VENTURA COUNTY APCD
STAFF REPORT
Proposed Amended Rules 54, Sulfur Compounds and 42, Permit Fees
FINAL – November 2013

EXECUTIVE SUMMARY

The Ventura County Air Pollution Control District (District) is proposing revisions to District Rule 54, Sulfur Compounds, and Rule 42, Permit Fees. Staff is proposing to add the 2010 primary 1-hour sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) of 75 parts per billion as a ground or sea level concentration limit to Rule 54's current concentration limits. This value must be compared to a "design value" generated through ambient air monitoring or computer modeling of SO_2 concentrations at or beyond an affected facility's property line. Staff is also proposing to add a description of the design value that must be calculated to compare to the 2010 SO_2 NAAQS concentration limit to determine compliance with the rule.

Rule 54's current property line limits are based on the California ambient air quality standards (CAAQS) for SO_2. Because of its form, the 2010 SO_2 NAAQS is not directly comparable to the existing CAAQS-based limits. Therefore, the 2010 SO_2 NAAQS limit was added as a new subsection B.2.a. This amendment is required to bring Rule 54 up to date with current Federal requirements.

The proposed revisions might affect approximately 21 existing significant sources of SO_2 (see Table 1). For the purpose of this report, a source was considered significant if its permitted SO_2 emissions are greater than 40 tons per year and/or five (5) pounds per hour. The total permitted or potential SO_2 emissions from these operations are approximately 197 tons SO_2 per year.

Since the limit being added to Rule 54 is an ambient air limit, compliance will most often be determined during the initial Authority to Construct process. If any ambient monitor or ambient SO_2 concentration modeling shows concentrations above the limit, sources suspected of contributing to the exceedance will be required to demonstrate compliance, typically through dispersion modeling.

Since all new sources that emit SO_2 must be equipped with Best Available Control Technology (BACT), it is unlikely that any new source will exceed the ambient concentration limits at the property line. In addition, the current sources of SO_2 are either already well controlled, are low quantity emitters, or have flares on offshore oil platforms that are exempt from the limits in sections B.1, and B.2 of Rule 54 during emergencies for safety concerns. Therefore, no significant emissions reductions are expected as a result of this rule amendment.

The costs associated with compliance with the proposed ground or sea level concentration limits would be associated with air dispersion modeling used to demonstrate compliance and possibly with equipment or work practices to reduce SO_2 emissions. However, the addition of the 2010 NAAQS SO_2 standard would not increase the need for modeling compliance since the significant emission rate (the annual emission increase for a new or modified source that requires modeling to demonstrate compliance with the NAAQS) has not changed.

The estimated cost for additional SO_2 emissions reductions or other strategies to achieve compliance with the new limitations are difficult to determine. Since BACT must be applied to all new or modified sources of SO_2, any additional control technologies above and beyond BACT would likely be experimental and/or not previously implemented on a commercial scale. Thus the costs of implementing the proposed rule revision are impossible to predict.

The last time Rule 54 was updated in June of 1994, USEPA noted a minor deficiency during the State Implementation Plan revision process. Staff proposes to correct the deficiency during this revision by including a statement that the limit to combustion exhaust in subsection B.1.a is on a dry basis corrected to a percent oxygen based on the combustion source. In addition, this revision includes clarification of the method of calculating the planned flaring excess emission fees in Rule 54 and Rule 42.

This report contains five sections: (1) Background, (2) Proposed Rule Revisions, (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, latest air pollution control technology, and source description. The second section explains the key features of the proposed revisions. The third section compares the proposed requirements with existing federal requirements and BACT. The fourth section is an analysis of the proposed amendment's effect on SO_2 emissions, cost-effectiveness, and socioeconomic impacts. The last section examines the possible environmental impacts of compliance methods and mitigation of those impacts.

BACKGROUND

Introduction

Rule 54, Sulfur Compounds, was last amended in June of 1994. At that time, the rule was updated to include the most recent CAAQS for SO_2. An exemption for flares on outer continental shelf oil production platforms was also added to allow flaring of high sulfur gas during emergencies.

Ventura County is currently designated attainment for the SO_2 CAAQS[1] and the 1971 SO_2 NAAQS. However, upon promulgation of the 2010 primary 1-hour SO_2 NAAQS, USEPA revoked both the 1971 24-hour and the annual average primary SO_2 NAAQS and, moreover, the 1971 NAAQS will no longer apply one year after an area's effective date of designation.[2] In June 2011, the California Air Resources Board sent a letter to USEPA recommending that all areas of California be designated attainment for the 2010 SO_2 NAAQS[3]. On February 6, 2013, the USEPA Region IX Administrator responded with a letter stating that USEPA had insufficient information to determine the attainment status for any area of California for the 2010 SO_2 NAAQS[4]. USEPA was required to complete the designations by June 3, 2013 but as of the date of this report has not issued final designations for California. Hence, at this time Ventura County has not received an attainment designation for the 2010 SO_2 NAAQS but expects to be designated in attainment of the standard when USEPA completes its designation process.

2010 SO_2 NAAQS

On June 22, 2010 the USEPA strengthened the federal health-based or "primary" standard for SO_2 by establishing a new standard for 1-hour average SO_2 concentrations at 75 parts per billion (ppb) to protect public health from the adverse health effects of SO_2. With that action USEPA revoked the existing federal 24-hour and annual SO_2 standards set in 1971. In addition, USEPA changed the form of the standard to a "design value" for determining compliance with the standard.[5]

Design values are mathematically determined air pollutant concentrations that must be reduced to, or maintained at or below a NAAQS, to assume compliance and/or attainment. The design value for the 2010 1-hour NAAQS is derived from the 3-year average of annual 99th percentile daily maximum 1-hour values for a monitoring site. This value is also known as "the 1-hour primary standard design value."

Emission Source Inventory

The 21 operations currently permitted by the District that have SO_2 emissions that would be considered significant and possibly affected by the proposed rule revisions are shown in Table 1. These include crude oil production, port and military base operations, electricity generation, mineral processing, sewage treatment and other operations that involve the combustion of sulfur-containing fuels.

The table provides the permitted or potential emissions of SO_2 from stationary sources located at each listed facility. The estimated total permitted emissions from these sources are approximately 200 tons of SO_2 per year. A facility's actual SO_2 emissions depend on its production levels and its corresponding combustion of sulfur-containing fuel.

The emissions thresholds used to determine significant SO_2 sources for this rule revision were 40 tons SO_2 per year and 5 pounds SO_2 per hour. The 40-ton threshold is the standard SO_2 significance threshold for Prevention of Significant Deterioration (PSD) permitting set by USEPA[6]. USEPA did not change this threshold when it promulgated the 2010 SO_2 NAAQS. Since the 2010 SO_2 NAAQS is a short term (hourly) standard, staff determined that an hourly screening threshold was appropriate. Direct conversion of 40 tons per year to average pounds per hour yields 9.1 pounds per hour. Since the 2010 SO_2 NAAQS is more stringent than the 1971 standards, staff selected 5 pounds per hour as a reasonable threshold for this rule analysis.

In its draft document "Guidance for 1-Hour SO_2 NAAQS SIP Submissions," EPA stated that it expected states to "focus performance of attainment demonstration modeling on areas with larger sources (e.g., those sources emitting over 100 tons per year (tpy) of SO_2), and any other sources that we anticipate to cause or contribute to a violation to determine compliance with the new SO_2 NAAQS."[7] Since none of the Ventura County sources listed in Table 1 emit greater than 100 tons of SO_2 per year, modeling of these existing sources will likely not be required to demonstrate attainment of the 2010 NAAQS.

However, additional guidance from USEPA indicates that some refined modeling might be required to demonstrate attainment of the 2010 SO_2 NAAQS. The sources that should be modeled using screening modeling and those that must be included in refined modeling will be clarified with the additional USEPA guidance. If modeling used to determine attainment status of the 2010 SO_2 NAAQS shows violation(s) of the standard, then the sources contributing to the violation(s) will be required to reduce emissions. This is not expected to be the case for Ventura County, however.

1994 Rule Deficiency

On April 19, 2000 the USEPA finalized a limited approval of revisions to the Ventura County Air Pollution Control District portion of the California State Implementation Plan (SIP). The approval was limited due to minor deficiencies USEPA identified in their February 22, 2000 proposed limited approval of the SIP revisions.

In the proposal, USEPA identified the following deficiency in Rule 54: "The rule specifies a 300 ppm SO_2 limit at the point of discharge for any combustion operation. The rule should also indicate that the standard is on a dry basis and should specify the percent excess air." EPA also recommended changing the period of record retention specified in Rule 54 to be consistent with the federal record retention requirement of 5 years, stating this would be an improvement to the rule.[8]

Additional Clarifications and Corrections

The 1994 revisions to Rule 54 included an excess emission fee for planned flaring events on outer continental shelf oil platforms that exceed the emission rate limits in Section B.1 of the rule. The rule requirements did not exactly correspond to the intent as described in the May 12, 1994 rule development staff report. In addition, the District Compliance Division manager at that time issued policies to clarify the implementation of the excess emission fee requirements to correspond with the staff report.

Since staff determined that the staff report and Compliance division policy reflected the actual implementation of the rule in practice, this revision includes changes to Rule 54 to codify the current practice. Similar changes to Rule 42 Section N are proposed to maintain consistency between the two rules.

Table 1
Permitted Operations Possibly Affected by Proposed Rule Revisions

Facility ID	Facility Name	Permitted SO_2 Emissions (tons/year)	Permitted SO_2 Emissions (lb/hour)	Type of Operation	SIC Code
00003	Rincon Island Ltd. Partnership	0.98	8.18	Crude Oil Production	1311
00012	Tenby Production Facility	28.26	55.3	Crude Oil Production	1311
00036	Trinity ESC	63.55	15.89	Mineral Treating/Grinding	3295
00041	Aera Energy LLC	7.00	106.29	Crude Oil Production	1311
00065	Ormond Beach Gen. Station	37.04	8.8	Electricity Generation	4911
00143	Ventura Co. Medical Center	0.41	14.55	Medical/Surgical Hospital	8062
00144	Los Robles Hospital & Medical Ctr.	0.33	10.51	Medical/Surgical Hospital	8062
00157	New-Indy Oxnard, LLC	0.86	30.26	Paperboard Mill	2631
00165	Simi Vly Water Qlty Control Plant	6.38	5.27	Sewerage Systems	4952
00310	Vintage Production California LLC	0.76	10.03	Natural Gas Plants	1321
00970	Rincon Onshore Facility	2.00	66.97	Crude Oil Production	1311
00997	Naval Base Ventura County	1.91	8.17	National Security	9711
01139	Ventura Port District	0.87	7.22	Dredges/Pile Drivers	1629
01207	Naval Base Ventura County	6.01	9.24	National Security	9711
01266	Manson Construction Company	1.21	5.87	Dredges/Pile Drivers	1629
01267	Trustees of CSU & CSUCI Site Auth.	25.01	55.04	Electricity Generation	4911
01491	Platform Gina	4.75	76.91	Crude Oil Production	1311
01492	Platform Gilda	2.91	11.94	Crude Oil Production	1311
01493	Platform Grace	2.77	390.8	Crude Oil Production	1311
01494	Platform Gail	3.50	632.89	Crude Oil Production	1311
07294	Schlumberger Tech (Vent. Well Srvs)	0.08	6.97	Oilfield Services	1389
	TOTAL PERMITTED EMISSIONS	**197**			

PROPOSED RULE REVISIONS

The Ventura County Air Pollution Control District (District) is proposing revisions to District Rule 54, Sulfur Compounds and Rule 42, Permit Fees. The proposed revisions include adding the 2010 SO_2 NAAQS as an ambient concentration limit, addressing deficiencies identified by the USEPA, and clarifications to the planned flaring excess emission fee provisions.

2010 SO_2 NAAQS

Staff is proposing to add the 2010 sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) of 75 parts per billion as a ground or sea level concentration limit to Rule 54's current concentration limits. Staff is also proposing to add a description of the design value that must be calculated to compare to the 2010 SO_2 NAAQS concentration limit to determine compliance with the rule.

The current ground or sea level limits in Rule 54, based on the California ambient air quality standards (CAAQS) for SO_2, will be retained. The limits based on the CAAQS either have a different averaging time (24 hours) or are direct limits on 1-hour concentration that may not be exceeded, providing a maximum hourly concentration not covered by the proposed limit.

The addition of the 2010 SO_2 NAAQS would not directly reduce SO_2 emissions from stationary sources in Ventura County. However, adding the 2010 SO_2 NAAQS to Rule 54 would clarify the requirements for affected facilities and District permit engineers. If modeling required for Authority to Construct review, PSD review or attainment demonstrations indicates violations of the standard, emissions reductions would be required at that time.

1994 Rule Deficiency

Staff is proposing to clarify the combustion source emission limit in Rule 54 Subsection B.1.a by adding the requirement that the limit is on a dry basis corrected to a percent oxygen based on the combustion source type. Since different combustion sources are designed to function with different excess air input, staff determined that it would be unreasonable to set a single excess air requirement for all sources subject to Rule 54. Therefore, staff reviewed existing District rules that apply to combustion sources. The Subsection B.1.a revisions reference other District rules in order to be consistent in setting the percent oxygen correction values.

To cover all sources, staff included a final requirement that all other sources correct the SO_2 concentration to 15% oxygen. Staff reviewed combustion operations not covered by another District rule and determined that they operate at higher excess air (10% - 19% oxygen) than boilers. Therefore the "other" category will be required to correct SO_2 emissions concentration to 15% oxygen. Processes combusting fuels subject to District Rule 64 – Sulfur Content of Fuels, will be always in compliance with the emission limit of 300 ppm SO_2 at 15% oxygen if they are in compliance with the fuel sulfur limits (see Table 2).

Table 2
Theoretical Exhaust Concentrations at
Rule 64 Fuel Sulfur Content Limits

	Gaseous Fuel	**Liquid Fuel**
Rule 64 Limit	50 grains S per 100 cubic feet	0.005 pound S per pound fuel
Exhaust SO_2 Concentration @ 15% O2	24.91 ppmv	95.65 ppmv
Exhaust SO_2 Concentration @ 3% O2	75.57 ppmv	290.2 ppmv

Staff declined to change the record retention requirement in Rule 54. Staff determined that a two-year retention period is consistent with the requirements of District Rule 24 and is sufficient for minor sources since Compliance Division staff inspects minor sources in the District annually. In addition, District Rule 33 requires Title V sources to retain records for five years as required by Federal rules. Therefore, the five-year retention requirement is already in place where required.

Additional Clarifications and Corrections

Rule 54 was also reviewed by staff to determine if any clarifications of the existing rule are needed. Staff found two typographical errors in Rule 54. This revision corrects the typographical by making the word "Subsection" plural in Subsection C.1.e and correcting the South Coast AQMD test method reference in Subsection D.1 (the correct test method number is 307-91).

In addition, staff determined that some provisions relating to the planned flaring excess emission fee in Rule 54 Subsection C.2.f and Rule 42 Section N did not accurately reflect the intention as described in the

staff report prepared in conjunction with the 1994 revision. The 1994 staff report states that the flare gas volume allowance should be calculated based on the baseline period from 1988 through 1993 for existing sources.

The existing Rule 54 Section C.2.f and Rule 64 Section N state the "flare gas volume allowance is 91 percent of the average of the two highest, consecutive, annual flare gas volumes in the preceding 5 years." Staff believes this wording might have been added to the rule to address potential new sources. However, it was not intended to create a rolling baseline for existing sources. The District Compliance Division has been operating under Policy F-1, which states that the flare gas volume allowance should be calculated based on the baseline period from 1988 through 1993.

The proposed rule revisions set the baseline period for sources operating prior to January 1, 1988 as the period from January 1, 1988 through December 31, 1993. This aligns the rules with the current policy in effect with the District Compliance Division and the 1994 staff report. Table 3 lists the calculated flare gas volume allowance for the existing offshore oil platforms.

Table 3
Flare Gas Volume Allowances for Existing Sources

Platform Name	Flare Gas Volume Allowance (cubic feet)
Gail	37,990,000
Gilda	27,012,000
Gina	2,492,000
Grace	N/A (see below)

The operators of platform Grace did not submit data to the District and they have no flaring reduction plan on file. They do not expect to exceed the exhaust or sea level concentration limits since the gas produced at platform Grace historically has low sulfur content.

To accommodate potential new sources, the proposed rules set the baseline period for sources constructed after January 1, 1988 as the first six whole calendar years of operation. The rule revisions also clarify that the baseline flare volume is based on planned flaring only and does not include unplanned flare volume.

Public Workshop

Staff held a public workshop to present the proposed rule revisions to the public on August 7, 2013. Staff notified all 185 sources in the District with permitted emissions of sulfur compounds greater than zero by sending a postcard with the subject matter, date and time of the workshop to each source on July 24, 2013. In addition, notice of the workshop was posted on the District web page on July 18, 2013. Staff held the workshop at the appointed date and time but no industry representatives or members of the public attended the workshop. Staff received no written comments from the public before or after the workshop.

Thirty days prior to the public workshop, staff submitted the draft revised rules to the California Air Resources Board (ARB) and USEPA for review. ARB responded stating they had no comments on the draft revised rules. USEPA responded by telephone with comments requesting correction of a typographical error in the staff report and minor clarifications to three subsections of Rule 54. The changes to the Rule 54 text requested by EPA are as follows:

1. Include language in Subsection B.2.a that screen modeling software should be EPA approved;
2. Insert the date of the Bay Area Manual of Procedure referenced in Subsection D.2. (7/20/1994); and
3. Revise the reference to the EPA Quality Assurance Handbook in Subsection D.2.b to reference the current document.

Staff made all of the requested changes and EPA noted in its written comments that the comments had been addressed in the version posted on the District website prior to the public workshop.

During the public workshop, staff reviewed the rule with District management. Minor editorial changes were suggested. In addition, staff determined the SO_2 emission limit for combustion sources at municipal solid waste landfills should have percent oxygen correction values based on the combustion source at the landfill. Subsection B.1.a.7 was edited accordingly.

Advisory Committee

Staff presented the proposed rule revisions to the District Advisory Committee on September 24, 2013. Efforts to notify affected sources and the public similar to those for the public workshop were employed. Again, no industry representatives or members of the public attended the Advisory Committee meeting. The Advisory Committee unanimously passed a resolution recommending the proposed revisions be adopted by the Air Pollution Control Board.

The Advisory Committee received one written comment at the September 24 meeting from Phil White, President of AE Mechanical Engineering, Inc.

and former Director of the District. The comment supported the changes to Rule 54 in a general statement and went on to address separate issues not related to these rule amendments. No changes were made to the proposed rule amendments as a result of the comment. No changes to the proposed rule amendments have been made after the Advisory Committee meeting on September 24, 2013.

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.

Comparison with Federal NSPS and NESHAPS

Multiple NSPS regulations include SO_2 emission limits. Only one NESHAP, Part 63 Subpart UUU – Sulfur Recovery Units, limits SO_2 emissions. One other NESHAP, Part 63 Subpart UUUUU – Coal- and Oil-Fired Electric Utility Steam Generating Units, includes an optional SO_2 emission limit as a method of demonstrating compliance. Neither of these NESHAPS regulates ambient air concentrations of SO_2 at or outside the property line of the source facility.

The elements of the NSPS and NESHAPS were compared to proposed amendments to Rule 54. None of the proposed amendments to the rule affect the:

- Units used for emission standards
- Monitoring Frequency
- Test Methods
- Recordkeeping Requirements

None of the Federal rules regulate ground or sea level concentrations of SO_2 at or outside the property line of the source facility. In summary, there are no conflicting requirements with the federal NSPS or NESHAPS.

Comparison with BACT Requirements

Health and Safety Code Section 40727.2 (a) requires that the proposed rule amendments be compared with Best Available Control Technology (BACT). The CAPCOA Engineering Manager Rule Development Subcommittee developed guidance on this matter. Under this guidance, it is recommended that BACT be interpreted as a District's BACT determination.

BACT for SO_2 emissions is specific to the type of emission unit. However, the top-down BACT analysis used by the District does not consider ambient air concentrations. BACT is a technology-based standard that requires installation of controls and use of work practices to minimize emissions from new and modified sources. The ground or sea level concentration standards in Section B.2 of Rule 54 are separate and are applied differently.

If a source of SO_2 is constructed or modified, BACT must be applied. If the new source review process requires modeling of ambient air concentrations of SO_2, and the modeling results indicate ground or sea level concentrations greater than the limits in Rule 54, emissions must be reduced to meet the limits or a permit will not be issued. Thus, the ambient air standards in Rule 54 do not conflict with BACT but are complementary and constitute an additional layer of protection for the public.

IMPACT OF THE PROPOSED RULE

SO_2 Emissions Impacts

As shown earlier in Table 1, the total permitted SO_2 emissions of facilities with significant SO_2 emissions are approximately 197 tons per year. Since the proposed property line limit does not directly affect emissions, it is difficult to determine if any emission reductions will be necessary as a result of this rule revision.

As stated above, the significance level for PSD review and modeling of emissions for compliance with the ambient air standards has not changed. However, District Engineering staff screen all new and modified sources of SO_2 for compliance with the

ground or sea level concentration limits in Rule 54. To date, all sources have demonstrated compliance with the existing concentration limits. Engineering staff expects that any source that implements BACT will readily demonstrate compliance with the proposed ground or sea level concentration limit.

Cost-Effectiveness

The costs associated with compliance with the proposed ground or sea level SO_2 concentration limits are associated with air dispersion modeling to demonstrate compliance and possibly equipment or work practices to reduce SO_2 emissions. However, the addition of the 2010 NAAQS SO_2 standard would not increase the need for dispersion modeling since the significant emission rate (the annual emission increase for a new or modified source that requires modeling to demonstrate compliance with the NAAQS) has not changed.

AERMOD modeling software can be obtained for free from several sources on the Internet. Software packages with additional functionality are available for an initial cost of between $1,500 and $2,000 and up to $600 annually for updates and technical support. AERMOD is a steady-state dispersion model designed for short-range (up to 50 kilometers) dispersion modeling of air pollutant emissions from stationary industrial sources.

During the Authority to Construct process, the District normally performs a screening analysis at little or no cost to the applicant. Rarely, a facility would be required to hire a consultant to conduct any required air dispersion modeling. The cost for a screening level model run to demonstrate compliance for a single source in a simple facility would likely be no more than $1,000. The cost of a more complex model for a few emission points in a more complex building environment would likely be between $2,000 and $10,000. Very complex modeling using the more sophisticated CALPUFF model can run well over $20,000. CALPUFF is an advanced non-steady-state meteorological and air quality modeling system that simulates the effects of time- and space-varying meteorological conditions on pollution transport, transformation, and removal. CALPUFF can be applied for long-range transport and for complex terrain.

The costs of additional SO_2 emissions reductions or other strategies to achieve compliance with the new limitations are difficult to estimate. Since BACT must be applied to all new or modified sources of SO_2, any additional control technologies beyond BACT will likely be experimental and/or not previously implemented on a commercial scale. Thus the cost of implementing this proposed rule revision is impossible to predict.

In the Regulatory Impact Report for the 2010 SO_2 NAAQS, USEPA estimated that unidentified controls would cost $15,000/ton of SO_2 removed on an annualized basis.[9] The BACT cost effectiveness screening level adopted by the District's governing board in December 1988 is $5 per pound of SO_2 emissions reduced (equivalent to $10,000 per ton).[10] This indicates that the cost of some controls that might be required under the proposal might exceed the District BACT screening levels for cost. However, it should be noted that $10,000 in 1988 dollars is equivalent to $19,109 in 2012 dollars.

It is important to note that all costs discussed here are based on compliance with the 2010 SO_2 NAAQS. Compliance with the 2010 NAAQS limit is required regardless of the amendments to Rule 54 so the proposed revisions will not increase costs. Since the combustion emission limit is less restrictive than the Rule 64 limits even with the correction for oxygen content and dry basis, it is unlikely that any source will exceed the limit and incur additional cost. The proposed changes to the planned flaring excess emission fee calculation merely align the rule text with actual practice so no increase in fees is expected.

Incremental Cost-Effectiveness Analysis

Health and Safety Code Section 40920.6(a) requires air agencies 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 for 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 amendments to Rule 54 do not specify control options and may not require emission reductions. Therefore, the incremental cost-effectiveness analysis does not apply to this proposed rulemaking.

Socioeconomic Analysis

Assembly Bill 2061 (Polanco), which became effective January 1, 1992, requires that the District's governing board consider the socioeconomic impacts

of any new rule or rule revision. The Board must therefore evaluate the following socioeconomic information on proposed amendments to Rule 54.

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

The adoption of amendments to this rule may directly affect the 21 permitted operations in the county considered significant in this report (see Table 1). These include crude oil production, port and military base operations, electricity generation, mineral processing, sewage treatment and other operations that involve the combustion of sulfur-containing fuels.

(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. New or modified sources are already required to implement BACT, and the proposed property line limits would not likely cause additional cost to industry. In addition, the proposed limits are currently in effect as NAAQS, so this rule does not impose more stringent requirements.

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

The proposed rule amendments would not cause any specific costs to most, if not all, existing facilities. If USEPA designates Ventura County attainment for SO_2, then no modeling of existing facilities would be required since none exceed 100 tons per year actual emissions. If USEPA requests modeling for some sources, modeling would likely cost between $1,000 and $20,000 per facility.

All new and modified sources of SO_2 are evaluated for compliance with Rule 54 limits in the Authority to Construct process. This is normally done without additional cost to the applicant through fuel content analysis or engineering calculations. The addition of the 2010 SO_2 NAAQS limit to Rule 54 will not change this process, though sources not considered trivial might require increased scrutiny due to the stringency of the proposed limit.

New and modified sources with SO_2 emissions increase of 40 tons per year or more would be required to conduct dispersion modeling to determine compliance with the proposed limit. This could add $20,000 or more to the cost of implementing the project. If additional controls are required, it could add hundreds of thousands of dollars to the project cost. Note however that the proposed limit is a Federal NAAQS and these costs would be incurred regardless of this rule amendment.

Small businesses with SO_2 emissions less than 40 tons per year or 5 pounds per hour would not be likely to incur any additional costs.

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

Since the proposed rule amendments are merely adding new Federal requirements to the District rules, no other alternatives were evaluated.

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

Since the proposed ground or sea level concentration limit does not directly affect emissions, it is difficult to determine if any emissions reductions would be necessary as a result of the rule amendments.

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

This rule amendment is necessary to bring the District Rule 54 up to date with the current Federal SO_2 NAAQS.

ENVIRONMENTAL IMPACTS OF METHODS OF COMPLIANCE

California Public Resources Code Section 21159 requires the District perform an environmental analysis of the reasonably foreseeable methods of compliance for the subject amended rule. Pursuant to paragraphs 21159(a)(1) to (3), the environmental analysis must include the following information on the proposed revisions to Rule 54:

(1) An analysis of the reasonably foreseeable environmental impacts of the methods of compliance.

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

Table 4 lists all reasonably foreseeable compliance methods, the environmental impacts of those methods, and feasible measures that could be used to mitigate the identified environmental impacts of compliance methods, if any.

Table 4
Environmental Impacts of and Feasible Mitigation Measures for Methods of Compliance

Compliance Methods (including all reasonably foreseeable alternative means of compliance)	**Reasonably Foreseeable Environmental Impacts**	**Reasonably Foreseeable Feasible Mitigation Measures**
Exhaust stack reconfiguration (not to exceed Good Engineering Practice height)	Environmental Impacts: None – this option neither reduces emissions nor creates additional emissions of other pollutants.	N/A
Switch fuel to lower sulfur content fuels	Environmental Impacts: None – this option reduces emissions without creating additional emissions of other pollutants or additional waste streams.	N/A
Install add-on control devices such as scrubbers or baghouses with lime injection	Air Quality Impacts: Scrubber or baghouse technology could increase particulate emissions.	District rules limit particulate emissions and require high efficiency control devices that mitigate these impacts.
	Water Impacts: Improper disposal of scrubber liquor could impact water resources.	Compliance with wastewater discharge standards and waste disposal requirements would mitigate these impacts.
	Solid Waste Disposal Impacts: Sorbents from scrubber system may be disposed of in landfills.	Certain sorbent systems create gypsum, which can be sold on commercial markets to avoid impacts to landfills.
	Noise Impacts: Fans and equipment associated with add-on controls may increase noise levels.	Sound walls or enclosures may be constructed around the control equipment to mitigate these impacts as required by noise ordinances and industrial hygiene standards.
Refined computer modeling of SO_2 concentrations at the property line	Environmental Impacts: None – this option would merely develop more accurate estimates of SO_2 concentrations and would not reduce actual emissions or pollutant concentrations.	N/A
Ambient air monitoring of SO_2 concentrations	Environmental Impacts: None – this option demonstrates compliance with ambient air standards and would not affect actual emissions or pollutant concentrations.	N/A

This analysis demonstrates that the adoption of the proposed revisions to Rule 54 would not have a significant adverse effect on the environment.

REFERENCES

[1] 2012 Area Designations for State Ambient Air Quality Standards SULFUR DIOXIDE. California Air Resources Board Web site. http://www.arb.ca.gov/desig/adm/2012/state_so2.pdf. February, 2012. Accessed May 13, 2013.
[2] Title 40, Code of Federal Regulations, Part 50 §50.4 National primary ambient air quality standards for sulfur oxides (sulfur dioxide). http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=94a55a14061941755da6f1f646d09c88&rgn=div8&view=text&node=40:2.0.1.1.1.0.1.4&idno=40. Accessed June 11, 2013.
[3] Goldstene J. N. Recommended Area Designations For The 2010 Federal Sulfur Dioxide (SO_2) Standard Staff Report. United States Environmental Protection Agency Web site. http://www.epa.gov/so2designations/recletters/R9_CA_rec_wtechanalysis.pdf. June 20, 2011. Accessed May 13, 2013
[4] Blumenfeld J. United States Environmental Protection Agency Web site. http://www.epa.gov/so2designations/eparesp/09_CA_resp.PDF. February 6, 2013. Accessed May 13, 2013
[5] Primary National Ambient Air Quality Standard for Sulfur Dioxide; Final Rule. United States Environmental Protection Agency Web site. http://www.epa.gov/ttn/naaqs/standards/so2/fr/20100622.pdf. June 22, 2010. Accessed May 13, 2013
[6] General Guidance for Implementing the 1-hour SO_2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour SO_2 Significant Impact Level. United States Environmental Protection Agency Web site. (2010, June). http://www.epa.gov/region07/air/nsr/nsrmemos/appwso2.pdf. August 23, 2010. Accessed May 13, 2013
[7] Guidance for 1-Hour SO_2 NAAQS SIP Submissions. United States Environmental Protection Agency Web site. http://www.epa.gov/air/sulfurdioxide/pdfs/DraftSO2Guidance_9-22-11.pdf. September 22, 2011. Accessed May 13, 2013
[8] "Approval and Promulgation of Implementation Plans; California State Implementation Plan Revision, Ventura County Air Pollution Control District," 65 Federal Register 135 (22 February 2000) pp. 8676-8679.
[9] Final Regulatory Impact Analysis (RIA) for the SO_2 National Ambient Air Quality Standards (NAAQS). United States Environmental Protection Agency Web site. http://www.epa.gov/ttn/ecas/regdata/RIAs/fso2ria100602full.pdf. June 2010. Accessed May 13, 2013
[10] Villegas M. BACT Implementation Permitting Policy. Ventura County Air Pollution Control District Web site. http://www.vcapcd.org/pubs/Engineering/permits2000/BACTPolicy111009.pdf. November 10, 2009. Accessed May 13, 2013