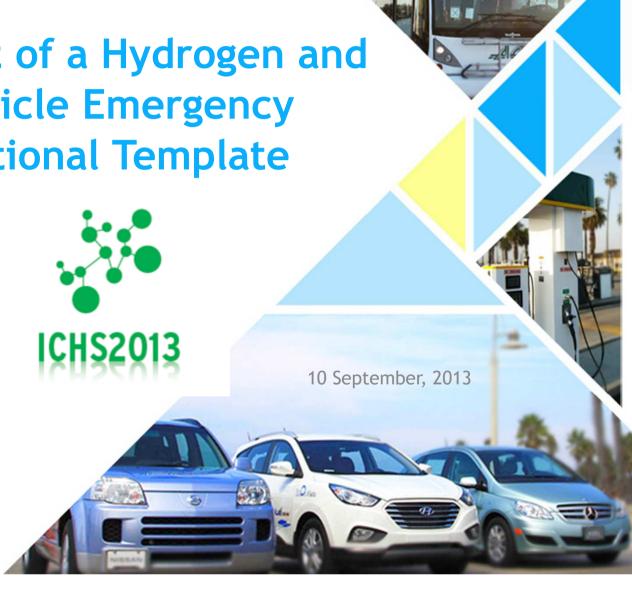
Development of a Hydrogen and **Fuel Cell Vehicle Emergency Response National Template**

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Background

- Lack of education for first responders on hydrogen and fuel cell vehicles
- Members of CaFCP recognized need & developed program for California
- Other programs in other regions followed
- Intention has always been to pass along material/information
- Timing was never appropriate
- Until now....

CaFCP ER Program

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- Developed in 2002
- Overhauled in 2006
- Updated regularly
- Added permitting education in 2008
- Deployed to over 5,600 first responders and permitting officials
- Contributed to the DOE's program curriculum
 - Assist with the deployment and delivery
 - » Reached over 25,500 (online and operations programs)

Recognized need for a National Program

- Annual Merit Review, May 2012
- Realized various & similar first responder programs
- Increase in training requests
- Developed the concept for a nationally available 'template'/program
- Planted the idea with DOE staff then
 - » Cultured the idea
- Stakeholder in-person meeting at 2013 AMR
 - Follow up meeting with PNNL (developed the existing DOE ER prop program)
 - Sot the National Program into their Operating Plan (pending approval)
- Here we are!

Review of existing programs

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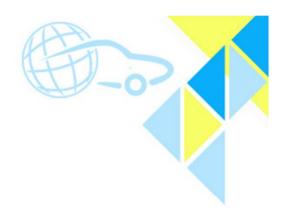
- Attended/reviewed
- Spoke with individuals
- Online information
- Examples of positive elements in existing programs to include in the 'template':
 - » online, self-paced access to information
 - * the ability to broadly disseminate information
 - » smart phone apps allowing for quick access to essential information
 - » quality illustrations/graphics

Program content

- Based largely on existing programs
- Consistent, vetted content and messaging on:
 - » Hydrogen
 - » Vehicles
 - » Infrastructure
 - » Safety
 - » Deployment
- Provide resources
 - » Slides
 - » Links
 - » Videos



Basic content outline



- A. Introduction to hydrogen
 - Properties, uses, safety
- B. Fuel Cells
 - » How a fuel cell works
 - » FC applications (brief overview)
 - Stationary, industrial truck, back up power
- C. Fuel Cell Electric Vehicles
 - How they work, compare to other vehicles, fuel storage, emergency response (scenarios), extrication suggestions
- D. Fueling stations
 - Various elements, safety features, how it works, emergency response

Example scenarios

- Vehicle submersion
- Single vehicle fire
- Multi-vehicle collision (various kinds of light and heavy duty vehicles)
- Above ground parking garage incident
- Station fire incident

Overarching message

- Over all goal of the program:
 - Balance the amount of information given
 - » Participants conclude:
 - Not 'bombs' ☺
 - No more dangerous than current vehicles; many similarities
 - Can incorporate a FCV into and follow their SOP/SOG's

In addition to class room...









Status

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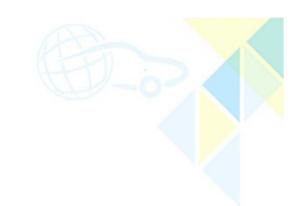
- Working to put together content
- Present a 'straw man' to the stakeholders
- Speaking to potential users/implementers
 - » NFPA (June, 2014)
 - » National Fire Academy
 - » CA Office of Emergency Services
 - » CA Office of the State Fire Marshal











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