VENTURA COUNTY APCD
STAFF REPORT
Rule 74.33, Liquefied Petroleum Gas Transfer or Dispensing
January 2015

EXECUTIVE SUMMARY

Staff is proposing a new rule to reduce the reactive organic compound (ROC) emissions from the transfer or dispensing of Liquefied Petroleum Gas (LPG). LPG is considered to be an ROC, and it is defined as an organic compound having a vapor pressure not exceeding that allowed for commercial propane. The basis for this rule development is the 2012 adoption of South Coast AQMD Rule 1177, LPG Transfer and Dispensing.

This rule development will implement an All Feasible Measure as required by the California Clean Air Act (HSC Section 40914). Ventura County APCD's 2007 Air Quality Management Plan relies on adopting All Feasible Measures to help attain the state ambient ozone air quality standard.

This rule is intended to apply to the transfer of LPG to or from any cargo tank, any stationary or portable storage tank, or any cylinder, with the exception of cylinders installed on recreational vehicles. Also, the proposed rule would not apply to the transfer of LPG into any container having a water capacity of less than four (4) gallons. Lastly, the rule would not apply to any LPG truck loading facility subject to Rule 71.3, Transfer of ROC Liquids and Rule 74.10, Components at Crude Oil and Natural Gas Production and Processing Facilities, since these rules already regulate fugitive and transfer ROC emissions from these facilities.

Staff is proposing to reduce ROC emissions in this fugitive emission source category by requiring operators to replace or retrofit certain components used in the LPG transfer process with low-emission versions. These component replacements are represented by two main categories in the rule: Low Emission Fixed Liquid Level Gauges (FLLG), otherwise known as bleeder valves, and Low Emission Connectors.

FLLGs contain a dip tube and an orifice that is designed to emit fugitive ROC emissions during the LPG filling process when opened to prevent overfilling the container. The rule will require that all containers subject to the rule have either a Low Emission FLLG, which has a smaller orifice (0.025 inches instead of 0.055 inches) or transfer LPG using a fill by weight technique or alternative technology that monitors the maximum fill level without the use of an FLLG. According to an industry report from the Battelle Institute, the orifice change will result in reduction of vapor emissions by 72 to 76 percent and reduction of liquid emissions by 58 to 60 percent.

The other main component category impacted by proposed rule requirements is the Low Emission Connector. Low Emission Connectors are defined in proposed Rule 74.33 as any component, including an adapter, hose, fitting, valve, or coupling used to transfer LPG from one container to another, and is designed to result in the maximum release of four (4) cubic centimeters of LPG when disconnected. Appendix 1 to this staff report contains a list of qualified Low Emission Connectors referenced by the rule to assist with rule compliance and enforcement. Parts not listed in this appendix may still comply with the rule if product manufacturer documentation indicates a maximum emission release of 4 cubic centimeters. Manufacturers or suppliers may apply in writing for new or existing parts to be added to the official qualified list, subject to APCD approval.

Another ROC control measure proposed in Rule 74.33 is the establishment of Leak, Detection, and Repair (LDAR) program at LPG Bulk Plants and LPG Storage and Transfer facilities. This program will require daily physical leak checks and monthly inspections using the bubble test method or EPA Method 21. Any component found leaking is tagged and removed from service until the leak has been repaired.

The estimated ROC emission reductions are 104 tons per year using control measure effectiveness of 73 percent. This estimate is based on a comparative analysis of a source survey performed by the South Coast AQMD, which showed an emission inventory of 8.6 tons of VOC emissions per day in 2009, and a VOC emission reduction of 6.1 tons of VOC per day in the South Coast district.

The proposed new rule will affect ROC emissions from LPG Transfer at forklift filling, retail sales (including filling 5 gallon BBQ tanks but will not affect tank exchange programs), residential heating, vehicle filling, commercial operations, industrial operations, LPG bulk plants, and LPG storage and dispensing facilities. Operations that use LPG as a fuel, such as tank degassing operations or portable asphalt plants, are also subject to the LPG transfer requirements of Rule 74.33. Outside of the oilfield, none of the LPG transfer facilities are currently subject to APCD permit requirements, and no new permit requirements are being proposed. Enforcement of the new rule requirements will be facilitated by new recordkeeping and reporting requirements.

The overall cost-effectiveness of the proposed ROC control measure is approximately $0.85 per pound of ROC reduced based on a cost analysis performed by SCAQMD. This is a reasonable ROC control cost especially compared with the $9 per pound of ROC required to comply with the Best Available Control Technology (BACT) requirements for new or modified emission sources.

This report contains five additional sections: (1) Background, (2) Proposed Rule Requirements, (3) Comparison of Proposed Rule Requirements with Other Air Pollution Control Requirements, (4) Impact of the Proposed Rule, and (5) Environmental Impacts of Methods of Compliance. The first section provides background information including regulatory history, air pollution control technology and source description. The second section explains the key features of the proposed requirements. The third section compares the proposed requirements with existing federal requirements and Best Available Control Technology (BACT). The fourth section is an analysis of the proposed amendment's effect on ROC emissions, cost-effectiveness, and socioeconomic impacts. The last section examines the environmental impacts of compliance methods and the mitigations of those impacts.

BACKGROUND

LPG Introduction

LPG is a petroleum product consisting of propane, propylene, butane, and butylenes, and is commonly referred to as propane. The main components are propane and butane, and LPG is considered to be an ROC compound, as a precursor to ambient ozone formation even though the relative reactivity is at the lower end of the range of organic compounds.

LPG is colorless and odorless and is a vapor under atmospheric conditions. It must be stored, transported, and transferred to pressurized containers to remain in a liquid state. It is 1.5 times heavier than air and very flammable, which is why LPG usage has been regulated for years under fire and safety regulations. The National Fire Protection Association Code 58 is the benchmark for LPG storage and transfer safety. Odorants such as ethyl mercaptan are added to the LPG to warn users of leaking gas.

LPG Fugitive Emissions

LPG is produced at several crude oil and natural gas production and processing facilities in the county. Once refined and odorized, the LPG is trucked to local bulk plants, retail storage and transfer facilities, and commercial and retail users.

Table 1 shows the wide range of sales categories and specific uses for LPG. Fugitive emissions of LPG occur with each transfer from one compressed tank to another. Although a completely enclosed pressurized system is needed to maintain the liquid state, fugitive emissions still occur. The sources of these LPG fugitive emissions can be categorized as follows:

- FLLG (Bleeder Valves) used as a safety device to prevent overfill of containers
- Disconnection of transfer lines after filling
- Leaks in the equipment used for transfer

Table 1. LPG Sales Categories per NPGA

Category	Description
Residential	**Home heating/cooking/hot water and Recreational Vehicles**
Commercial	**Motels, Restaurants, Laundries**
Chemical	**Raw material for chem processes**
Fuel	**Vehicles, Forklifts, Oilfield Drilling, Degassing, Asphalt Batch Plants**
Agriculture	**Tractors, Irrigation pumps, space heating, cooking, crop drying, flame cultivation**
Retail Sales	**Cylinder filling and exchange**
Industrial	**Standby fuel for manufacturing, space heating, flame cutting, metallurgical furnaces**

Regulatory Basis: SCAQMD Rule 1177

South Coast AQMD Rule 1177, LPG Transfer and Dispensing, was adopted on June 1, 2012, and is the basis for adoption of Rule 74.33 as an All Feasible Measure under Health and Safety Code Section 40914 of the California Clean Air Act. Ventura County is currently a non-attainment area for both the state and federal ambient ozone standards. Given this status, we are required under state law to adopt All Feasible Measures. Staff has determined that the proposed rule is an All Feasible Measure based on the following factors:

- Proposed rule will reduce a significant amount of ROC emissions, over 104 tons per year.
- ROC control requirements involve replacement or retrofit of subject components with off-the-shelf parts.
- Cost-effectiveness is very reasonable at less than $0.85 per pound of ROC reduced.

The South Coast AQMD worked closely with the propane industry represented by the Western Propane Gas Association. SCAQMD began their rule

development process in 2010, and had seven working group meetings and 13 field visits to bulk loading and dispensing facilities. In addition, the industry association (Western Propane Education and Research Council) has been providing rebates every year since 2005 at 75 percent of the cost of low-emission equipment (up to $150,000 per year) to affected industry.

Emission Source Inventory and ROC Emission Reductions

The estimate of liquefied petroleum gas (LPG) emissions and reductions from proposed Rule 74.33 were based on South Coast AQMD's emission estimation methodology described in their Final Staff Report for Proposed Rule 1177, Liquefied Petroleum Gas Transfer and Dispensing (Rule 1177 Staff Report) Appendix B 'Emission Inventory Calculations', June 2012. Total estimated ROC emission reductions for Ventura County are approximately 104 tons/year. This is very similar to a simpler estimate using population ratios of the two districts, which is about 4.8 percent.

Emissions and Reductions

Rule 1177 Staff Report Appendix B describes how South Coast AQMD calculated LPG ROC emissions by end-use sector from two sources: (1) venting of LPG through fixed liquid level gauges (FLLG) used as overfill safety devices on pressurized receiving containers, tanks and cylinders, and (2) volatilization of entrapped LPG through connectors when transfer lines are disconnected. ROC emissions associated with a third source, transfer and dispensing equipment leaks, were not quantified.

FLLG venting emissions occur for vapor and liquid forms of LPG, and depend on the number of filling events, container filling time and whether gravity or pump assisted pressure filling is used to fill the receiving container. Disconnect emissions occur for vapor and liquid forms of LPG and depend on the number of disconnect events and the entrapment volume for a connector type. The number of container filling and disconnect events depends on annual LPG usage and average tank fill volume. Each end-use market sector has particular container configurations, fill times, fill volumes and product transfer methods.

Emission reductions for low-emission FLLG are assumed to be 50%, except for gravity-filled forklifts. Low-emission connector emission reductions depend on the difference between current connector entrapment volume and a maximum release volume of four cubic centimeters, with control efficiency ranging from 80%-99% depending on the type of connector.

Analysis of Emission Summary

Total LPG transfer and dispensing ROC emissions for Ventura County is about 142 tons/year, with over 88% emissions from FLLG. Gravity-fill forklifts contribute 44% of total emissions, followed by 22% from sales-to-retail on-site cylinder re-filling, 15% from pump-fill forklifts, and 9% from residential heating.

Total ROC emission reductions area are about 104 tons/year, representing 73% overall control. Emission reductions are 71% for FLLG and 92% for connectors. FLLG contribute 85% of the total emission reductions. Gravity-fill forklifts provide 56% of total emission reductions, followed by sales-to-retail on-site cylinder re-filling (19%), pump-fill forklifts (11%) and residential heating (6%).

The largest reductions are for gravity-fill forklifts with 93%, almost entirely from FLLG. FLLG emission reduction control efficiency is 50% for all sector subcategories except gravity-fill forklifts, which has 93%. According to the Rule 1177 Staff Report, it is estimated fueling fill time for gravity-fill forklifts using low emission FLLGs would increase by five to six times, and would exceed half an hour. As a result, forklift operators would likely use pump filling or LPG cylinder exchange instead of low emission FLLGs, leading to greater emission reductions (Rule 1177 Staff Report page 22 and Appendix B, table footnote on page B-6).

PROPOSED RULE 74.33 REQUIREMENTS

Applicability and Purpose (Section A)

This rule applies to equipment used to transfer and store Liquefied Petroleum Gas (LPG), commonly known as propane. The purpose of this rule is to reduce ROC emissions that escape during these transfer operations or from leaking equipment.

Exemptions (Section E)

The proposed rule will not apply to LPG tanker truck loading facilities in the oilfield because this equipment is already regulated to reduce ROC emissions by VCAPCD Rule 71.3, Transfer of ROC Liquids, and Rule 74.10, Components at Crude Oil and Natural Gas Production and Processing Facilities.

The proposed rule applies to almost all sizes of LPG containers including large stationary tanks, cargo tanks, residential and commercial storage tanks, and small residential portable tanks and cylinders. There is small tank exemption for the transfer of LPG into a container with a water capacity of less than 4 gallons. Also, LPG cylinders dedicated and installed on recreational vehicles are exempt from the rule requirements.

Proposed Equipment and Operation Requirements (Section B.1 – LPG Bulk Plants)

The proposed rule will reduce ROC emissions from LPG Bulk Loading Facilities by requiring an LPG vapor recovery or equalization system, capable of recovering all LPG vapors. An LPG Bulk Loading Facility is defined in Section H as having one or more stationary storage tanks with a water capacity of 10,000 gallons or more.

The vapor return lines and liquid transfer lines shall be both vapor tight and liquid tight during LPG transfer. Vapor tight is defined in Section H as 10,000 ppm or lower using EPA Method 21, calibrated with methane. Liquid tight is defined as not having a liquid leak which exceeds 3 or more drops per minute or exhibiting a visible liquid mist.

LPG Transfer and Dispensing Facilities (Section B.2)

The equipment and operation requirements at LPG Transfer and Dispensing Facilities are outlined in Section B.2. A LPG Transfer and Dispensing Facility is defined in the rule as a stationary facility having one or more stationary tanks and associated equipment that receives, stores, transfers or dispenses LPG to stationary storages, cargo tanks or portable storage tanks.

The facility storage tank(s) shall meet one or both of the following conditions:
1. The FLLG is closed during LPG transfer; or
2. A low emission FLLG shall be installed.
Whenever the tank is taken out of or put into service, the low emission FLLG shall be installed, but no later than January 1, 2017.

The cargo tank(s) shall meet one or both of the following conditions:
1. Any FLLGs are closed during LPG transfer.
2. Low emission FLLG(s) shall be installed.
If the cargo tank is purchased new or manufactured after the rule adoption date, it shall be equipped with low emission FLLG(s). Whenever the cargo tank is evacuated, the operator shall install the low emission FLLG(s) prior to returning to service. The deadline for this installation is no later than 5 years after its last tank hydro testing that occurred prior to the rule adoption date.

If the container receiving LPG is a cylinder or portable storage tank, it shall meet one or both of the following conditions:
1. The FLLG is closed during LPG transfer.
2. A low emission FLLG is installed by Jan. 1, 2017.

No person shall transfer LPG from one container to another without using Low Emission Connectors that are both leak tight and vapor tight, except when actively connecting or disconnecting the connector. LPG Low Emission Connectors are defined in the rule as any component, including adapter, hoses, fittings, valves, or coupling used to transfer LPG from one container to another and is designed to result in a maximum release of four (4) cubic centimeters of LPG when disconnected. The deadline for installing the Low Emission Connectors is no later than 18 months after the rule adoption date.

A list of qualifying Low Emission Connectors will be published on the APCD website and is listed in Appendix 1 to this staff report. Parts not included on this list may still comply with the rule provided product manufacturer documentation is provided to APCD personnel upon request. This document must contain, at a minimum, the vendor name, part number, and maximum emissions release in cubic

centimeters for each part. Manufacturers or suppliers may request in writing that new or existing parts be added to the official qualified list, subject to APCD approval.

Mobile Fueler Operations (Section B.3)

The requirements for Mobile Fueler Operations are very similar to those proposed for LPG Transfer and Dispensing Facilities. The SCAQMD category for LPG Transfer and Dispensing facilities has been subdivided into these two categories in proposed VCAPCD Rule 74.33 (Sections B.2 and B.3) for clarification purposes. A facility is normally only considered to be a stationary source rather than a mobile source in all our other rules. The separation into two categories preserves this concept by placing the mobile operations in its own category.

Section B.3 regulates ROC emission from LPG transfers at mobile fueler operations. A mobile fueler is defined in the rule as any cargo tank, railroad tanker car, tank truck or trailer, including a bobtail truck, which is used to transport LPG.

The receiving stationary storage tank shall meet one or both of the following conditions:
1. The storage tank FLLG is closed during LPG transfer.
2. Low emission FLLG shall be installed.

If the storage tank is taken out of or put into service, the low emission FLLG shall be installed prior to returning it to service. The installation deadline is Jan. 1, 2017.

The cargo tank, if equipped with an FLLG, shall meet one or both of the following conditions:
1. The cargo tank FLLG is closed during filling.
2. Low emission FLLG shall be installed.

If the cargo tank was manufactured after the rule adoption date, it shall be equipped with low emission FLLGs. Whenever the cargo tank is evacuated, the operator shall install low emission FLLGs prior to returning it to service. The installation deadline is no later than five years after the last tank hydro testing that occurred prior to the rule adoption date.

If the receiving tank is a cylinder or portable storage tank, it shall meet one or both of the following:
1. Cylinder or portable tank FLLG is closed during LPG transfer.
2. Cylinder or portable storage tank is equipped with a low emission FLLG prior to Jan. 1, 2017.

No person shall transfer LPG from one container to another without using Low Emission Connectors that are both leak tight and vapor tight, except when actively connecting or disconnecting the connector. LPG Low Emission Connectors are defined in the rule as any component, including adapter, hoses, fittings, valves, or coupling used to transfer LPG from one container to another and is designed to result in a maximum release of four (4) cubic centimeters of LPG when disconnected. The deadline for installing the Low Emission Connectors is no later than 18 months after rule adoption date.

A list of qualifying Low Emission Connectors will be published on the APCD website and also is listed in Attachment 1 of this staff report. Parts not included on this list may still comply with the rule provided product manufacturer documentation is provided to APCD personnel upon request. This document must contain, at a minimum, the vendor name, part number, and maximum emissions release in cubic centimeters for each part. Vendors may request in writing that new or existing parts be added to the official qualified list, subject to APCD approval.

Section B.3.e requires that any mobile fuelers equipped with a vapor recovery or equalization system be maintained and operated in accordance with the manufacturer specifications.

Leak Detection and Repair Program (Section C)

Section C outlines the leak detection and repair (LDAR) requirements for LPG Bulk Loading Facilities and LPG Transfer and Dispensing Facilities. There are four (4) requirements under this LDAR program:
1. Daily physical leak checks for leaks or indications of leaks.
2. Bubble Test or EPA Method 21 inspections of LPG transfer operations at least once every 90 days.
3. Employee training program.
4. Leak Repairs and Recordkeeping – Any liquid or vapor leak shall be removed from service and tagged, and repaired or replaced prior to returning it to service. Written records shall be kept for all leaks requiring repair.

Leaks identified by operators and repaired will not be considered violations of the liquid or vapor tight requirements of the rule.

Recordkeeping Requirements (Section D)

The recordkeeping requirements are needed to assist the operators of LPG Bulk plants and LPG Transfer and Dispensing Facilities and APCD compliance staff to determine the compliance status of the facility. Section D.1 requires that these facilities maintain records of Low Emission FLLGs and Low Emission

Connectors installed to comply with the rule requirements. These should be kept for a minimum of 5 years and be made available to APCD personnel upon request.

In addition, these facilities shall maintain documentation originating from the parts manufacturers that shows that any Low Emission FLLG or Low Emission Connector used to comply with the rule requirement meets the low emission specifications as defined in Section H. Low Emission FLLGs are required to have a No. 72 orifice size (0.025 inches) and Low Emission Connectors are designed for a maximum emission release of 4 cubic centimeters. (Section D.3).

Each operator of a Mobile Fueler or Railroad Tank Car equipped with an LPG vapor recovery or equalization system shall maintain records demonstrating the system is being maintained in accordance with manufacturer's specifications. (Section D.2)

Reporting Requirements - LPG Bulk Facilities (Section D)

Section D.5 requires that LPG Bulk Facilities perform an initial end of year inventory for the year 2016 of all facility-located LPG Low Emission Connectors and facility owned or leased mobile fuelers. The deadline for submitting this report to APCD is July 1, 2017. This inventory shall include the specific storage equipment or transfer equipment or operation involved, and the manufacturer and part ID number for all the installed Low Emission Connectors.

Section D.6 requires that all LPG Bulk Facilities perform end of year inventories of all facility located Low Emission FLLGs and owned or leased mobile fuelers having Low Emission FLLGs for the years 2016-2020. The deadline for submitting these reports to APCD shall be July 1st of the following year. This inventory shall include a summary, by size and classification, and include the associated number of installed Low Emission FLLGs.

Test Methods (Section F)

Measurements of vapor tight leak concentrations (defined as 10,000 ppm calibrated with methane) shall be determined using EPA Method 21. This method requires the use of portable VOC analyzer to locate organic vapor emissions. This analyzer must be calibrated before the inspection on the day of the inspection. As an alternative, the rule allows the use of the bubble test method for operators to do their own inspections, as required by the Leak Detection and Repair Program. (Section C)

COMPARISON OF PROPOSED RULE REQUIREMENTS WITH OTHER AIR POLLUTION CONTROL REQUIREMENTS

Health and Safety Code Section 40727.2 requires Districts to compare the requirements of a proposed revised rule with other air pollution control requirements. These other air pollution control requirements include federal New Source Performance Standards (NSPS), federal National Emissions Standards for Hazardous Air Pollutants (NESHAPS), Best Available Control Technology (BACT), and any other District rule that applies to the same equipment. In addition, Section 183(e) of the Clean Air Act authorized EPA to regulate VOC emissions from consumer and commercial products via a national rule or a Control Techniques Guideline (CTG). At this time, EPA has not adopted a national rule or a CTG to reduce VOC emissions from the transfer of LPG. A review of current BACT determinations from the South Coast AQMD and California Air Resources Board indicates that BACT for this source category has not been defined for any VOC emissions. No existing Ventura County APCD rule has requirements that regulate the VOC emissions resulting from LPG transfer operations. In summary, there are no conflicts between the proposed Rule 74.33 and any other pertinent air pollution control regulations.

IMPACT OF THE PROPOSED RULE

ROC Emissions Impacts

The estimated ROC emission reductions of 104 tons per year from this source category are significant, and all emission reductions are needed to reach the federal and state ambient ozone air quality standards. The availability, feasibility, and cost-effectiveness of the replacement low emission FLLGs and Low Emission Connectors make this proposal worthwhile.

Cost-Effectiveness

Cost information from the SCAQMD Rule 1177 Staff Report estimates cost-effectiveness at about $0.85 per pound of ROC reduced, excluding the savings realized from recovery of LPG product. This indicates that the proposal is very cost-effective especially relative to new sources, which may be required under New Source Review to spend up to $9 per pound of ROC reduced to install best available control technologies (BACT).

Incremental Cost-Effectiveness Analysis

Health and Safety Code Section 40920.6(a) requires districts to identify one or more potential control options, assess the cost-effectiveness of those options, and calculate the incremental cost-effectiveness. Health and Safety Code Section 40920.6 also requires an assessment of the incremental cost-effectiveness for proposed regulations relative to ozone, carbon monoxide (CO), sulfur oxides (SOx), nitrogen oxides (NOx), and their precursors.

Incremental cost-effectiveness is defined as the difference in control costs divided by the difference in emission reductions between two potential control options achieving the same emission reduction goal of a regulation. The proposed adoption of Rule 74.33 will require the most stringent viable ROC controls for this source category, and no other viable control option can achieve the same amount of emission reductions. Therefore, the incremental cost-effectiveness analysis does not apply to this rulemaking.

Socio-Economic Impacts

Assembly Bill 2061 (Polanco), which became effective January 1, 1992, requires that the District Board consider the socioeconomic impacts of any new rule. The Board must evaluate the following socioeconomic information on proposed new Rule 74.33.

(1) The type of industries or businesses, including small business, affected by the rule or regulation.

The adoption of amendments to these rules may directly affect the following LPG transfer or filling operations:

- LPG Bulk Plants
- LPG Storage/Dispensing/Filling Facilities
- Forklift Filling Operations
- Commercial Operations
- Industrial Operations
- Agricultural Wind Machines
- Residential Heating
- Residential Cooking (BBQ) not including the 5gallon tank exchange program
- Oilfield Services
- Portable Asphalt Plants
- Portable Tank Degassing
- Tanker and Bobtail Trucks

(2) The impact of the rule amendments on employment and the economy of the region.

Revisions to these rules are not expected to have a negative impact on either employment or the economy of Ventura County. Worst-case cost estimates for the end user are not significant enough to impact employment. Implementation dates have been delayed to spread out the costs over several years.

(3) The range of probable costs, including costs to industry or business, including small business, of the rule or regulation.

Based on the SCAQMD staff report, a maximum cost-effectiveness of $0.85 per pound of ROC reduced may be expected for replacement with Low Emission FLLGs and Low Emission Connectors. This cost analysis does not include the cost saving from captured fuel.

(4) The availability and cost-effectiveness of alternatives to the rule or regulation being proposed or amended.

The proposed new rule is the most cost-effective control option, which involves LPG transfer, and no viable control options are currently available.

(5) The emission reduction potential of the rule or regulation.

The anticipated emission reduction potential of the proposed rule is about 104 tons per year of ROC emissions. These emission reductions result from the use of Low Emission FLLGs and Low Emission Connectors.

(6) The necessity of adopting, amending, or repealing the rule or regulation in order to attain state and federal ambient air standards pursuant to Chapter 10 (commencing with Section 40910).

Ventura County is classified as a serious nonattainment area for the federal Ambient Air Quality Standards for ozone. These proposed rule amendments will reduce ROC emissions that are precursors to the formation of ozone. According to the 2007 AQMP, these emission reductions will help the District in its effort to attain the standards. California Health and Safety Code Section 40914(b)(2) requires that the District adopt every feasible measure to reduce ozone precursors.

ENVIRONMENTAL IMPACTS OF METHODS OF COMPLIANCE

California Public Resources Code Section 21159 requires the District to perform an environmental analysis of the reasonably foreseeable methods of compliance. The analysis must include the following information on proposed new Rule 74.33:

(1) An analysis of the reasonably foreseeable environmental impacts of the methods of compliance.
(2) An analysis of the reasonably foreseeable mitigation measures.
(3) An analysis of the reasonably foreseeable alternative means of compliance with the rule or regulation.

Table 2 lists all reasonably foreseeable compliance methods, the environmental impacts of those methods, and measures that could be used to mitigate the environmental impacts.

Table 2
Environmental Impacts and Mitigations of Methods of Compliance

Compliance Methods (including all reasonably foreseeable alternative means of compliance)	Reasonably Foreseeable Environmental Impacts	Reasonably Foreseeable Mitigation Measures
Retrofit of Existing Tanks with Low Emission FLLGs	Air Quality Impacts: Possible mobile source emissions (trucks) related to tank modifications.	Operators may retrofit tanks during regular maintenance service calls or prior to refilling empty tanks (no new trips).
Install Low Emission Connectors at LPG Transfer and Dispensing Facilities.	Air Quality Impacts: Possible mobile source emissions (trucks) related to new component installations.	Retrofits may be done onsite by operators or service technicians as part of regular maintenance calls (no new trips).
Convert existing gravity fill forklift cylinder operation to exchange program.	Air Quality Impacts: Possible mobile source emissions (truck) related to truck deliveries of filled cylinders.	Fewer LPG Bobtail bulk delivery trucks would offset the increase in filled cylinder delivery trucks.
Convert existing gravity fill forklift cylinder operation to a pressure fill system with larger tank and pump motor.	Excessive Noise Impacts: The new pump motor may increase the noise levels during operations	Sound walls or enclosures may be used to limit the noise impacts.

This analysis demonstrates that the adoption of new Rule 74.33 will not have a significant effect on the environment due to unusual circumstances.

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DISCLAIMER

This report contains references to company and product names to illustrate product availability. Mention of these names is not to be considered an endorsement by the Ventura County Air Pollution Control District.

APPENDIX 1: QUALIFIED LOW EMISSION CONNECTORS

The parts listed in this Appendix 1 qualify as Low Emission Connectors, which include any component (including adapters, fittings, valves, or couplings) that are designed to result in the maximum emission release of 4 cubic centimeters of LPG when disconnected. Parts not listed in this table may still qualify as low emission connectors provided that product manufacturer documentation showing a maximum 4 cc emission release is provided to APCD personnel upon request. At a minimum, this documentation must indicate the vendor name, part number, and maximum emissions release in cubic centimeters for each part.

TRANSFER OPERATIONS	**VENDOR**	**PART NUMBER**	**EMISSIONS (Cubic Cm)**
Transport to Tank	RegO	A214A10	1.5
	RegO	A2141A16	3.0
	Squibb Taylor	TP5-1001	1.2
	Squibb Taylor	TP6-1001	3.11
Unloading Only Bulkhead	Squibb Taylor	ST-L427B	0.06
Unloading Only Bulkhead	Squibb Taylor	ST-L427K	4.0
	TODO	2	0.25
	Marshall Excelsior	ME807-16(S)	0.09
Railcar to Tank	RegO	A2141A10	1.5
	RegO	A2141A16	3.0
	Squibb Taylor	TP5-1001	1.5
	Squibb Taylor	TP6-1001	3.11
	TODO	2	0.25
Storage to Bobtail	RegO	A2141A10	1.5
	RegO	A2141A16	3.0
	Squibb Taylor	ST-L427B	0.06
	Squibb Taylor	ST-L427K	4.0
	Squibb Taylor	TP5-1001	1.2
	Squibb Taylor	TP6-1001	3.11
	TODO	2	0.25
	Marshall Excelsior	ME815IBC-16	0.16
	Marshall Excelsior	ME825IBC-16	0.16
	Marshall Excelsior	ME815IBC-16BRK	0.16
	Marshall Excelsior	ME806-16 (S)	0.09
	Marshall Excelsior	ME866-8	0.16
	Marshall Excelsior	ME866A-8	0.16
	Marshall Excelsior	ME866-10	0.16
	Marshall Excelsior	ME866A-10	0.16
	Marshall Excelsior	ME867-10	1.96
	Marshall Excelsior	ME867A-10	1.96
	Marshall Excelsior	ME868-16	3.11
	Marshall Excelsior	ME868A-16	3.11
	Marshall Excelsior	ME868-24	3.11
	Marshall Excelsior	ME868A-24	3.11

APPENDIX 1. QUALIFIED LOW EMISSION CONNECTORS (Continued)

TRANSFER OPERATIONS	VENDOR	PART NUMBER	EMISSIONS (Cubic Cm)
Bobtail/Customer Tanks	RegO	A7793A	0.02
	RegO	A7576/A7577/A7797	2.0
	RegO	A3179B	2.0
	RegO	8475-50L	0.4
	RegO	L7579	2.14
	RegO	G8475RL	2.13
	RegO	PG8475RL	2.13
	RegO	G8475RLW	2.13
	RegO	8593AL16.0	2.13
	Marshall Excelsior	ME800 series	0.50
	Squibb Taylor	AL343/AL424	0.6
	Squibb Taylor	L339	0.6
	Squibb Taylor	AL363/AL366	0.6
	Fisher	N480	4.0
	TODO	1	0.15
	LGE Gas Guard	LG1E	2.6
	LGE Gas Guard	LG1DN	2.0
Forklift Cylinders	RegO	7193L-10A/7193K-10B	0.4
	RegO	7141M/7141F	0.5
	RegO	7647SC	2.13
	Marshall Excelsior	ME795	0.30
	Marshall Excelsior	ME790	1.5
	Marshall Excelsior	ME790SN	0.30
	RegO	A7793A	0.02
	Squibb Taylor	AL343/AL424	0.6
	Squibb Taylor	L339/L364/L424	0.6
	FasTest	GLP12128AC	<4.0
	Fisher	N480	4.0
	LGE Gas Guard	LG20	2.6
Other Motor Fuel	RegO	7193L-10A/7193K-10B	0.4
	RegO	7141M/7141F	0.5
	RegO	7647SC	2.13
	Marshall Excelsior	ME220M/ME220F	1.5
	Marshall Excelsior	ME220FSN	0.3
	Marshall Excelsior	ME 800 Series	0.50
	RegO	A7793A	0.02
	Squibb Taylor	AL343/AL424	0.6
	Squib Taylor	AL363/AL366	0.6
	Fisher	N480	4.0
	LGE Gas Guard	LG20	2.6

APPENDIX 1. QUALIFIED LOW EMISSION CONNECTORS (Continued)

TRANSFER OPERATIONS	VENDOR	PART NUMBER	EMISSIONS (Cubic Cm)
20# Cylinders	Squib Taylor	L422	1.4
	Squib Taylor	L423/L365	0.4
	FasTest	GLP04120AC	<4.0
Dispensers	RegO	A2141A6,A2141A6L	0.74
	RegO	A2141A8,A2141A8L	1.0
	RegO	L7579	2.14
	RegO	8593AL16.0	2.13
	RegO	A7793A	0.02
	Squib Taylor	L422	1.4
	Squib Taylor	TP0	0.62
	Squib Taylor	TP5-1001	1.2
	Squib Taylor	TP6-1001	3.11
	Marshal Excelsior	ME860S-6/ME861S-6	0.75
	Marshal Excelsior	ME860S-8/ME861S-8	1.2
	Marshal Excelsior	ME860S-10/ME861S-10	2.0
Customer Tank Fill Valves	RegO	L7579	2.14
	RegO	G8475RL, PG8475RL	2.13
	RegO	G8475RLW, 7647SC	2.13
	RegO	8593AL16.0	2.13