




Permitting Hydrogen Fueling Stations and Hydrogen Fuel Cells for Backup Power at Wireless Telecommunication Facilities

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DOE/NASFM Workshop
Teaneck, NJ
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DOE Hydrogen Safety, Codes and Standards Program Objectives

- Establish requirements for hydrogen codes and standards based on scientific data, modeling, and analysis
- Implement consensus national agenda on domestic and international codes and standards for hydrogen systems in commercial, residential, and transportation applications
- Facilitate permitting of retail hydrogen fueling stations and fuel cell installations for backup power in the US through education and outreach to state/local code officials
 - priority for FreedomCAR and Fuel Partnership and Hydrogen Technical Advisory Committee
 - need efficient, cost-effective permitting process based on collaboration among code officials, industry, and other key stakeholders



Background: HFS Permitting Workshop (Sacramento, February 1, 2007)


- Invited fire/building code officials, HFS developers from states where HFS located or likely to be located
- Perspectives of hydrogen fueling station (HFS) developers and code officials on permitting experience (case studies)
 - Shared lessons learned
 - Shell Benning Road HFS (Washington, DC, Office of Fire Marshall)
 - NextEnergy energy station (Michigan Dept. Environmental Quality)
 - Chevron AC Transit HFS (Oakland Fire Prevention Bureau)
- Key issues and barriers to timely and cost-effective permitting of HFS identified
- Recommendations to DOE on how it can facilitate permitting process for HFS
- Feedback on proposed DOE initiative

Slide 3


Jonathan4 Jim, can we add a second workshop slide

Jonathan Munetz, 3/6/2008


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 **Background: HFS Permitting**

- Key Recommendations to DOE
 - Develop Information Repository for HFS with validated, "3rd party" data and information
 - Identify applicable codes & standards (specific safety requirements) and make them more accessible to permitting officials
 - Develop detailed Process Flowchart for permitting HFS
 - Develop Template for code officials to navigate permitting process
 - Note best practices for application of codes and standards for HFS
 - Develop fact sheets on hydrogen technologies/HFS equipment for permitting officials
 - Develop permitting pathway from "behind the fence" stations to retail stations
- Proceedings/presentations posted on NHA website (www.hydrogenandfuelcellsafety.info)

 **Permitting H2 Fueling Stations and Fuel Cell Installations: DOE Initiative**

- Information Toolkit
 - Fact sheet(s)
 - basic information on hydrogen and FC installations (examples, codes/standards typically used, information sources)
 - Network chart
 - contact list of code officials whose jurisdictions have issued permits for hydrogen and FC installations
 - Flowchart of permitting requirements
 - web-based map to "navigate" requirements with database of key standards and codes
 - Permitting Compendium
 - web-based information source and database
- Education-outreach workshops for code officials
 - National workshops with NASFM and NCSBCS (planned)
 - vet case studies, C&S permitting process, information tools
 - Workshops in key regions
 - locations where industry will focus H₂ infrastructure development and hydrogen vehicle and fuel cell deployment

 **DOE/NASFM/CFPI Workshop**

- Objectives
 - Invite key fire and building code officials
 - present case studies
 - H2 stations and fuel cell installations permitted/permitting underway
 - codes/standards applied
 - review and discussion by permitting officials of case studies
 - recommendations to DOE on facilitating permitting process
 - Show information repository concept
 - web-based tools to "navigate" requirements with database of key standards and codes
 - recommendations to DOE on initiative and other steps
- Acknowledgements
 - NASFM, Shell, GM, Sprint, Plug Power, ReliOn, Idatech, Black and Veatch
 - Bob Davidson, Sal DiCristina, Ken Kraus, Jim Narva, Chrishawn Morgan-Price, Allison Crowley

Slide 7

Jonathan2 Jim could you please update this slide

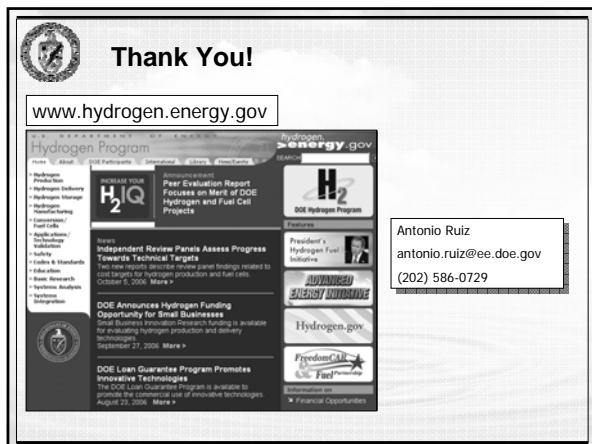
Jonathan Munetz, 3/6/2008

Slide 12

Jonathan3 Jim, could you please update this slide

Jonathan Munetz, 3/6/2008

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