

NHA Activities in Codes and Standards

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NHA Membership

- Over 60 Members
- Diverse Membership
 - Large Companies
 - Small Businesses
 - Universities, Institutes, National Labs
- Dedicated to commercializing hydrogen-related energy systems

NHA Focus

- Hydrogen Implementation Plan
- Hydrogen Codes and Standards
- Outreach
 - Annual Meeting
 - NHA News and H2 Digest
 - Education of Policy Makers
 - Attendance at Other Energy Meetings

Barriers

- Outreach
- Codes and Standards
 - three ongoing efforts in ISO
 - Dispensing Stations
 - Connectors
 - Storage
 - Ten New Items Being Considered including aircraft and maritime -Two or More of These Items will be Selected

NHA C&S Process

- Poll membership for Hydrogen C&S Issues perceived as a need in the 2-5 year time-frame
- Identify other entities which may be stakeholders
- Rank C&S issues based on highest need, interest from members, and requiring NHA lead or coordination
- Based on funding, work on those items with the highest ranking
- Utilize support from members, other C&S organizations, and other identified experts to develop a draft document
- Advance the draft through a larger standard organization, such as NFPA, ISO, etc.

C&S Items Under Consideration

- 1. C&S for the use of electrolyzers and fuel cells at customer sites, including homes.
- 2. C&S on self-service of H₂ vehicles.
- 3. Restrictions on servicing and storing vehicles indoors under existing C&S.
- 4. C&S for hydrogen hookup and use for home heating and power generation.
- 5. C&S for safe self-service refueling of vehicles with H₂.
- 6. Certification program for hydrogen vehicle fuel systems. (work with SAE)
- 7. Development of in-place testing and certification of H₂ tanks in vehicles.
- 8. C&S for maritime unique applications of hydrogen (identify unique applications).
- 9. C&S for subsonic aircraft.
- 10. C&S for small scale transportable fuel cells as battery replacement/portable generation.

Results to Date

- Two clear winners:
 - 1. C&S for the use of electrolyzers and fuel cells at customer sites, including homes.
 - 5. C&S for safe self-service refueling of vehicles with H₂.
- Three others in a close call:
 - 6. Certification program for hydrogen vehicle fuel systems.
 - 7. Development of in-place testing and certification of H₂ tanks in vehicles.
 - 8. C&S for maritime unique applications of hydrogen (identify unique applications).

Next Steps

- Fill Working Group Committees for two top choices
- Choose Chairmen
- Hold C&S Workshop and begin working on draft document
- Determine interest in forming committees for remaining three close items.
- Begin working groups and choose chairmen as funding and interest allow

ISO/TC-197 Meetings

- The NHA is honored to be hosting the ISO/TC-197 Plenary and several working group meetings this week at the Sheraton Premiere, in Tysons Corner, VA..
- WG 7 - Safety - all day today
- Plenary Session - 9am - 6pm tomorrow
- WG 6 - Tanks - 2:30 - 6:30 pm Thursday