address. Systems involving renewable energy sources, fuel cells, compressed natural gas, liquefied natural gas, liquefied petroleum gas, hydrogen, atomic energy and other relatively new technologies will compete with the traditional energy sources, coal, oil and water. In paving the way for complete commercialization of these newer technologies, an understanding of the hazards and risks must be developed. This session invites new research, tools and methods that identify, characterize, and manage the hazards and risks associated with the design and operation of alternative energy systems.

CoChair: Cheryl A. Grounds
Chair: Brian R. Dunbobbin

337 The Hazards and Risks of Hydrogen
Daniel A. Crowl, Young-Do Jo

350 Safety Considerations for Interfacing Hydrogen with the Public for Vehicles
Jim Hansel, Peter Steiner, David Farese

358 Hazards and Hazard Mitigation Techniques for Natural Gas and Hydrogen Refuelling Operations
Carl Harold Rivkin

Break

372 LNG and Safety Concerns
Jean Paul LaCoursiere

384 Risk Analysis of Hydrogen Gas Transmission Using Natural Gas Infrastructure
Young-Do Jo, Daniel A. Crowl, Kyoshik Park
Session 213 - Case Histories and Lessons Learned

Reviews of Process Safety Incidents and near misses provide valuable learning opportunities. Papers dealing with incidents, near misses and the lessons learned are requested.

CoChair: Robert P. Benedetti
Chair: John F. Murphy

405 A Case Study of a TFE Explosion in a PTFE Manufacturing Facility
Erik Christiansen, Ali Reza

418 Flammable Liquid Process Tank Fire
James R. Reppermund

425 Fired Heater Damage Following Outage Due to Management of Change Problems
Donald K. Lorenzo, Randal L. Montgomery, Lee N. Vanden Heuvel

Session 230 - Joint Case Histories and Lessons Learned

Joint Case Histories and Lessons Learned

433 Bp Texas City: March 23rd 2005
Don Holmsrom, Mark Kaszniak

444 Bp Amoco Texas City Incident
Michael P. Broadribb

464 The Accident in Bhopal: Observations 20 Years Later
Ronald J. Willey, Dennis Hendershot, Scott Berger

Conclusion Remarks

Session 244 - Handling of Ultra-Fine Powders and Prevention of Dust Explosions
(From the 5th World Congress on Particle Technology)

Recent dust explosions at West Pharmaceuticals and CTA Acoustics, both in the US have tragically demonstrated the importance of proper design and operation to dry-end process safety. The trend towards development and manufacture of finer combustible powders in many industries can be expected to
increase this risk significantly. This session is seeking submissions related to all aspects of dust explosions from both theoretical and practical perspectives, including key learnings from incident investigations. Papers regarding the reactive hazards associated with preparation and handling of ultra-fine powders, such as self-heating behavior and pyrophoricity, are also welcome including those that address the areas related to electrostatic charging, suppression, inerting, venting and house keeping practices of the unit operations.

CoChair: Konanur Manjunath
Chair: Bob Gravell

479 Development and Design of Handling Technology for Highly Explosible Powders
   Peter W. Wypych

487 Reducing Dust Emission from Grain Handling Ship Loaders
   Craig Wheeler, Alan Roberts, Tobias Krull, Stephen Wiche

498 Theory and Practice of Dust Collector Protection
   John E. Going, Tony Lombardo

517 Prevention of Dryer Fires: Problem Analysis & Application of Results
   Emre Ergun, Joseph Senecal

528 Surfactants: Do They Work for Suppression of Dust in Iron Ore Plants?
   S. Komar Kawatara, C Copeland

547 Explosible Dusts, US Codes and Standards of Safe Management Practices
   David E. Kaelin, Richard Prugh