SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

FINAL DRAFT STAFF REPORT

Proposed Amendments to Rule 4621 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants) and Rule 4622 (Gasoline Transfer into Motor Vehicle Fuel Tanks)

November 19, 2013

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I. SUMMARY

On December 12, 2006, the United States Environmental Protection Agency (EPA) issued a memorandum (see Appendix A) to provide guidance to States regarding the removal of Stage II (Phase II)[1] gasoline vapor recovery system in specific portions of the motor vehicle fleet, that included the refueling of Flexible Fuel Vehicles (FFVs) at E85 fuel (85% ethanol and 15% gasoline) dispensing facilities. EPA's recommendation was based on the fact that FFVs that use E85 fuel are also equipped with an Onboard Refueling Vapor Recovery (ORVR) system. Since ORVR essentially performs the same function as Phase II vapor recovery system, FFVs refueling at E85 dispensing facilities are already having their evaporative emissions captured.

On February 20, 2008, the California Air Resources Board (ARB) issued a letter (see Appendix A) to all local air districts encouraging them to revise their vapor recovery rules to eliminate the requirement for Phase II vapor recovery systems on the vehicle fleets mentioned by EPA on their aforementioned letter that includes refueling of FFVs at E85 fuel dispensing facilities. ARB also issued an Executive Order G-70-212 summarizing these recommendations.

[1] The term Phase II, instead of Stage II, applies to the California vapor recovery program; therefore, the term Phase II will be used whenever applicable to the District.

Based on this guidance from EPA and ARB, the San Joaquin Valley Unified Air Pollution Control District (District) is proposing to amend District Rule 4622 (Gasoline Transfer into Motor Vehicle Fuel Tanks) to incorporate an exemption from requiring Phase II vapor recovery systems for E85 fuel dispensing facilities.

The District is also proposing to amend District Rule 4621 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants) to not requiring ARB certification for aviation gasoline bulk loading operations because ARB does not certify these operations.

Additionally, ARB recently adopted several cost reduction measures; however, the District found that all ARB cost reduction measures currently proposed or already adopted will be incorporated into ARB's Executive Orders. Since District Rules 4621 and 4622 already enforce all requirements in accordance with ARB's Executive Orders, any cost reduction measures adopted by ARB and incorporated into Executive Orders would be sufficiently enforced by our current rules. In addition, no comments were received from the stakeholders in this regard during or after the stakeholder meetings held on August 28, 2013. Therefore, District staff concluded that no amendment of District Rules 4621 and 4622 is necessary at this time to accommodate ARB's cost reduction measures.

The District is also proposing an amendment to District Rule 4622 to reduce the frequency of the Dynamic Back-Pressure Test from once every twelve months to once every five years. Due to the invasive nature of the test in which vapor space of the system is opened, reducing the test frequency will reduce the resulting emissions inherent from opening the vapor space. However, the emission reductions will not be quantified for the purpose of this rule amendment project.

Proposed rule amendments would also improve understanding of existing rule requirements by removing expired and redundant language, and adding clarifying language.

II. PROJECT BACKGROUND

A. Source Category

District Rule 4621 applies to gasoline storage containers located at bulk plants with capacities greater than 250 gallons and less than 19,800 gallons; to other stationary gasoline storage containers with capacities greater than 250 gallons; and to those gasoline storage containers that are not subject to the control requirements of District Rule 4623 (Storage of Organic Liquids) Section 5.0. The rule also applies to gasoline delivery vessels.

District Rule 4622 applies to any gasoline storage and dispensing operation or mobile fueler from which gasoline is transferred into motor vehicle fuel tanks, except as provided in Section 4.0 of the rule.

B. Current District Rules Requirements

The purpose of District Rules 4621 and 4622 is to limit VOC emissions during storage and transfer of gasoline. Current rule specifics are available online at: http://valleyair.org/rules/1ruleslist.htm.

1) District Rule 4621

District Rule 4621 requires aboveground and underground gasoline storage containers to be equipped with an ARB certified Phase I vapor recovery system, a permanent submerged fill pipe, and a pressure-vacuum relief valve with specified operational settings. Bulk plants and loading racks are required to be equipped with an ARB certified vapor recovery system for gasoline loading operations, maintained free of leaks, and inspected semi-annually.

2) District Rule 4622

District Rule 4622 requires that the containers subject to District Rule 4621 be equipped with an ARB certified Phase II vapor recovery system subject to periodic maintenance inspections based on gasoline throughput, maintenance of an operations and maintenance manual (O&M manual), and prompt replacement of damaged Phase II components.

C. Control Technologies

There are two main types of vapor recovery systems utilized to control vapor losses from the transfer and storage of gasoline. The Phase I systems control vapor losses during the transfer of gasoline from delivery vessels to storage tanks while Phase II systems control vapor losses from the transfer of gasoline into motor vehicle fuel tanks.

When the storage tank is being filled, the gasoline introduced displaces the vapor in the storage tank. Similarly, when liquid gasoline is dispensed into the vehicle fuel tank, it displaces the gasoline vapor already present in the vehicle fuel tank. If the vapor recovery systems do not adequately collect the displaced vapor, the vapor can be emitted into the atmosphere.

ORVR is a vehicle emission control system and is an integral part of the vehicle fuel system to capture at least 95% of the vapors that otherwise would be displaced during refueling. The gas tank and fill pipe are designed so that when refueling the vehicle, fuel vapors in the gas tank travel to an activated carbon packed canister, which adsorbs

the vapor. When the engine is in operation, it draws the gasoline vapors into the engine intake manifold to be used as fuel.

ORVR essentially performs the same function as Phase II Vapor Recovery System (VRS) and both are required to achieve a minimum vapor control efficiency of 95%.

III. PROPOSED AMENDMENTS

A. District Rule 4621 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants)

1. Section 4.0 (Exemptions)

Language would be amended in Section 4.0 to exempt equipment listed in Sections 4.1 through 4.4 from this rule except for the requirements of Sections 6.1.1 and 6.1.4. This exemption is proposed to be amended to clarify that equipment listed in Sections 4.1 through 4.4 are exempt from all ARB Phase I and ARB Phase II requirements.

2. Section 5.6 (Bulk Plants and Loading Racks at Bulk Plants)

Section 5.6.1 is proposed to be split into two subsections 5.6.1.1 and 5.6.1.2. Subsection 5.6.1.1 would apply to bulk plants not involved with aviation gasoline loading and would continue to require an ARB certified vapor recovery system for loading operations (loading rack).

Subsection 5.6.1.2 would apply to bulk plants involved with aviation gasoline loading. Currently, District Rule 4621 requires ARB's bulk plant certification for aviation gasoline bulk loading operations. However, ARB does not certify aviation gasoline bulk loading operations. Therefore, District Rule 4621 will be amended to remove ARB certification requirements for these operations. Instead of ARB certifications, these operations would be required to be equipped with a vapor recovery system that would meet a minimum volumetric control of 90% when measured in accordance with the test method specified in Section 6.4.9.

3. Section 5.7 (Delivery Vessels)

Section 5.7.3 is proposed to be amended to account for a scenario in which one delivery vessel is directly filled with gasoline from another delivery vessel without any intermediate gasoline storage tank. Such scenario can be encountered when a smaller delivery vessel is directly filled from a larger one. Since any delivery vessel into which gasoline vapors have been transferred can only be filled at a loading rack or another delivery vessel that is equipped with ARB certified vapor recovery system, this amendment will address this requirement.

4. Section 6.0 (Administrative Requirements)

A new Section 6.4.9 is proposed to be added to include ARB's Test Procedure *TP-202.1, Determination of Emission Factor of Vapor Recovery Systems of Bulk Plants.* This test procedure is required to demonstrate the required control efficiency for bulk plant loading operations falling under proposed new Section 5.6.1.2.

B. District Rule 4622 (Gasoline Transfer into Motor Vehicle Fuel Tanks)

1. Section 3.0 (Definitions)

Four new definitions are proposed to be added to Section 3.0 for clarification of terms used within the requirements of District Rule 4622. These definitions would include E85 Fuel, IOM Manual, In-Station Diagnostics (ISD) system, and Liquid Condensate Trap. ISD and liquid condensate trap definitions are consistent with ARB's *Definitions for Vapor Recovery Procedures (D-200).*

2. Section 4.0 (Exemptions)

A new exemption is proposed to be added to the rule as Section 4.5. This exemption would allow mobile fuelers registered under District Permit Exempt Equipment Registration program to not be subject to the testing requirements of Section 6.4.1. Such mobile fuelers are subject to the certification requirements of ARB's Executive Order G-70-193, *Certification of the Hill-Vac Vapor Recovery System for Cargo Tank Motor Vehicle Fueling Systems*. G-70-193 already lists all of the testing requirements for these mobile fuelers making testing requirements under District Rule 4622 redundant and unnecessary.

A second exemption is proposed to be added under a new Section 4.6 to exempt E85 fuel dispensing operations from rule requirements. As mentioned under Section I of this document, FFVs that use E85 fuel are also equipped with ORVR. Since ORVR essentially performs the same function as Phase II vapor recovery system and each of them is required to achieve a minimum vapor control efficiency of 95%, the removal of Phase II vapor recovery system for E85 fuel dispensing operation would not result in relaxing current rule requirements and will not result in an increase in emissions.

3. Section 5.0 (Requirements)

Section 5.4.1 is proposed to be amended to eliminate redundant language that is already included in the definition of Major Defect (Section 3.22).

ARB's Executive Order requirements for ISD systems and liquid condensate traps will be added to District Rule 4622 as Sections 5.12 and 5.13 to reflect ARB's Executive Order and Certification Procedure requirements, and to add clarity for regulated sources. New Section 5.12 is proposed to be added to the rule to add provisions

regarding requirements for liquid condensate trap installation, operation, and maintenance. Similarly, new Section 5.13 is proposed to be added to the rule to add provisions for requirements of ISD system regarding operator response, contractor response, and alarm history records.

4. Section 6.0 (Administrative Requirements)

Proposed amendments to Section 6.3.3.3 would eliminate the reference to ARB Certification Procedure CP 201, and make rule language more inclusive of ARB certification procedures by including the language "applicable ARB Certification Procedures," this includes CP 201, CP 206 and any future ARB Certification Procedures.

5. Section 6.4 (Testing Requirements)

Section 6.4.1.2 is proposed to be amended to reduce the frequency of the Dynamic Back-Pressure Test from once every twelve months to once every five years, unless the applicable ARB's Executive Order requires more frequent testing. This proposal is based on the invasive nature of the test – the vapor space of the system is opened – and to reduce the resulting emissions inherent from opening the vapor space.

This test is to determine if the vapor recovery piping contains any blockages that would impair the system's effectiveness. ARB's Executive Orders require this test to be performed initially whenever a vapor recovery system is installed or modified. Together with the pre-backfill inspection required by Rule 4622 Section 5.2.2, this test shows if a system was constructed correctly and therefore less likely to have blockage issues in the future. ARB's Executive Orders leave it to the District's discretion if ongoing testing would be required, and at what frequency.

Vapor recovery systems that have been constructed correctly are less likely to have blockage issues in the future. Additionally, the systems equipped with In-Station Diagnostics (ISD) systems will be continuously monitored by ISD for blockages.

The annual testing requirement was added to District Rule 4622 on September 19, 2002. A review of the past eight years of District's testing records for the Dynamic Back-Pressure Test indicates that there were only seven test failures in eight years of the approximately 1,500 sites tested annually. Out of these tests, only four were failures during the ongoing testing (the other three were the initial tests). On average, this constitutes a test failure rate of less than one test per year.

The proposed amendment to change the frequency for Dynamic Back-Pressure Test would not result in an increase in emissions, but will instead reduce VOC emissions that are inherent to the test procedure itself. The test frequency is being reduced from once every twelve months to once every five years, consistent with EPA guidance on minimum test frequencies.

District staff has discussed this proposed amendment with EPA and EPA has submitted a "No Comment" letter to the District. Please refer to Appendix B for more information.

6. Section 7.0 (Compliance Schedule)

Section 7.1.2 would be modified to clarify the six month period to complete construction from the issuance date of authority to construct (ATC) and 60 day testing requirements.

Additionally, new section 7.3 would be added allowing time to comply, if necessary, for facilities becoming subject to the requirements of the installation and operation of an ISD system.

IV. RULE DEVELOPMENT PROCESS

A. Stakeholder Meetings

As part of the rule development process, the District held two stakeholder meetings on August 28, 2013 to present, discuss, and hear comments on the draft rule amendments under consideration, which were presented in the meetings in the form of a power point presentation. Draft versions of the rules were not available and were not presented at the stakeholder meetings. The stakeholder meetings were held via video teleconferencing in all three District's offices and were also live streamed using the webcast. No comments were received during or after the stakeholder meetings.

B. Public Workshop

The District held a public workshop on October 10, 2013 and the draft versions of the rules were presented at the public workshop. The focus of the public workshop was to present the goals for the project and to solicit public feedback. At the public workshop, District staff presented the objectives of the rule-amending project, explained the District's rule development process for this project, solicited feedback from affected stakeholders, and informed all interested parties of the comment period and project milestones.

The Draft Staff Report and Draft Rules were made available on the District's website prior to the public workshop, and a two week comment period followed the public workshop. No comments were received during the public workshop or during the two week comment period that followed the public workshop. As such, it was also determined that there is no need to hold a future workshop.

C. Public Hearing

In accordance with California Health and Safety Code (CH&SC) Section 40725, the proposed amendments to District Rules 4621 and 4622 and final draft staff report will be publicly noticed and made available on the District's website prior to the Governing Board public hearing to consider adoption of the proposed rule amendments. The proposed amendments and final draft staff report will be made available for public comment no later than November 19, 2013 with an associated two week public comment period ending at 5:00 PM on December 3, 2013. The public is also invited to provide comments during the public hearing for the adoption of the proposed rule amendments on December 19, 2013.

V. ANALYSES

This rule amending project incorporates already enforced state and federal standards, clarifies existing requirements and updates the frequency of dynamic backpressure testing. Proposed amendments do not result in new or more stringent regulatory controls beyond those already enforced and do not negatively affect air quality or emission limitations.

A. Emission Reduction & Cost Effectiveness Analysis

Emissions will be reduced as a result of the proposed amendment of reducing the frequency of the Dynamic Back-Pressure Test. However, the emission reductions will not be quantified for the purpose of this rule amendment project and will therefore not be quantified or claimed in the State Implementation Plan (SIP). Additionally, there are no costs associated with the proposed amendments to District Rules 4621 and 4622.

B. Socioeconomic Analysis

Pursuant to CH&SC § 40728.5 (a), "Whenever a district intends to propose the adoption, amendment, or repeal of a rule or regulation that will significantly affect air quality or emissions limitations, that agency shall, to the extend data are available, perform an assessment of the socioeconomic impacts of the adoption, amendment, or repeal of that rule or regulation. This section does not apply to the adoption, amendment, or repeal of any rule or regulation that results in any less restrictive emissions limits if the action does not interfere with the district's adopted plan to attain ambient air quality standards, or does not result in any significant increase in emissions." Proposed amendments do not significantly affect air quality or strengthen emission limitations beyond those already enforced, nor does it result in a significant increase in emissions; therefore, no socioeconomic analysis is required.

C. Rule Consistency Analysis

Pursuant to CH&SC § 40727.2, District staff has prepared a rule consistency analysis that compares the elements of proposed amendments with the corresponding elements of other District rules, federal regulations and guidelines that apply to the same source category or type of equipment. District staff found that the proposed amendments and requirements of these rules would not conflict with federal rules, regulations, or policies covering similar stationary sources. The rule consistency analysis is presented as an appendix to the final draft staff report. The proposed amendments would not conflict with federal rules, regulations, or policies covering similar stationary sources.

D. Environmental Impact Analysis

Pursuant to §15061 of the Guidelines for Implementation of the California Environmental Quality Act (CEQA), District staff investigated the possible environmental impacts of the proposed amendments to District Rules 4621 and 4622. Based on the lack of evidence to the contrary, District staff has concluded that the proposed amendments to these rules will not have any significant adverse effects on the environment. Staff recommends filing a Notice of Exemption under the provisions of Public Resource Code 15061(b)(3).

VI. REFERENCES

Appendix A: Guidance from EPA and ARB
Appendix B: Comments and Responses
Appendix C: Rule Consistency Analysis

APPENDIX A

Guidance from EPA and ARB
Proposed Amendments to District Rules 4621 & 4622

November 19, 2013

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Attachment 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

DEC 12 2006

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Removal of Stage II Vapor Recovery in Situations Where Widespread Use of Onboard Refueling Vapor Recovery is Demonstrated

FROM: Stephen D. Page, Director
Office of Air Quality Planning and Standards

Margo Tsirigotis Oge, Director
Office of Transportation and Air Quality

TO: Regional Air Division Directors

The purpose of this memorandum is to provide guidance to States concerning the removal of Stage II gasoline vapor recovery systems where States demonstrate to EPA that widespread use of onboard refueling vapor recovery (ORVR) has occurred in specific portions of the motor vehicle fleet. The specific fleets addressed here include:

1. initial fueling of new vehicles at automobile assembly plants
2. refueling of rental cars at rental car facilities
3. refueling of flexible fuel vehicles at E85 dispensing pumps

Background

Stage II vapor recovery systems are required to be used at gasoline dispensing facilities located in serious, severe, and extreme non-attainment areas for ozone under section 182(b)(3) of the Clean Air Act (CAA). States have included these control measures in their federally-approved state implementation plans (SIPs) in the form of generally applicable regulatory requirements governing all gasoline dispensing facilities that exceed the relevant gasoline dispensing throughput criteria. However, section 202(a)(6) of the CAA allows EPA to revise or waive the section 182(b)(3) Stage II requirement for these ozone non-attainment areas after the Agency determines that ORVR is in widespread use throughout the motor vehicle fleet.

CAA section 202(a)(6) does not specify which motor vehicle fleet must be the subject of a widespread use determination before EPA may revise or waive the section 182(b)(3) Stage II requirement. Nor does the CAA identify what level of ORVR use in the motor vehicle fleet must be reached before it is "widespread." EPA expects the possibility of

different rates of the implementation of ORVR across different geographic regions and among different types of motor vehicle fleets within any region. Given this, EPA does not believe that CAA section 202(a)(6) must be read narrowly to allow a widespread use determination and waiver of the Stage II requirement for a given area or area's fleet only if ORVR use has become widespread throughout the entire United States, or only if ORVR use has reached a definite level in each area. Rather, EPA believes that section 202(a)(6) allows the Agency to apply the widespread use criterion to either the entire motor vehicle fleet in a State or non-attainment area, or to special segments of the overall fleet for which ORVR use is shown to be sufficiently high, and to base widespread use determinations on differing levels of ORVR use, as appropriate. Moreover, a single national rulemaking is not needed to grant such a waiver for a specific area. Instead, EPA believes that the Act allows the Agency to use an area-specific rulemaking approving a SIP revision to issue the section 202(a)(6) waiver for a relevant fleet in a non-attainment area, where a State meets the recommended criteria discussed below.

Various metrics have been studied for demonstrating widespread use of ORVR in motor vehicle fleets. One metric focuses on the percentage of vehicles in service that are ORVR-equipped. Based on our preliminary analysis, this metric seems to track fairly closely with the percentage of vehicle miles traveled (VMT) from ORVR-equipped vehicles, and with the percentage of gasoline sold which is dispensed to ORVR-equipped vehicles. In fact, since newer vehicles tend to be driven more miles than older models, VMT traveled by ORVR-equipped vehicles and gasoline dispensed to ORVR-equipped vehicles may exceed 95 percent in a 95 percent ORVR-equipped fleet.

Another metric that EPA considered is when VOC emissions resulting from the application of ORVR controls alone equal the VOC emissions when both Stage II vapor recovery systems and ORVR controls are used, after accounting for incompatibility excess emissions. The incompatibility excess emissions factor relates to losses in control efficiency when certain types of Stage II and ORVR are used together. Studies conducted in three northeastern states indicate that when the percentages of motor vehicles in service with ORVR, vehicle miles traveled by ORVR-equipped vehicles, or gasoline dispensed to ORVR-equipped vehicles are above 95 percent, then the widespread use metric based on comparable VOC emissions will likely have been reached. For this reason, EPA believes that if 95 percent of the vehicles in a fleet have ORVR, then widespread use will likely have been demonstrated.

1. Initial Fueling at Automobile Assembly Plants

Based on our preliminary analysis, EPA expects that if a State's submission of a SIP revision shows that 95 percent of the new vehicles fueled at an automobile assembly plant are equipped with ORVR, and that this level of ORVR use would not decrease, the Agency can determine that widespread use of ORVR has been achieved for the fleet of motor vehicles that are fueled at that facility.

Since model year 2000, all passenger cars have been required to have ORVR. Also since 2006, all light duty trucks, SUVs and medium duty vehicles are required to be equipped

with ORVR. There may be a few situations, such as the chassis for motorized mobile homes, which still do not have ORVR. However, the number of these would be small. It is apparent that at most automobile assembly plants greater than 95 percent of the vehicles manufactured would have ORVR. Many assembly plants manufacture 100 percent ORVR equipped vehicles. Only such new vehicles are expected to be fueled at the automobile assembly plants.

States desiring to remove the Stage II requirement for these facilities would need to submit a SIP revision that EPA would evaluate through notice and comment rulemaking. The SIP would need to demonstrate that the widespread use benchmark has been achieved and provide assurance that any facility wishing to remove Stage II equipment maintains its eligibility for its motor vehicle fleet. Any EPA SIP approval would also be subject to the CAA section 110(l) requirement that the revision not interfere with any applicable requirement concerning attainment and reasonable further progress, or any other requirement of the CAA.

2. Refueling of Rental Cars at Rental Car Facilities

Similarly, EPA expects that if a SIP revision submission demonstrates that 95 percent of the vehicles in an automobile rental fleet refueling at a rental car facility are equipped with ORVR and that this level of ORVR use would not decrease, then widespread use of ORVR could be found for the motor vehicle fleet refueling at that facility. Most large rental car companies rent current model vehicles that would all have ORVR. There may be truck rental companies which have older vehicles which do not have ORVR and that would not be able to demonstrate widespread use of ORVR for their fleets. As discussed above, any SIP revision would be subject to CAA section 110(l) and other applicable requirements, and State and local agencies should consider any potential transportation conformity impacts if Stage II is currently included in a SIP's on-road motor vehicle emissions budget.

3. Refueling Flexible Fuel Vehicles at E85 Dispensing Pumps

E85 is a motor vehicle fuel that is a blend of as little as 15 percent gasoline and up to 85 percent ethanol. (In wintertime applications, the ratio may be 30 percent gasoline and 70 percent ethanol.) Ethanol is ethyl alcohol, a type of alcohol which can be produced from renewable resources such as corn. Based on the agency's survey of existing SIPs, EPA believes that most States have defined "gasoline" (for purposes of controlling emissions of VOC from refueling activities) to include gasoline/alcohol blends that have the same volatility as E85. EPA's guidance for States in developing their Stage II SIPs in the early 1990s suggested that States use the same definition of "gasoline" as the one found in EPA's Standards of Performance for Bulk Gasoline Terminals at 40 C.F.R. 60.501, which includes "any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals (kPa) or greater which is used as a fuel for internal combustion engines." EPA recommended using this definition to most broadly reach situations in which refueling of motor vehicles results in evaporative VOC emissions that contribute to ozone non-attainment concentrations, and to avoid a narrow interpretation of what is "gasoline" that

would allow significant VOC emissions from motor vehicle refueling activities in non-attainment areas to go uncontrolled.

E85 can only be used in specially designed flexible fuel vehicles (FFVs), which have mostly been manufactured since 1998. Since these are newer vehicles, most of them are equipped with ORVR, and every FFV built today has ORVR. Thus, most vehicles refueling at E85 dispensing pumps are already having their evaporative emissions captured, as in the cases of late model rental cars refueling at rental car facilities and newly manufactured cars being fueled for the first time at automobile assembly plants. EPA estimates that 59 percent of FFVs in current use are equipped with ORVR. The percentage of FFVs with ORVR will continue to climb as older vehicles are taken out of service and new models join the fleet. Across different ozone non-attainment areas and between States, these percentages may vary.

EPA believes that encouraging the use of E85 as a motor vehicle fuel reduces emissions of other air pollutants such as CO and benzene, a known human carcinogen, and reduces emissions of greenhouse gases. In addition, based on available information, the Agency is concerned that there is currently a lack of certified Stage II equipment for E85 (which may require different materials of construction than conventional Stage II equipment), and that the timing for when certified E85-compatible equipment will become widely available is uncertain. This may unnecessarily hinder E85 distribution in areas that now require Stage II.

Unlike in the cases of automobile assembly plants and rental car facilities, EPA is not recommending a specific percentage of the FFV fleet that should have ORVR before widespread use could be determined. This is because most E85 compatible vehicles are already equipped with ORVR and this percentage is increasing over time, whereas for automobile assembly plants and car rental facilities very high percentages of ORVR use have in most cases already been reached and are not expected to further increase significantly. The general use of ORVR in FFVs, instead, is expected to significantly increase, as are the miles driven by and amount of fuel dispensed to recent ORVR-equipped FFVs compared to those manufactured before 2000 without ORVR.

Moreover, we believe that in determining whether widespread use of ORVR has been demonstrated, it is reasonable under section 202(a)(6) to consider the VOC emissions impacts of removing Stage II, and that those impacts may inform the percentage of ORVR-equipped vehicles that would need to be achieved for a specific motor vehicle fleet or in a specific non-attainment area. EPA expects that the air quality impact of allowing E85 refueling facilities to operate without Stage II controls would likely be minimal in most non-attainment areas. FFVs currently comprise about 2 percent of the total US fleet. Non-ORVR FFVs are less 1 percent of the total U.S. vehicle fleet. EPA estimates that non-ORVR FFVs participate in only about 0.5 percent of all refueling events. Furthermore, because of the relatively small number of stations that offer E85 (around 1,000 out of 170,000 total refueling stations) EPA believes that very few of these non-ORVR refueling events actually occur at E85 pumps.

Considering the factors discussed above, if an area can demonstrate that any increase in emissions caused by operating E85 fueling facilities without Stage II controls is so small as to clearly not interfere with attainment of the ozone standard or reasonable further progress or any other applicable CAA requirement, then EPA expects it could find that ORVR is in widespread use for FFVs when refueling at E85 facilities in this area. These areas could then allow E85 facilities to operate without Stage II controls, after modifying their SIPs such that E85 is not included within the definition of "gasoline" for purposes of Stage II vapor recovery controls (or after taking other necessary SIP revision action). As discussed above, States would need to submit SIP revisions affecting this change to their current Stage II SIPs, which EPA would evaluate through notice and comment rulemaking, subject to the provisions of CAA section 110(l). In addition, State and local agencies should consider if there are any transportation conformity impacts related to removing Stage II, if emissions reductions from Stage II are included in a SIP's on-road motor vehicle emissions budget. Due to the expected rapid growth of E85 installations, EPA will explore the development of ways to expedite the SIP revision process for States which are dealing with the E85 issue.

General Exclusions from Widespread Use Determinations

States in the ozone transport region (OTR) are still required to apply Stage II, or a comparable measure, in all areas under 184(b)(2) of the CAA. This requirement is not affected by any widespread use determination or waiver of the section 182(b)(3) requirement granted under section 202(a)(6). For the independent section 184(b)(2) "comparable measure" requirement to not prevent an appropriate removal of Stage II controls, OTR States may want to revisit their previously approved comparable measure SIPs to consider substituting available non-Stage II measures for the Stage II controls they currently require.

Also, some States have chosen to add Stage II vapor recovery system requirements in their SIPs for ozone nonattainment areas that are classified in a category lower than "serious." While it is not necessary for States to demonstrate ORVR is in widespread use in moderate or cleaner ozone non-attainment areas, a revision of previously adopted SIP requirements to specifically waive Stage II requirements in such areas would need to comply with the provisions of CAA section 110(l) and, as described above, consider any transportation conformity impacts as applicable.

This guidance for widespread use determinations for special sectors would not necessarily apply to widespread use determinations for the general motor vehicle fleet. Within the overall motor vehicle fleet, the rate of penetration of ORVR-equipped vehicles has not advanced at the same rapid rates as for the fleets discussed in this memorandum. EPA is still considering the possible criteria for determining widespread use for the general fleet.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

NOV 28 2007

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Removal of Stage II Vapor Recovery from Refueling of Corporate Fleets

FROM: Stephen D. Page, Director
Office of Air Quality Planning and Standards

Margo Tsirigotis Oge, Director
Office of Transportation and Air Quality

TO: Regional Air Division Directors

The purpose of this memorandum is to provide guidance to States concerning the removal of Stage II gasoline vapor recovery systems at gasoline refueling facilities exclusively dedicated to refueling "corporate" or "commercial" fleets, where States demonstrate to the Environmental Protection Agency (EPA) that widespread use of onboard refueling vapor recovery (ORVR) has occurred in such fleets. Corporate or commercial fleets include vehicles owned by corporations, governments, universities or other organizations which use the vehicles for business purposes and typically fuel the vehicles at fueling pumps owned and operated by the fleet owner and exclusively dedicated to fueling the fleet.

On December 12, 2006, EPA issued a memorandum, "Removal of Stage II Vapor Recovery in Situations Where Widespread Use of Onboard Refueling Vapor Recovery is Demonstrated," (attached) which discussed how States may explore amendments to their State Implementation Plans (SIPs) to allow Stage II gasoline vapor recovery to be removed from specific fleet situations, namely:

1. initial fueling of new vehicles at automobile assembly plants;
2. refueling of rental cars at rental car facilities; and
3. refueling of flexible fuel vehicles at E85 dispensing pumps.

The December 12, 2006, memo states that widespread use of ORVR will likely have been demonstrated if 95 percent of the vehicles in a fleet have ORVR. In today's memorandum, EPA is indicating that it believes that if a State demonstrates that 95 percent of the vehicles in a corporate or commercial vehicle fleet are equipped with ORVR and that

this level of ORVR use would not decrease, then widespread use of ORVR could be found for the corporate or commercial motor vehicle fleet, such that Stage II controls could be considered for removal from a refueling facility that is exclusively dedicated to refueling that fleet.

States desiring to remove the Stage II requirement for these facilities would need to submit a SIP revision that EPA would evaluate through notice and comment rulemaking. The SIP would need to demonstrate that the widespread use benchmark has been achieved and provide assurance that any facility wishing to remove Stage II equipment maintains its eligibility for its motor vehicle fleet. Any EPA SIP approval would also be subject to the Clean Air Act (CAA) section 110(l) requirement that the revision not interfere with any applicable requirement concerning attainment and reasonable further progress, or any other requirement of the CAA. In addition, State and local agencies should consider if there are any transportation conformity impacts related to removing Stage II, if emissions reductions from Stage II are included in a SIP's on-road motor vehicle emissions budget(s).

As mentioned in the December 12, 2006 memorandum, this guidance for widespread use determinations for corporate fleets would not necessarily apply to widespread use determinations for the general motor vehicle fleet. Within the overall motor vehicle fleet, the rate of penetration of ORVR-equipped vehicles has not advanced at the same rapid rates as in some corporate and rental fleets. EPA is still considering the possible criteria for determining widespread use for the general fleet.

In addition, the December 12, 2006, memorandum explained that widespread use determinations would not affect separate requirements applicable to States in the ozone transport region. This exclusion would also apply in the case of corporate or commercial fleets with widespread use of ORVR.

If you have questions about this recommendation, you may contact William L. Johnson in EPA's Office of Air Quality Planning and Standards by telephone at (919) 541-5245 or by e-mail at johnson.williamL@epa.gov.

Attachment

Attachment 2

Estimated ROG Emission Increases
From Removal of Stage 2 Vapor Recovery from E85 Fuel Dispensers

Year	Non-ORVR flex fuel vehicle population[1] (1,000's)	Annual VMT per vehicle[2], (1,000's)	% VMT fueled with E85[3]	E85 fuel economy[4] (miles per gallon)	Annual E85 used per vehicle[5], (gallons)	Total E85 used daily[6], 1,000's (gallons)	ROG emissions[7], statewide (tons per day)
2005	110	13.5	0	14.8	0	0	0
2010	95	11.4	5	14.8	38.5	10.0	0.035
2015	67	10.3	15	14.8	104	19.1	0.073
2020	34	9.3	25	14.8	157	14.6	0.055

Notes:

1. Based on data provided to ARB by automobile manufacturers of flex fuel vehicles (FFVs) sold in California 1997 – 2005, for which nearly all FFVs were light-duty trucks. Annual number of FFVs is estimated using survival fraction of vehicles as a function of vehicle age. Assumes all FFV light-duty trucks equipped with onboard refueling vapor recovery (ORVR) starting with MY2003. Average age of vehicles in 2005 non-ORVR FFV fleet is 4 years.

2. Annual vehicle miles traveled (VMT) data for light-duty trucks based on EMFAC2007.

3. Assumes increase in E85 refueling over time as number of E85 pumps increase and motorists become aware that E85 costs less than reformulated gasoline. The assumed percentages in each of the three years are estimates based on these factors.

4. Assumes:

   - Fuel economy of FFVs operating on E85 based on U.S. EPA Fuel Economy Guides;
   - Fuel economy does not decline with vehicle age for newer model year vehicles equipped with advanced on-board diagnostics.

5. Calculated: annual VMT X % fueled with E85 / fuel economy in miles per gallon.

6. Calculated: vehicle population X annual gallons E85 / 365 days per year.

7. Calculated: daily gallons of fuel used X evaporative emissions in pounds TOG per gallon of fuel throughput X 0.92 (ratio of ROG/TOG).

Assumes:

- E85 evaporative emissions factor same as emissions factor for reformulated gasoline. (Source: Full Fuel Cycle Assessment Well to Tank Energy Inputs, Emissions, and Water Impacts, CEC-600-2007-002-D, February 2007, pp. 5-30 to 5-35);

- Reformulated gasoline evaporative emissions factor 7.6 pounds TOG per 1,000 gallons of fuel throughput (Source: "Uncontrolled Vapor Emission Factor at Gasoline Dispensing Stations," January 5, 2000.)

Air Resources Board

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Linda S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

February 20, 2008

Addressees: All Local Air District Air Pollution Control Officers (APCO)

Dear APCO:

I am writing to encourage you to revise your district's vapor recovery rules as outlined by the U.S. Environmental Protection Agency (U.S. EPA) in the attached memoranda (Attachment 1). U.S. EPA is encouraging states to eliminate the requirement for Phase II vapor recovery systems on gasoline refueling dispensers for certain motor vehicle fleets in light of the growing use of Onboard Refueling Vapor Recovery (ORVR) systems in those fleets.

The fleets at issue are new vehicles initially fueled at motor vehicle assembly plants, late model rental cars refueled at rental car facilities, corporate fleets refueled at corporate-owned pumps, and flexible fuel vehicles (FFVs) refueled at E85 fuel dispensers.

Section 202(a)(6) of the federal Clean Air Act (Act) allows U.S. EPA to remove the requirement for vehicle refueling gasoline vapor recovery systems in ozone nonattainment areas after determining that ORVR systems for motor vehicles are in widespread use. For new vehicles initially fueled at motor vehicle assembly plants, late model rental cars refueled at rental car facilities, and corporate fleets refueled at corporate-owned pumps, U.S. EPA has defined widespread use as 95 percent of the vehicles equipped with ORVR. By virtue of being made up of new late-model vehicles, these fleets have met this criterion.

For FFVs, U.S. EPA is recommending that states show that any increase in emissions caused by operating E85 refueling dispensers without vapor recovery systems is so small as not to interfere with ozone attainment. ARB staff has estimated the emissions to be less than 0.10 tons per day of reactive organic gases statewide in 2015 (see Attachment 2) and believes that it is reasonable to conclude that there is no impact on ozone attainment.

The process for revising a district's vapor recovery requirements is the same as for any other district rule State Implementation Plan (SIP) submission: adopt the amended rules at a public hearing and transmit the amended rules to ARB for processing as a SIP revision and submittal to U.S. EPA. ARB staff is available to assist you with rule review

or in doing additional analysis before proceeding, including more specific emissions assessment and attainment impacts, impact on progress toward state standards, and any possible toxic air contaminant issues.

If you have any questions or need further information regarding vapor recovery requirements, please contact Cindy Castronovo of the Monitoring and Laboratory Division at (916) 322-8957. For questions regarding the emissions impact analysis, please contact Dean Simeroth, Chief of the Criteria Pollutants Branch, at (916) 322-6020.

Sincerely,

James N. Goldstene
Executive Officer

Attachments

cc: Dean Simeroth, SSD
Kurt Karperos, PTSD
Cindy Castronovo, MLD

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APPENDIX B

Summary of Significant Comments and Responses
Proposed Amendments to District Rules 4621 & 4622

November 19, 2013

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SUMMARY OF SIGNIFICANT COMMENTS FOR DRAFT AMENDMENTS TO DISTRICT RULES 4621 AND 4622

EPA REGION IX COMMENTS

EPA submitted the following comment on November 14, 2013:
Based on the preliminary review of the revised draft rule identified above, we have no comments at this time. We support the District's efforts to update the rules to meet EPA guidelines and to remove outdated rule language.

ARB COMMENTS

No comments were received from ARB.

STAKEHOLDER COMMENTS

No stakeholder comments were received.

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APPENDIX C

Rule Consistency Analysis
Proposed Amendments to District Rules 4621 & 4622

November 19, 2013

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RULE CONSISTENCY ANALYSIS FOR PROPOSED AMENDMENTS TO DISTRICT RULES 4621 & 4622

I. REQUIREMENTS FOR RULE CONSISTENCY ANALYSIS

Pursuant to Section 40727.2 of the California Health and Safety Code, prior to adopting, amending, or repealing a rule or regulation, the District performs a written analysis that identifies and compares the air pollution control elements of the rule or regulation with corresponding elements of existing or proposed District and United States Environmental Protection Agency (EPA) rules, regulations, and guidelines that apply to the same source category. The rule elements analyzed are emission limits; monitoring and testing requirements; recordkeeping and reporting requirements; and operating parameters and work practice requirements.

II. ANALYSIS

A. District Rules

There is no other District prohibitory rule or regulation tailored specifically for gasoline transfer into stationary storage containers, delivery vessels, bulk plants, and gasoline transfer into motor vehicle fuel tanks.

B. Federal Rules, Regulations, and Policies

1. EPA Control Techniques Guideline (CTG) Documents[2]

i. EPA 450/R-75-102 "*Design Criteria for Stage I Vapor Control Systems – Gasoline Service Stations*," dated November 1975 (applicable to Rule 4621)

This document discusses the different control techniques and establishes the design criteria for controlling VOC emissions from gasoline tank filling (federal Stage I sources). The control techniques discussed in this CTG include two-point systems, concentric or coaxial systems, and manifolding the vent lines. The ACT also states that EPA requires vapor control systems control 90% of the vapors from the Stage I side of a gasoline dispensing operation. Currently District Rule 4621 requires ARB's certified Phase I vapor recovery systems with more stringent control requirements (a minimum of 95% of vapor control) than the federal Stage I systems. Since all control techniques established by this CTG document are already being implemented and the proposed amendments to District Rule 4621 do not establish any new design criteria, the District rule is already as stringent as the CTG.

[2] Environmental Protection Agency [EPA]: SIP Planning Information Toolkit: Control Techniques Guidelines and Alternative Control Techniques Documents. (2012). Retrieved November 19, 2013 from http://www.epa.gov/glo/SIPToolkit/ctgs.html

iii. EPA 450/2-77-026 "*Guideline for Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals*" dated October 1977 (applicable to Rule 4621)

This CTG is related to the control of VOC emissions from tank truck terminals with daily throughputs of greater than 76,000 liters of gasoline. Since this CTG only applies to the loading of tank trucks, only the sections of District Rule 4621 that apply to tank truck loading will be evaluated.

This CTG identifies the control of VOCs from tank truck gasoline loading terminals as having an emission limit of 80 mg-hydrocarbon/L-gasoline loaded. District Rule 4621 requires that the VOC emissions from the transfer of gasoline from a stationary storage tank to a gasoline tank truck shall be controlled by 95%. The CTG lists the emission factor for hydrocarbon emissions generated during submerged fill (top or bottom) gasoline loading operations is 600 mg/liter transferred. Therefore, District Rule 4621 emission limit can be calculated as 30 mg/liter (600 mg/liter x (1 – 0.95)). Since this emission limit is lower than the one listed in the CTG, District Rule 4621 is more stringent than this CTG.

iv. EPA 450/2-77-035 "*Guideline for Control of Volatile Organic Emissions from Bulk Gasoline Plants*" dated December 1977 (applicable to Rule 4621)

This CTG outlines the design of control devices to control vapors from the loading and unloading activities at a gasoline bulk plant. The CTG discusses the effective control of VOC emissions with the installation of submerged fill pipes and vapor control systems. District Rule 4621 requires that all bulk plants shall be equipped with an ARB certified vapor recovery system for the loading racks. In addition, District Rule 4621 also describes inspection procedures to verify that the operation is operating leak free. The requirements in District Rule 4621 are equivalent to the control technology discussed in this CTG. Therefore, District Rule 4621 is at least as stringent as this CTG.

v. EPA 450/2-78-051 "*Control of Volatile Organic Compounds Leaks from Gasoline Tank, Trucks and Vapor Collection Systems*," dated December 1978 (applicable to Rule 4621)

This document establishes regulations for VOC emissions from vapor recovery systems (federal Stage I sources) associated with gasoline delivery trucks, bulk terminals, bulk plants, and gasoline service stations. The approach described in this document is based on good maintenance practices through periodic monitoring and testing of the suspected leak points. Since all control techniques established by this CTG document are already being implemented and the proposed amendments to District Rule

4621 do not establish any new design criteria, the District rule is already as stringent as the CTG.

2. EPA Alternative Control Techniques (ACT) Document

Based on the EPA ACT list[3], there is no ACT for this source category.

3. EPA New Source Performance Standard (NSPS)

Based on the NSPS list in 40 CFR 60[4], there is no NSPS requirements for this source category.

4. National Emission Standard for Hazardous Air Pollutants (NESHAP) and Maximum Achievable Control Technology (MACT)

Based on the NESHAP and MACT lists in 40 CFR Part 63[5], Subparts BBBBBB and CCCCCC are applicable to this source category.

40 CFR Part 63, Subpart BBBBBB (*National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities)* establishes national emission limitations and management practices for hazardous air pollutants (HAP) emitted from area source gasoline distribution bulk terminals, bulk plants, and pipeline facilities.

40 CFR Part 63, Subpart CCCCCC (*National Emission Standards for Hazardous Air Pollutants for Source Category: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities)* establishes national emission limitations and management practices for HAPs emitted from the loading of gasoline storage tanks at gasoline dispensing facilities.

EPA finalized approval of the 2007 amendments to District Rules 4621 and 4622 on October 30, 2009 and deemed these rules as being at least as stringent as established RACT requirements: 74 FR 56120, http://www.gpo.gov/fdsys/pkg/FR-2009-10-30/pdf/E9-26178.pdf.

[3] Environmental Protection Agency [EPA]: SIP Planning Information Toolkit: Control Techniques Guidelines and Alternative Control Techniques Documents. (2012). Retrieved November 19, 2013 from http://www.epa.gov/glo/SIPToolkit/ctgs.html

[4] Environmental Protection Agency [EPA]: 40 CFR 60-Standards of Performance for New Stationary Sources (NSPS). (2013). Retrieved November 19, 2013 from http://www.tceq.state.tx.us/permitting/air/rules/federal/60/60hmpg.html

[5] Environmental Protection Agency [EPA]: 40 CFR 61-National Emission Standards for Hazardous Air Pollutants (NESHAPS). (2012). Retrieved November 19, 2013 from http://www.tceq.texas.gov/permitting/air/rules/federal/63/63hmpg.html

Since the requirements of Subparts BBBBBB and CCCCCC have not been strengthened since the RACT approval, current District Rules 4621 and 4622 are at least as stringent as NESHAP and MACT standards.
In addition, neither subpart has any requirements for back pressure testing. Therefore, the proposed amendment to District Rule 4621 to reduce the frequency of the dynamic back pressure test from once every twelve months to once every five years, does not relax any federal requirements. The proposed amendment would actually reduce VOC emissions inherent to the test procedure.

5. EPA Best Available Control Technology (BACT) Requirements

There are no EPA BACT requirements listed for this source category listed in EPA's RACT/BACT/LAER Clearinghouse (RBLC): http://cfpub.epa.gov/RBLC/.

6. EPA Policy on Recordkeeping

EPA has a policy that mandates stationary sources keep and maintain records for at least five years. District Rules 4621 and 4622 already requires the subject sources to keep and maintain records for five years and the current rule amendments are not relaxing this requirement. Therefore, District Rules 4621 and 4622 are as stringent as EPA policy on recordkeeping.

III. CONCLUSION

Based on the above analysis, District staff found that the proposed amendments to District Rules 4621 and 4622 would not conflict with any District or federal rules, regulations, or policies covering similar stationary sources.

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