UPDATED INFORMATIVE DIGEST

AMENDMENTS TO ENHANCED VAPOR RECOVERY REGULATIONS TO STANDARDIZE GAS STATION NOZZLE SPOUT DIMENSIONS TO HELP ADDRESS STORAGE TANK OVERPRESSURE

Sections Affected:

Proposed amendments to California Code of Regulations, title 17, §§ 94010, 94011, 94016, and 94017.

Documents Incorporated by Reference:

The following documents will be incorporated in the regulation by reference in California Code of Regulations, title 17, §§ 94010, 94011, 94016, and 94017, respectively:

- D-200 – Definitions for Vapor Recovery Procedures [insert amendment date]
- CP-201 – Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities [insert amendment date]
- CP-206 – Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities Using Aboveground Storage Tanks [insert amendment date]
- CP-207 – Certification Procedure for Enhanced Conventional (ECO) Nozzles and Low Permeation Conventional Hoses for Use at Gasoline Dispensing Facilities [insert amendment date]

The above listed documents are also being amended by this regulation and thus the amendment date would be the date that the regulation is approved by the California Air Resources Board (CARB or Board).

Background and Effect of the Proposed Regulatory Action:

California's vapor recovery program controls emissions associated with the storage and transfer of gasoline from storage tanks at terminals or bulk plants to tanker trucks, from tanker trucks to storage tanks at gasoline dispensing facilities (GDF), and from GDF tank to the vehicle's fuel tank during vehicle fueling. CARB and the air pollution control/air quality management districts (air districts) share responsibility for implementing the vapor recovery program. CARB staff certifies prototype vapor recovery systems installed at operating GDFs. State law requires that throughout California only CARB-certified systems be offered for sale, sold, and installed. Air district rules require GDF operators to install and maintain vapor recovery systems to prevent release of gasoline vapors that contribute to the formation of ozone and to reduce the public's exposure to benzene, a toxic air contaminant. Air district staff also conduct regular inspections to check that systems are operating as certified.

CARB staff is now proposing to make amendments to several of the existing vapor recovery certification procedures and definitions for those procedures that will standardize GDF nozzle spout and bellows dimensions. CARB staff proposes to refine the three spout dimensions already defined in the certification procedures as well as to include sixteen additional dimensions for the:

- Shape and position of the enhanced vapor recovery (EVR) and enhanced conventional (ECO) nozzles' spout and spout latch ring;
- Outside and inside diameter of the vapor collection bellows, face flatness, and contact angle, for EVR vacuum-assist and balance nozzles; and
- Outside diameter of the insertion interlock device for ECO nozzles.

The proposed amendments add these dimensions and associated definitions to the certification procedures.

Objectives and Benefits of the Proposed Regulatory Action:

The proposed amendments are for new dimension requirements and definitions for nozzles used at gasoline dispensing facilities. The amendments are needed to improve nozzle compatibility with newer motor vehicle fill pipes. This compatibility is necessary to reduce air ingestion at the nozzle, which will help reduce pressure driven emissions (overpressure emissions) caused by evaporation of gasoline within the GDF storage tank headspace. Unexpected pressure driven emissions cause GDF vapor recovery systems to not achieve the performance standards and emission reductions anticipated when EVR regulations were adopted. The proposed amendments would prevent the certification of new nozzles not meeting the proposed nozzle specifications.

Emission reductions will result from the statewide implementation of the Healy Model 900 assist nozzle that includes the "Enhanced ORVR-Vehicle Recognition" (EOR) spout assembly at GDFs with vacuum-assist vapor recovery systems. The EOR spout assembly enables a better seal between the nozzle's vapor collection bellows and a fill pipe of a vehicle with an on-board refueling vapor recovery (ORVR) system, thereby reducing excess air ingestion. Approximately 52 percent of California GDFs are equipped with the vacuum assist system and there is only one manufacturer of assist nozzles certified for sale in California. The EOR version of the spout assembly meets the proposed dimensional standards. Based on ORVR recognition test data provided by CARB staff, the manufacturer of the Healy assist nozzle voluntarily developed the improved EOR spout assembly to help reduce air ingestion at the nozzle and no longer manufactures the prior version of the nozzle that does not meet the proposed dimensions. The remaining 48 percent of California GDFs are equipped with balance system nozzles. All currently certified balance nozzles meet the proposed spout assembly dimensions.

CARB staff estimates that statewide implementation of the assist EOR nozzle will improve air quality by reducing gasoline vapor (aka reactive organic gases, or ROG)

emissions, which also contain benzene, by about one ton per day. Reducing ROG emissions is an integral part of California's program for reaching its goal of attaining and maintaining federal and State ozone standards. Reducing emissions is critical to reducing benzene health risk for people who live and work near gasoline dispensing facilities. The proposed amendments will preserve emission reductions anticipated to result from statewide implementation of the assist EOR nozzle by preventing the introduction of new nozzles with dimensions known to result in a poor seal at the nozzle interface with a vehicle fill pipe. Standardization of spout dimensions will also enable the automotive industry to more effectively design compatible fill pipes for future vehicle models.

In addition, reducing overpressure conditions will reduce the frequency of GDF In-Station Diagnostic (ISD) system overpressure alarms, which will reduce the frequency and cost of service calls for many GDFs with vacuum-assist vapor recovery systems. Improving compatibility between nozzles and fill pipes also will make it easier for many customers to fuel their vehicles by reducing the effort needed to insert the nozzle in the fill pipe. The proposed amendments will preserve the cost savings and other benefits associated with improving the compatibility between nozzles and fill pipes.

CARB staff's proposal was developed in conjunction with an extensive public process. Staff informed, involved, and updated public stakeholders on staff's progress developing the proposed amendments. Staff held public workshops and had other meetings with interested persons during the development of the proposed regulatory amendments. These informal pre-rulemaking discussions provided staff with useful information that they considered during development of the regulatory amendments that are now being proposed for formal public comment.

Between 2012 and 2017, CARB staff held eleven public workshops in northern and southern California about GDF storage tank overpressure problems, study designs and results, and potential solutions. These workshops engaged representatives from nozzle, fill pipe, and automotive manufacturers; GDF owners and operators; service contractors and consultants; petroleum refineries and distributors; air districts; tribes; environmental consultants; farm bureaus; and air quality agencies from outside of California. In addition, staff created a public webpage where related workshop materials and technical support documents were posted to keep stakeholders up to date on the latest developments in the regulatory process and distributed announcements and workshop materials through the CARB list serves that, based on individual subscribers to the list serves, reach more than 4,000 individuals. Staff sent out multiple emails providing announcements to upcoming workshops, a description of the proposed amendments, and contact information for relevant staff.

Further, over the last three years, CARB staff participated in over twenty meetings with the Society of Automotive Engineers (SAE) Fuel Systems J285/J1140 Task Force (SAE Task Force), which is comprised of nozzle, vehicle, and fill pipe manufacturers. The SAE Task Force is charged with developing and testing new dimension specifications to standardize the vapor recovery nozzle and fill-pipe interface to improve compatibility.

The nozzle dimensions included in CARB staff's proposed amendments are the result of extensive deliberations of nozzle, vehicle, and fill pipe manufacturers who participated in the SAE Task Force. All the proposed dimensions have a range of values, rather than a single value, to increase flexibility and allow for innovation among nozzle manufacturers while at the same time providing the constraint needed for the fill pipe manufacturers. The SAE Task Force will include the new specifications in updated versions of two SAE recommended practice documents:

> Society of Automotive Engineers (SAE). Surface Vehicle Recommended Practice SAE *J285: Dispenser Nozzle Spouts for Liquid Fuels Intended for Use with Spark Ignition and Compression Ignition Engines.* (Update to be issued.)
>
> Society of Automotive Engineers (SAE). Recommended Practice SAE J1140: "Filler Pipes and Openings of Motor Vehicle Fuel Tanks." (Update to be issued.)

Description of Regulatory Action:

On September 4, 2018, CARB released the Notice of Public Hearing (45-Day Notice) and Staff Report: Initial Statement of Reasons for Rulemaking (Staff Report), titled "Public Hearing to Consider Proposed Amendments to Enhanced Vapor Recovery Regulations to Standardize Gas Station Nozzle Spout Dimensions to Help Address Storage Tank Overpressure", for public review. The Staff Report contains a description of the rationale for the proposed amendments. On September 4, 2018, all references relied upon and identified in the Staff Report were made available to the public. CARB received written comments from five organizations during the 45-Day Notice comment period.

On October 25, 2018, CARB conducted a public hearing. No oral comments nor written comments were presented by any individuals or organizations during the hearing. At the conclusion of the hearing, the Board approved Resolution 18-46 for adoption of the proposed amendments to CARB's existing vapor recovery regulations.

In accordance with Government Code section 11346.8, the Board directed the Executive Officer to adopt the proposed amendments after making any appropriate conforming modifications, as well as any additional supporting documents and information, available to the public for a period of at least 15 days. The Board further provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if warranted.

Subsequent to the hearing, CARB released a Notice of Public Availability of Modified Text and Availability of Additional Documents and Information (15-Day Notice) on April 8, 2019. The text of the proposed regulatory and staff report modifications was posted on CARB's website at https://ww2.arb.ca.gov/rulemaking/2018/gas-station-nozzle-spout-dimensions-2018, accessible to all stakeholders and interested parties.

The 15-Day Notice placed an additional document into the regulatory record and presented modifications to the regulatory text in response to public comments made, and continued SAE Task Force deliberations, during the 45-day comment period. The 15-Day Notice included proposed modifications to the originally proposed amendments to D-200, CP-201, CP-206, and CP-207, which are incorporated by reference in California Code of Regulations, title 17, §§ 94010, 94011, 94016, and 94017, respectively. The 15-Day Notice also presented minor corrections, updates and clarifications to the cost analysis in the Staff Report, none of which changed the Staff Report conclusion that the costs are considered negligible.

The 15-Day Notice modifications to the originally proposed amendments and Staff Report do not change implementation of the regulation in any way that affects the conclusions of the environmental analysis included in the Staff Report because the modifications do not alter the compliance responses. Consequently, no additional environmental analysis or recirculation of the environmental analysis is required.

During the 15-Day Notice comment period, one comment letter was submitted. The comments supported the 15-Day Notice modifications and did not suggest any changes to the proposed regulatory and staff report modifications. Staff subsequently prepared written responses to the written comments received during the 45-Day and 15-Day comment periods, as set forth in the Final Statement of Reasons. The Executive Officer adopted the regulatory amendments after addressing all appropriate modifications.

Summary of 15-Day Notice Modifications:

The substantive 15-Day Notice modifications included refinements, clarifications, and minor corrections to the nozzle and bellows dimensions in the originally proposed amendments. In addition, citations to SAE J1140 were deleted from CP-201, CP-206, and CP-207 because, though the SAE Task Force completed draft updates for SAE J1140, the updates have not yet completed the full SAE approval process. Consequently, the 15-Day Notice incorporated relevant J1140 material into CARB's certification procedures in new sections and figures.

The non-substantive 15-Day Notice modifications to the originally proposed amendments included updates to the Tables of Contents in CP-201, CP-206, and CP-207, corrections to section numbers, and changes to formatting.

Comparable Federal Regulations:

The three nozzle spout dimensions currently specified in CARB certification procedures CP-201, CP-206, and CP-207 are referenced in 40 CFR 80.22(f), where they are applied to nozzles that dispense unleaded gasoline. The proposed regulatory amendments refine these three dimensions as well as include sixteen additional dimensions for the:

- Shape and position of the EVR and ECO nozzles' spout and spout latch ring;

- Outside and inside diameter of the vapor collection bellows, face flatness, and contact angle, for EVR assist and balance nozzles; and
- Outside diameter of the insertion interlock device for ECO nozzles.

However, there are no federal regulations or programs directly comparable to California's EVR program for GDFs, and there are no federal regulations establishing dimension specifications for vapor recovery and ECO nozzles, as would be required by the proposed regulatory amendments. California's existing EVR regulations already exceed federal requirements. Other states and countries often require the installation of vapor recovery systems certified by CARB. Thus, changes to CARB EVR certification requirements may have a national and international impact.

An Evaluation of Inconsistency or Incompatibility with Existing State Regulations (Gov. Code § 11346.5, subd. (a)(3)(D)):

During the process of developing the proposed regulatory action, CARB staff conducted a search of any similar regulations on this topic and concluded these regulations are neither inconsistent nor incompatible with existing state regulations.