Ethanol Tank Fire Fighting

Facing challenges to broad ethanol introduction

Workshop, Kansas City, Nov 1 2011

Honorary sponsors
Workshop agenda

09:00  Registration and Continental Breakfast

10:00  Welcome and Introduction
      Chief Richard R. Carrizzo, Southern Platte Fire Protection District
      Henry Persson, SP Technical Research institute of Sweden, Fire Technology (SP)

10:30  LASTFIRE - Success Story and Lessons Learned
      Niall Ramsden, Resource Protection International (RPI), UK

10:50  Tank Fire Fighting Research
      Bob Benedetti, National Fire Protection Association (NFPA), USA
Workshop agenda, cont

11:00  Previous Work & Knowledge Gaps
      Henry Persson and Francine Amon, SP
      Regulatory Framework
      Niall Ramsden, RPI

12:15  Light Lunch

13:00  ETANKFIRE-project
      Henry Persson, SP, Niall Ramsden, RPI

13:45  Breakout Discussions and Coffee Break

14:45  Summary and Next Steps

15:30  Close
SP Technical Research Institute of Sweden

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SP Technical Research Institute of Sweden is a leading international research institute. We work closely with our customers to create value, delivering high-quality input in all parts of the innovation chain, and thus playing an important part in assisting the competitiveness of industry and its evolution towards sustainable development.
SP Fire Technology

Leading fire laboratory in Europe
70 Employees
50 % Testing, 50% Research
About 50 % of funding from abroad
Fire Technology activities

Testing and research in the areas of

- Fire resistance
- Reaction to fire
- Fire protection
The 5th International Symposium on Tunnel Safety and Security

New York, USA, 14th – 16th March, 2012

FIVE – Fires In Vehicles
2nd International conference
Chicago Sept 27th-28th, 2012

LIGHT WEIGHT MARINE STRUCTURES
Gothenburg, Sweden,
28th – 29th March, 2012
SP Fuel Storage Safety

An international Center of Expertise for fire safety during storage and handling of liquid fuels, solid biofuels and recycling of waste material involving research, innovation and knowledge transfer.
Testing and research on fire fighting foams

Foam testing

- EN1568
- ISO 7203
- IMO
- ICAO
- etc

Foam research

- Test method development
- Applied research
- Fundamental understanding

Calculated
Experiment

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Why do we need ETANKFIRE?

- Handling and storage volumes of ethanol are increasing

- Ensure adequate investments in ethanol fire protection
  - Different properties compared to petroleum products
  - Lack of specific fire protection recommendations
  - Limited practical experience from tank fires
Ethanol Tank Fires
Operational RM Issues

Per Brännström
Fuel stations providing renewable fuels

Development of service stations and proportion of renewable fuels (ethanol)

- **Ovriga**
- **RME**
- **Fordonsgas**
- **E85**

2003                                                                  2010
Ethanol production in US 1980-2010

Estimate for 2022 36 Billion Gall

Historic U.S. Fuel Ethanol Production

Source: Renewable Fuels Association, January 2011

13,000 (Estimated for 2010)
Operational Risk Management Issues

Is Ethanol more likely to cause a major incident scenario compared to Gasoline?

➢ Need for fixed cooling systems to avoid escalation due to flammability properties and increased heat radiation?
Operational Risk Management Issues

- Need to complement our existing mutual aid system?
- Change equipment and tactics for successful fire fighting of ethanol tank fires?

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