



INTERNATIONAL PIPELINE CONFERENCE 2004

October 4 - 8, 2004

The Hyatt Regency & The Telus Convention Centre
Calgary, Alberta, Canada





SPECIAL PANEL FORUM

Challenges of Hydrogen Pipeline Transmission

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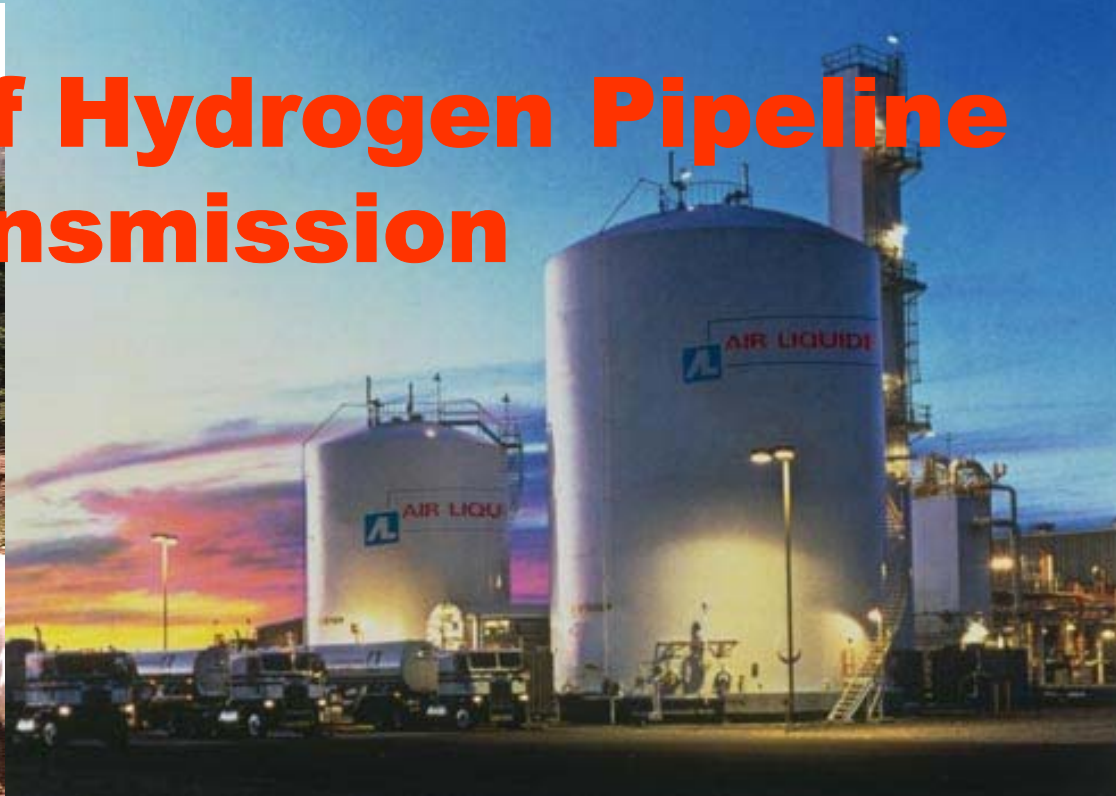


Air Products & Chemicals, Inc.



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Challenges of Hydrogen Pipeline Transmission



Challenges of Hydrogen Pipeline Transmission

- Pipeline transmission of gaseous hydrogen has taken a prominent worldwide
- Hydrogen must be safely and efficiently moved from source of supply to the point of use
- Pipelines represent an optimum method for transportation of hydrogen, at large scale over long distance.
- Pipeline transmission of hydrogen dates back to late 1930
- Current world experience is about 3000 Km up to 12" in diameters, API X65
- Challenges face the pipeline industry for high pressure H₂ gas transmission.
- Long-distance pipeline transmission of liquid hydrogen (LH₂) is also under consideration.

This novel Panel Discussion aims to bring the Pipeline Industry up to date about the challenges and the initiatives underway for production, transmission, storage and distribution of this future fuel, hydrogen.



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Challenges of Hydrogen Pipeline Transmission

Forum Cochairmen: Bill Leighty, Director, Alaska Applied Sciences, Inc. (AASI)
John Koehr, Director, Codes and Standards Technology
Institute, ASME
Dr Mo. Mohitpour, President Tempsys Pipeline Solutions Inc

Moderator: Louis E Hayden ASME Chairman H2 Code Committee



Panel Participants and Topics of Presentations: AM

Louis E. Hayden Jr. PE.. Bethlehem PA, USA. “ASME Hydrogen Pipeline Codes and Standards for the Hydrogen Infrastructure”.

John J. Koehr, Director, ASME Codes and Standards Technology Institute. “Research and ASME Codes in Support of The Emerging Hydrogen Infrastructure

Thomas Joseph, Air Products and Chemicals Inc. Allentown PA, USA “Below Grade Storage and Distribution of Hydrogen”

Jim Campbell. P.Eng Manager, Pipeline Construction Air Liquide Process & Construction, Houston, Texas, " Conversion of Existing Hydrocarbon Pipelines for Hydrogen Service"



Panel Participants and Topics of Presentations:PM

Gopala Kirshna Vinjamuri, US Department of Transportation (DOT), Research and Special Program Administration, Washington DC. “**Development of DOT Regulations for Hydrogen Transportation Systems**”

Onno Florisson Gasunie Research, N.V. Nederlandse Gasunie, The Netherlands “**Investigations of the conditions under which the existing natural gas system can be used for hydrogen-natural gas mixtures (NATURALHY-project)”** The EU “NaturalHy” project

Bill Leighty, Director, The Leighty Foundation (TLF) & Principal, Alaska Applied Sciences, Inc. (AASI), Juneau, Alaska “**Renewable-hydrogen service for large gaseous hydrogen transmission pipelines”**

Chris San Marchi, Brian P. Somerday and Steve Robinson, Gas Transfer Systems and H-Gear Sandia National Laboratories Livermore CA, USA” **Hydrogen Pipelines and Material Compatibility Research at Sandia”**

Matt Ringer National Renewable Energy Laboratory (NREL) Golden, Colorado USA. “**Analysis of Hydrogen Pipelines and other Hydrogen Storage and Delivery Systems**”

Gary Stephen, TransCanada PipeLines Ltd. Calgary, Canada. “**Composite Reinforced Line Pipe-CRLP for Hydrogen Transportation**”

Dr O’Hashi, General Manager, Nippon Steel Corporation, Energy Eng. Division, and Professor M. Hirata, Shibaura Institute of Technology, Tokyo, “**Potential Hydrogen Capability for the Proposed Northeast Asia Natural Gas Pipeline Network**”



Round Table Discussion

3:50 PM

- **Participants:**
 - **Panelists + Attendees**
- **Wrap up**
 - **Moderator Summation**
 - **Forum Outcome**
 - **Future Events**



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