HONDA

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Jason Gordon
Emissions Compliance, Automotive Regulations and Science Division
California Air Resources Board
9528 Telstar Avenue
El Monte, California 91731

**Re: CARB Proposed 2018 Improvements to Vapor Recovery Nozzle and Vehicle Fill Pipe Specifications**

Dear Mr. Gordon:

Over the past several years, Honda has been working cooperatively with CARB ECARS and MLD to help improve the Vehicle Fill Pipe Specifications as well as the GDF overpressure issues. It is mutually apparent that improvements are necessary to the existing Specifications for Fill Pipes and Opening of 2015 and Subsequent Model Motor Vehicle Fuel Tanks adopted in March 22, 2012. Honda appreciates CARB's effort to improve the situation and also actively including industry.

Honda has also been working closely in the SAE Refueling Taskforce and the Fuel Systems Subcommittee to improve the Vehicle Fuel Fill Pipe Specifications. Honda agrees and supports comments provided but SAE, Global Automakers, and Auto Alliance. Honda would like to provide additional recommendations to CARB's proposed 2018 improvements to the Vehicle Fill Pipe Specifications for your consideration:

VI.A.a. Bench Leak Rate

CARB is proposing the maximum allowable leak rate of 2.5 SLPM. CARB has not adequately explained why a required of 2.5 SLPM is necessary. OEM's have provided data of 4 SLPM (equivalent to 2.5mm orifice) is sufficient to achieve a 0.5 V/L ratio which would avoid GDF over pressure. Honda recommends that a 4 SLPM requirement be implemented.

VI.A.a.ii. Pipe axis angle

CARB has proposed the pipe axis angle with respect to horizontal shall be 30 +/- 2 degrees. The ISO13331 3.5 requirement of nozzle angle not less than 30 degrees cannot be achieved if applying CARB's proposed allowable pipe axis angle of between 28 and 30 degrees. Honda proposes that either nozzle angle of not less than 30 degrees with the horizontal plan or allow a pipe angle that represents one of the models the fill pipe head is applied to.

VII.F. Each test shall be conducted as follow:

CARB indicates that the fill rate shall be the minimum rate necessary to demonstrate compliance with the applicable fill rate specification set forth in Section 4. Section 4 indicates that the fill pipe shall accept a fill rate of 10 gal/min. A fill rate range is necessary for conducting testing. Honda recommends the same fill rate range as ORVR filling of 9.8 +/- 0.3 gal/min

VIII.I. The above measurement shall be repeated with five more fill pipes with the same fill pipe head design.

CARB's language indicates that the measures must be completed on a total of six different fill pipes. Honda believes it is unnecessary to measure on six different fill pipes and recommends adopting a similar procedure to the spit back procedure which requires five test on the same pipe.

Honda looks forward to the continued cooperation with CARB ECARS and MLD to improve the proposed Vehicle Fill Pipe Specifications. If you need further discussion, please do not hesitate to contact me.

Respectfully,

AMERICAN HONDA MOTOR CO., INC.

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