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Automotive Fuel Cell Cooperation

Daimler  
GM  
Honda  
Hyundai  
Nissan  
Toyota  
Volkswagen

Cal/EPA Air Resources Board  
California Energy Commission  
Office of Governor Edmund G. Brown Jr.  
South Coast AQMD  
U.S. Department of Energy  
U.S. Environmental Protection Agency

Air Liquide  
BAE Systems  
Ballard Power Systems  
FirstElement Fuel, Inc.  
H2 Logic  
Hydrogenics  
HydrogNXT  
ITM Power  
Linde North America, Inc.  
Southern California Gas Company

AC Transit  
Bay Area Air Quality Management District  
CA Dept of Food and Agriculture  
Cal State LA  
CALSTART  
CEERT  
CTE  
Energy Independence Now  
NREL  
Sandia National Laboratories  
SunLine Transit Agency  
University of California, Berkeley  
UC Irvine-NFCRC  
UC Davis-ITS

May 24, 2016

Mahesh Albuquerque  
Chair, NCWM Specifications and Tolerances Committee Director,  
CDLE-Oil and Public Safety  
633 17th Street, Suite 500  
Denver, CO 80202

Don Onwiler, Executive Director  
National Conference on Weights and Measures  
1135 M Street, Suite 110  
Lincoln, NE 68508

Dear Mr. Albuquerque and Mr. Onwiler:

Re: NCWM S&T Item 339-2 Table T.2. Accuracy Classes and  
Tolerances for Hydrogen Gas-Measuring Devices

The members of the California Fuel Cell Partnership (CaFCP) supports the proposal put forth by the Department of Food and Agriculture, Division of Measurement Standards (CDFA, DMS) to modify/amend Section 3.39. Hydrogen Gas-Measuring Devices - Tentative Code in the National Institute of Standards and Technology (NIST) Handbook 44 (HB 44), Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices by adopting California's expanded accuracy classes for retail gaseous hydrogen fuel dispensers.

Specifically, this proposal will add three Accuracy Classes: 3.0, 5.0, and 10.0. This will expand the acceptance and maintenance tolerances since current hydrogen gas-measuring devices cannot comply with the tolerances listed in Table T.2 of this code. In addition, this proposal limits the timeframe of applying these expanded tolerances based upon the device's accuracy class.

California is the initial location for deployment of hydrogen fuel cell vehicles and infrastructure for the U.S., per the Zero Emission Vehicle (ZEV) Regulation<sup>i</sup>. To support this commercial rollout the California Governor's Office developed a ZEV Action Plan<sup>ii</sup> which specifically directs the state to:

*"Enact necessary legislation, regulations, standards or certifications to enable hydrogen to be sold commercially on per kilogram basis ...Investigate possible interim solutions in advance of permanent regulatory changes, including temporary site certification and relaxing accuracy requirements for hydrogen dispensers."*

To address this need for additional short term accuracy classes and fulfill the governor's edict, proposals for hydrogen gas measuring devices were filed with the Secretary of State and were effective as of June 16, 2014.<sup>iii</sup>

While the CDFA, DMS promulgated regulations to facilitate the commercialization of hydrogen fuel for California, the same actions are needed for the rest of the U.S.

On October 24, 2013, the governors of eight states signed a memorandum of understanding (MOU) committing to coordinated action to ensure the successful implementation of their state zero-emission vehicle (ZEV) programs<sup>iv</sup>.

As stated in a recent U.S. Department of Energy Request for Information: High-Accuracy Hydrogen Meters (DE-FOA-0000753, MODIFICATION 001, August 29, 2012): *"In order to enable the commercialization of hydrogen, fueling equipment that meets measurement standards must be available to sell hydrogen fuel to the public by weight or volume. Based on available information, no commercially available devices are capable of meeting the National Institute of Standards and Technology's (NIST's) Handbook 44 measurement accuracy requirements for hydrogen while being used under fueling conditions...."*

The members of the CaFCP believe that it is imperative that the U.S. National Work Group for the Development of Commercial Hydrogen Measurement Standards support this proposal and NCWM act now to adopt these additional Accuracy Classes and respective expanded tolerances so that existing hydrogen gas-measuring devices may be approved for commercial service throughout the U.S. and in preparation for the next deployment of retail hydrogen fueling stations.

Sincerely,



William T. Elrick, II  
Executive Director, CaFCP

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<sup>i</sup> <http://www.arb.ca.gov/msprog/zevprog/zevprog.htm>

<sup>ii</sup> [https://www.opr.ca.gov/docs/Governor's Office ZEV Action Plan \(02-13\).pdf](https://www.opr.ca.gov/docs/Governor's%20Office%20ZEV%20Action%20Plan%20(02-13).pdf)

<sup>iii</sup> <https://www.cdfa.ca.gov/dms/regulations.html>

<sup>iv</sup> <http://www.zevstates.us/>