

Hydrogen Refueling Station Interface Confirmation Rulemaking

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Problem Statement

- Light duty hydrogen fuel cell electric vehicles (FCEV) storage systems are designed to be filled using a specific fueling protocol
- Fueling stations which have the ability to fill publicly owned light duty hydrogen vehicles, “retail stations” must conform to this fueling protocol
- No requirement exists for public fueling to use the fueling protocol

Solution Options

Existing Activity:

CEC grant is the only economically practical means to install and operate a public hydrogen station, since grant requires compliance to the protocol. HyStEP device operated by CARB validates conformance for CEC awarded stations.

Proposed Solutions:

1. Require the listing and labeling of all public fueling stations in the CA fire code.
2. Establish a rule under CARB that establishes a process for enforcement of the fueling protocol.

Issues with Solution #1:

- The fire code is inconsistently applied in each jurisdiction and places excessive burden on local authorities
- Therefore, CARB has been investigating the testing of stations through the use of HyStEP

What are the options for CARB to achieve this objective?

1. OEMs operate a certification program for stations.
2. CARB to develop and operate multiple HyStEP systems in a state certification program.
3. Develop a registered test agency process administrated by CARB, similar to CDFA DMA Registered Service Agent (RSA) for fuel meter measurement confirmation.

Option 1

LDV OEMs who offer FCEV in the CA marketplace could establish a process for certification of public hydrogen stations. A certificate and mark could be provided by these OEMs, either as a group or individually to guide users. This is similar to EV charging connectors and adapters.

>> This approach is inconsistent with OEMs future business plan, and also conflicts with existing certification or attestation processes for other industries.

Option 2

OEMs and Station providers feel that the HyStEP process does not align with vision for a commercial process, either in the state of CA nor nationwide. A complete in-house HyStEP process involves challenges with scale-up (resources), and would inhibit development industry commercial processes.

Option 3

Request

Recommend CARB develop and operate a process for registration of testing companies (e.g. registered testing agent). Registration with CARB will mean that the agent has proven the ability to perform CSA HGV 4.3 testing. Testing agencies provide a mark or label which shows both the 3rd party approval of a dispenser AND the CARB registration. Allow other states to use CA registration as a process for certification of agents in other states.

Note: This process for review may include OEMs, similar to the current HyStEP process.

Strawman Example of the process:

- Rulemaking by CARB –
 - Legal obligation for public retail stations to conform to HGV 4.3 and must be certified and marked/labeled as compliant.
 - Establishes registered testing agency program and process for certification of test agencies
 - Establishes an audit process and recertification process for this program
- CARB validates a testing agent using the HyStEP device and HyStEP testing experience
- Testing agent is a Nationally Recognized Testing Laboratory (NRTL)
 - NRTL certification ensures that a test agent is capable of documentation process, obligations for fair treatment, liability and expansion to national cover national scope. Minimum criteria for business operations as a 3rd party certification testing agent

Strawman Example of the process (cont'd)

- Testing agent provides a mark or label on the dispenser, For example – “This dispenser is certified to conform to the requirements of ANSI/CSA HGV 4.3-2016 by CSA Group, a registered testing agent of the California Air Resources Board”
- CARB develops the explanation of the process for compliance to the rulemaking which will guide the industry for establishing this system

Open Items

- Need to define “what does it mean to test?”
- A minimum for ‘field check’ of any station, including type approved stations
- A minimum for ‘field check’ of any station at periodic intervals
- Ability of a test agency to complete the full battery of tests from HGV 4.3 in the field
- A minimum ... factory acceptance test
- A minimum ... field changes
- Define the required criteria / process metrics that need to be met (not optional)
- Consider consecutive fueling test (factory or field)

Summary Approach

Rule Making / Regulation

- Sets authority over retail public H2 stations
- Requires conformance to SAE J2601 and related standards
- Defines requirement for dispenser label in accordance with CSA HGV 4.3 by a 3rd party test company registered by CARB (i.e. RSA)
- Sets authority to define 3rd party registered test service agent (RSA)
- Sets periodic audit process
- Sets enforcement provisions
- Assumes 3-year cycle for revision to the rule making

Implementation Process

- Expands role and scope of the existing CARB HyStEP team
- Defines engagement by stakeholders (OEMs, Station Developers, Equipment Providers)
- Creates new procedure document that is possible for revision on as-needed basis by HyStEP
- Procedure document outlines process for:
 - “Type approval” like review and approval of 3rd party test company to achieve registration (RSA), using HyStEP device or similar process
 - Requirements for audit and review, factory and site tests
 - Interpretation of result, report content, pass/fail criteria
- Makes available test report to OEMs