VENTURA COUNTY APCD

STAFF REPORT

Proposed Amendments to Rule 71.3, Transfer of Reactive Organic Compound Liquids and Rule 71, Crude Oil and Reactive Organic Compound Liquids

March 2021

EXECUTIVE SUMMARY

Staff is proposing amendments to Rules 71 and 71.3 to reduce Reactive Organic Compound (ROC) emissions from transfer operations of ROC liquids with a Modified Reid Vapor Pressure (MRVP) greater than or equal to 0.5 pounds per square inch absolute (psia). The newly proposed vapor control requirements are based on the recently revised Rule 4624 by San Joaquin Valley Air Pollution Control District (SJVAPCD).

This rule development will implement Every Feasible Measure as required by the California Clean Air Act, California Health and Safety Code (CHSC) Section 40914. Ventura County Air Pollution Control District's (VCAPCD or District) 2016 Air Quality Management Plan (AQMP) relies on adopting All Feasible Measures to help attain the state ambient ozone air quality standard. In addition, the adoption of amendments to these rules satisfies Assembly Bill (AB) 617, which was approved on July 26, 2017 by Governor Jerry Brown. As amended by Assembly Bill 617 (C. Garcia, Chapter 136, Statutes of 2017), Health and Safety Code section 40920.6(c) requires each local air district that is nonattainment for one or more air pollutant(s) to adopt an expedited schedule for the implementation of Best Available Retrofit Control Technology (BARCT) for each industrial source that, as of January 1, 2017, was subject to a specified market-based compliance mechanism, the Cap and Trade Program, and gives highest priority to those permitted units that have not modified emissions-related permit conditions for the greatest period of time. The adoption of the proposed amendments to Rule 71.3 is the District's third step in implementing the expedited BARCT rule adoption schedule approved on December 11, 2018 by the Ventura County Air Pollution Control Board (Board) to satisfy AB 617 requirements.

Currently, there are 75 loading facilities in Ventura County. Of these 75 loading facilities two (2) transfer LPG and have 99.5% vapor control requirements, four (4) have no active corresponding permit, two (2) are exempt from vapor control requirements due to low throughput and the remaining 67 are subject to the standard rule requirements. Due to existing equipment already being capable of meeting the increased vapor control requirements, the implementation date has been established as January 1, 2022. The State Implementation Plan (SIP) creditable emission reductions obtained by implementing the proposed emission limits is estimated at 0.8 tons of ROC per year beginning January 1, 2022, when the rule is fully implemented.

Additional changes are proposed by staff which improve rule clarity and improve District's ability to verify compliance for affected equipment.

BACKGROUND

Introduction

Rule 71.3, Transfer of Reactive Organic Compound Liquids applies to equipment used to transfer ROC liquids with a MRVP greater or equal to 0.5 psia while Rule 71, Crude Oil and Reactive Organic Compound Liquids provides definitions for all District 71.x rules. The main purpose of these rules is to limit ROC emissions which are precursors to ground-level ozone formation. Ventura County is currently designated as "serious" nonattainment for federal National Ambient Air Quality Standards and designated nonattainment for state Ambient Air Quality Standards for ground level ozone. Ventura County is required by the California Clean Air Act (California Health and Safety Code Section 40914) to adopt "every feasible measure" as an alternative requirement to reducing ozone precursor emissions by a minimum of five percent per year. The District considers this proposal a feasible measure that will reduce ROC emissions. This proposal also satisfies a Further Study Control Measure identified during the 2016 AQMP.

Assembly Bill 617

On July 26, 2017, AB 617 was approved by Governor Jerry Brown and focuses on reducing criteria pollutants and toxic air contaminants from stationary sources. Among the requirements of AB 617 is an expedited schedule for implementing BARCT for each industrial source that, as of January 1, 2017, was subject to the Cap and Trade Program and gives highest priority to those permitted units that have not modified emissions-related permit conditions for the greatest period of time. The highest priority would be given to older, higher-polluting units that will need to install retrofit emission control technology.

BARCT Implementation

California Health and Safety Code (CHSC) Section 40920.6(c), as amended by AB 617, requires that on or before January 1, 2018, each local air district that is nonattainment for one or more air pollutants must adopt an expedited schedule for the implementation of BARCT by the earliest feasible date. On December 11, 2018, the Board approved an expedited BARCT rule adoption schedule. This expedited schedule includes a tentative deadline of June 1, 2021 to adopt amendments to Rule 71.3, Transfer of Reactive Organic Compound Liquids.

Staff conducted an assessment of BARCT for this source category. BARCT is defined in the CHSC Section 40406 as "an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source." Consistent with state law, BARCT emission limits take into consideration environmental impacts, energy impacts, and economic impact. In addition to ROC reductions sought in the proposed amended rule, other potential environmental effects of the proposed rule were evaluated through the California Resource Code 21159 process.

BARCT emission limits for transfer equipment were determined by examining San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) Rule 4624 and comparing it with permitted facilities in Ventura County.

All permitted facilities subject to Rule 71.3 were reviewed for feasibility of emission reductions and cost-effectiveness in the rule development process. After investigation, staff did not find it necessary to conduct a feasibility study for the available technologies which achieve 95% control efficiency or determine cost effectiveness. These technologies have been utilized by facilities in our District for many years and do not need to retrofit to meet the proposed requirements and therefore are not subject to any additional costs.

ROC Emission Sources

Staff examined all permitted units subject to VCAPCD Rule 71.3. ROC emissions from equipment used to transfer ROC liquids, excluding pipelines, are regulated by VCAPCD's current Rule 71.3. Under Rule 71.3, the ROC emissions are reduced by requiring either a submerged fill pipe or bottom loading in addition to requiring vapor control of 90% control efficiency. There are 75 loading facilities in Ventura County. Of these 75 loading facilities two (2) transfer LPG and have 99.5% vapor control requirements, four (4) have no active corresponding permit, two (2) are exempt from vapor control requirements due to low throughput and the remaining 67 are subject to the standard rule requirements. Emissions from all loading rack facilities accounted for 8.55 tons of ROC emissions in 2019.

BARCT Emission Limits and Other Considerations

The recommendation for the ROC BARCT emission limits were established using information gathered from existing VCAPCD regulations, existing permitted loading facilities in the District, regulatory requirements for other air districts, and the technology assessment. Both retrofit and new/replacement installations are considered. Once the initial limits are established, a cost-effectiveness determination is made at that initial limit. If the initial limit is not cost-effective, an alternative limit may be recommended. Unique circumstances are taken into consideration to distinguish alternative limits, provide alternative means for emission reductions, or to create provisions in the rule to address equipment where retrofit or replacement would otherwise not be cost-effective.

Vapor Control Technology

The primary vapor control technology used in Ventura County involves the routing of displaced gas for fuel gas systems, sales gas systems or flaring. Facilities which do not utilize the previously mentioned methods will

typically use carbon adsorption systems but may also use scrubbers or catalytic oxidation to control the release of ROCs.

PROPOSED AMENDMENTS TO RULE 71 and 71.3

Rule 71.3 (Section B)

Section B.2 added a sunsetting date of December 31, 2021 for the current emission control requirements. Section B.3 adds a 95% vapor control efficiency requirement beginning January 1, 2022, for facilities which transfer between 4,000 and 20,000 gallons of ROC liquid per day, or greater than 150,000 gallons per year. Section B.4 adds a vapor disposal requirement which limits emission to 0.08 lbs/1,000 gallons transferred beginning January 1, 2022, for facilities which transfer greater than 20,000 gallons of ROC liquid per day.

Rule 71.3 (Section D)

Section D.1 was amended to require all transfer equipment subject to subsections B.2, B.3, and B.4 to monitor one complete transfer operation every quarter. Section D.4 was added to allow facilities the ability to request the change of monitoring frequency to once per year after 5 consecutive loading operations have demonstrated compliance with rule requirements. This will improve District's ability to enforce the permit conditions and verify compliance with improved vapor control requirements.

Rule 71.3 (Section F)

Section F.1 and F.2 were amended to increase recordkeeping requirements from two to five years, as recommended by EPA.

Rule 71 (Section B)

Because Rule 71 provides the definitions to Rule 71.3, staff is recommending a few amendments to Rule 71 in order to implement BARCT for Rule 71.3.

To improve consistency between District rules, a definition was added for "Background" which mirrors the language used in VCAPCD Rule 74.10.

Additionally, "Leak" was redefined to be any major gas leak, minor gas leak, major liquid leak, or minor liquid leak. This was based on SJVUAPCD Rule 4624 and mirrors language of VCAPCD Rule 74.10.

Definitions were added for "Major Gas Leak", "Major Liquid Leak", "Minor Gas Leak", and "Minor Liquid Leak" to improve consistency with 74.10.

In response to comments received by industry, staff proposed the following:

- Language added to 71.B.15 which provides a repair period of 10 days for minor gas leaks that are identified by the facility for equipment not regulated by Rule 74.10. If the leaking equipment is not tagged and repaired within the specified period, it must then be reported as a breakdown and is then subject to Rule 32 requirements. Any untagged minor gas leaks identified by District staff will result in an NOV.
- Facilities which identify minor gas leaks will not be required to submit breakdown notification if repaired within the 10-day repair period.
- Staff will continue to not issue NOVs for any leaks identified and reported by the facility, if repaired according to the rule requirements.
- Minor gas leaks identified by the District staff is subject to NOVs and required to be submitted as a Deviation Report and, in turn, would be reported in the Title V Annual Compliance Certification (ACC).
- Language was changed in 71.B.15 which delays the compliance date for the change in definition of "Leak" to January 1, 2023.

COMPARISON OF PROPOSED RULE REQUIREMENTS WITH OTHER AIR POLLUTION CONTROL REQUIREMENTS

CHSC 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 BARCT, BACT, and any other District rule that applies to the same equipment.

A summary of other air pollution control requirements is presented in Table 1. All proposed vapor control requirements are more stringent than federal standards and comparable to neighboring district requirements. The proposed requirements are comparable to SJVAPCD Rule 4624 and more stringent than SCAQMD Rule 462 and SBCAPCD Rule 346.

Table 1 Comparison of Vapor Control Requirements

Daily Throughput (gallons)	SJVAPCD Rule 4624	SBCAPCD Rule 346	SCAQMD Rule 462	VCAPCD Proposed Rule 71.3
4,000 to 20,000	95% control	90% control	90% control	95% control
>20,000	0.08 lb/1,000 gal	90% control	0.08 lb/1,000 gal	0.08 lb/1,000 gal

IMPACTS OF THE PROPOSED RULE

ROC Emissions Impacts

Of the 75 loading racks subject to Rule 71.3, two (2) transfer LPG and have 99.5% vapor control requirements, four (4) have no active corresponding permit, two (2) are exempt from vapor control requirements due to low throughput and the remaining 67 are subject to the standard rule requirements. Of the 67 loading racks, none are expected to have to retrofit their equipment to meet the increased vapor control requirements. Staff estimated ROC emission reductions using the 2019 annual throughput records with a vapor control efficiency estimated to be 90%. The State Implementation Plan (SIP) creditable emission reductions from implementing the proposed emission limits are estimated at 0.8 tons of ROC per year.

These reductions from this source category are significant, and all emission reductions are needed to reach the federal and state ambient ozone air quality standards. Requiring greater vapor control requirements for permitted loading racks subject to Rule 71.3 is feasible and cost-effective to control ROC emissions.

Cost-Effectiveness

VCAPCD Staff does not anticipate any additional investment in equipment or maintenance and operations to meet the proposed vapor control requirements and as such these emission reductions are considered cost-effective.

Incremental Cost-Effectiveness Analysis

CHSC 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. CHSC 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.

Staff conducted an incremental cost-effectiveness analysis based on the cost estimates for ROC vapor control equipment provided in the EPA Air Pollution Control Cost Manual. The alternative control option identified in this evaluation was to require vapor control which results in ROC emissions less than 0.08 lb/1,000 gallons of liquid transferred for all transfer operations. The estimated cost to comply with this alternative control option was estimates to be $1,900 per loading rack which would reduce ROC emission by an additional 3 tons per year with an incremental cost-effectiveness of $42,400 per ton of ROC reduced. The high cost of this alternative control option disqualifies it as a cost-effective control measure. For that reason, the 95% vapor control requirement is being kept for all but the largest transfer operations.

Socio-Economic Impact

The provisions of Section 40728.5 of the California Health and Safety Code requires a socioeconomic impact analysis whenever the air quality or emissions limitations will be significantly affected. The Board must evaluate the following socioeconomic information on proposed revisions to Rule 71.3.

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

The amendments to this rule may directly affect the following industry:

- Crude Oil Production

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

Revisions to this rule 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.

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

Based on staff analysis of no additional cost the proposed amendments will have no impact on small business.

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

Proposed revisions to Rule 71.3 implement the most cost-effective control options, which involve greater control of vapors during ROC loading operations.

(5) The emissions reduction potential of the rule.

The anticipated emission reduction potential of the proposed rule is approximately 0.8 tons of ROC per year. These emission reductions result from improved vapor control.

(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 Selection 40910).

Ventura County is classified as a nonattainment area for both the state and federal Ambient Air Quality Standards for ozone. These proposed rule amendments will reduce ROC emissions which are precursors to the formation of ozone. According to the District's 2016 AQMP, these emissions reductions will help the District in its effort to attain the standards. CHSC 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 amendments to Rules 71 and 71.3.

(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.

All reasonably foreseeable compliance methods, the environmental impacts of those methods, and measures that could be used to mitigate the environmental impacts are summarized in Table 2 below.

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**
More frequent carbon replacement in adsorptions units	Air Quality Impacts: Possible mobile source emissions (trucks) related to more frequent media replacement.	Operators may retrofit add-on units to hold more media to reduce replacement frequency of media.
Installation of Catalytic Oxidation Add-on Controls	Solid Waste Disposal Impacts: May increase quantities of solid waste (spent catalyst material).	Catalyst Materials are usually valuable and are typically reclaimed and recycled.
	Noise Impacts: Fans and associated equipment with add-on controls may increase noise levels.	Sound wall or enclosures may be constructed around the control equipment

This analysis demonstrates that the adoption of amendments to Rule 71.3 will not have a significant effect on the environment due to unusual circumstances.