WSPA

Western States Petroleum Association
Credible Solutions • Responsive Service • Since 1907

Catherine H. Reheis-Boyd
Chief Operating Officer and Chief of Staff

December 11, 2006

Joseph Cassmassi
Planning and Rules Manager
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mr. Cassmassi:

WSPA COMMENTS ON THE CONTROL MEASURES IN THE DRAFT 2007 AQMP

The Western States Petroleum Association (WSPA) appreciates the opportunity to comment on the proposed control measures in the draft 2007 AQMP – both the District's Stationary and Mobile Source Control Measures, and the District Staff's Recommended State and Federal Stationary and Mobile Source Control Measures. Our comments are presented in the enclosed document.

There are a significant number of proposed control measures of interest to WSPA because they are either directed specifically at petroleum industry facilities, would affect the fuel products that our member companies produce, or, would impact marine operations. However, we note that, with this initial draft of the proposed AQMP, the District has not prepared any estimates of implementation costs (or, of cost-effectiveness), and has only estimated emission reductions for a handful of control measures. Accordingly, our current comments focus primarily on the basic concepts behind the proposed measures.

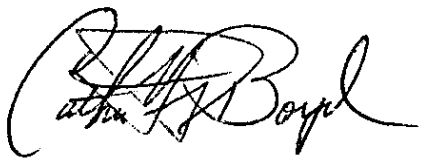
We would like to assure you that we recognize the extraordinary challenge that this AQMP update presents to the District. However, as you will note from our comments on the specific control measures, we find that many of the proposed control measures suffer from various defects. WSPA is very concerned that once the practical considerations are fully explored, and once cost-effectiveness is taken into consideration, many of the proposed measures will likely have to be discarded. If this happens, there will be a scramble for fresh ideas even though such possibilities are extremely rare.

We are looking forward to seeing complete assessments of emission reductions, implementation costs, and cost-effectiveness when the next draft of the proposed AQMP is released. WSPA plans on submitting additional comments on the proposed control measures at that time.

1415 L Street, Suite 600, Sacramento, California 95814
(916) 498-7752 • Fax: (916) 444-5745 • Cell: (916) 599-2724
cathy@wspa.org • www.wspa.org

Please feel free to contact me or Jodie Muller at (310) 808-2143 if you have any questions about these comments.

Sincerely,



Enclosure

cc: Joe Sparano
Barry Wallerstein, D.Env.
William Burke, Ed.D
Michael Antonovich
Jane Carney
Ron Loveridge
Gary Ovitt
Jan Perry
Miguel Pulido
Tonia Reyes Uranga
Cynthia Verdugo-Peralta
S. Roy Wilson, Ed.D
Dennis Yates

Western States Petroleum Association

COMMENTS ON SPECIFIC STATIONARY SOURCE, MOBILE SOURCE AND RECOMMENDED STATE/FEDERAL CONTROL MEASURES IN THE DRAFT 2007 SOUTH COAST AIR QUALITY MANAGEMENT PLAN

December 11, 2006

WSPA COMMENTS on SPECIFIC STATIONARY SOURCE, MOBILE SOURCE and RECOMMENDED STATE/FEDERAL CONTROL MEASURES in the DRAFT 2007 SOUTH COAST AQMP

Table of Contents

Stationary Source[1] Control Measures

[1] Includes District's proposed Mobile Source Control Measures.

Group 8 District's Mobile Source Control Measures

MOB-02	Extended Exchange Program
MOB-03	Backstop Measures for Indirect Sources of Emissions from Ports and Port-Related Facilities

Group 9 Long-Term Control Measures

LTM-02	Further Emission Reduction from NOx RECLAIM Facilities
LTM-03	Long-Term Control Measure for Fugitive Emissions
LTM-04	Concurrent Reductions from Global Warming Strategies

Recommended State and Federal Stationary and Mobile Source Control Measures

Group 1 On-Road Mobile Source Control Measures

ONRD-03	California Phase 3 Reformulation Gasoline Modifications
ONRD-05	PM Testing for Light- and Medium-Duty Vehicles
ONRD-07	Greater Use of Diesel Fuel Alternatives and Diesel Fuel Reformulation

Group 2 Off-Road Mobile Source Control Measures

OFFRD-06	Clean Marine Fuel Requirements for Ocean-Going Marine Vessels
OFFRD-07	Further Emission Reductions from Ocean-Going Marine Vessels and Harbor Craft While at Berth
OFFRD-09	Vessel Speed Reduction
OFFRD-10	Further Emission Reductions from Ocean-Going Marine Vessels
OFFRD-11	Emission Reductions from Aircraft

CONTROL MEASURE 2007 FUG-01, IMPROVED LEAK DETECTION AND REPAIR

Control Measure FUG-01 is described as a new control measure whose scope is to enhance the effectiveness of existing LDAR programs and expand the applicability of LDAR programs to additional areas through the use of optical gas imaging to detect leaks (i.e., Smart LDAR).

WSPA believes that a properly designed Smart LDAR program potentially offers an effective means of identifying leaks in a more cost-effective manner than the current LDAR program. While the current LDAR program has been effective in reducing fugitive VOC emissions, it is extremely labor intensive, time consuming and costly. For a typical refinery, tens of thousands of components must be individually inspected by US-EPA Method 21 on a quarterly basis. Studies[2] show that most of this work is not productive because a very high percentage of the components (typically greater than 98%) are found not to be leaking, or, leaking at very low mass rates. This leaves a relatively small number of "large" leaks that produce the vast majority of the mass emissions. Smart LDAR offers a potential means of more quickly identifying and focusing repairs on the large leakers in a more efficient manner than the current LDAR program.

DISCUSSION

Method of Control

WSPA supports the proposed two-phase approach for implementing Smart LDAR. WSPA believes that a pilot demonstration program is necessary to verify feasibility and to resolve a number of issues, including those listed below, before consideration is given to amending existing fugitive emission rules to implement Smart LDAR as an alternative to conventional screening of fugitive emissions components.

- Feasibility – of monitoring existing sources and expansion to other sources.
- Regulatory conflicts – with underlying rules that are Method 21-based.
- Monitoring protocols.
- Definition of leak (i.e. Method 21 equivalency).
- Interferences (e.g. weather conditions and steam plumes).
- Record keeping – feasibility/cost of video records.
- Cost-effectiveness.

Estimated Emission Reductions

The proposed control measure does not identify any potential emission reductions. Since Smart LDAR is a relatively new technology and untried on a formal basis in the South Coast, WSPA believes that there is no good basis for establishing a target emission reduction at this time. Therefore, WSPA recommends that the emission reductions remain as "not determined" in the control measure. The Phase I pilot program should be used to determine the feasible and cost-effective emission reduction potential of the control measure.

[2] For example, work by the Hal Taback Co. (copies of reports were previously supplied to the SCAQMD).

Cost and Cost-Effectiveness

WSPA believes that a key objective of the Phase I Smart LDAR pilot program, in addition to feasibility determination, should be to design a Smart LDAR program that is more cost-effective than the current LDAR program. This would not be accomplished by simply adding Smart LDAR on top of existing LDAR requirements. Instead, the Smart LDAR program should be designed such that it improves cost-effectiveness by replacing, or substituting for, the existing program.

Potential expansion of Smart LDAR to other equipment not currently monitored by the LDAR program should be done only if shown to be feasible and cost-effective. Similarly, the potential applicability of Smart LDAR to smaller facilities (e.g., terminals) needs to be based on a review of the cost-effectiveness of the program for those facilities.

Because component tagging and record keeping are significant contributors to the cost of current LDAR programs, consideration should be given to simplifying these requirements if Smart LDAR programs are implemented.

CONCLUSIONS AND RECOMMENDATIONS

WSPA supports inclusion of this control measure in the 2007 AQMP as a potential means of achieving additional VOC emission reductions, while simultaneously reducing the costs associated with the current LDAR program. Our support for this measure is contingent upon the following:

- The proposed two-phased approach (as described in the control measure), where Phase I would be a pilot demonstration of Smart LDAR, is pursued.
- Rule development, for the purpose of implanting Smart LDAR, would not be undertaken unless the Phase I pilot demonstration is successful.
- A Smart LDAR program is a substitute for – not an addition to – existing LDAR requirements.

(Lastly, WSPA notes that there may be some interrelationship between this proposed measure and FLX-02.)

CONTROL MEASURE 2007 FUG-02, EMISSION REDUCTIONS FROM GASOLINE TRANSFER AND DISPENSING

This draft control measure proposes five methods of control for possibly reducing emissions from gasoline dispensing – these reductions would be attributable to modifications of In-Station Diagnostics (ISD) systems that are specified and required by the California Air Resources Board (ARB). Currently, the authority to certify equipment used for dispensing gasoline rests with the ARB.

The proposed methods would impose equipment and operational requirements for Enhanced Vapor Recovery (EVR) systems and ISD systems that are different and more stringent than those specified in ARB Executive Orders for EVR systems. Individual air districts are prohibited from adopting "stricter procedures or performance standards than those adopted by the state board."[3] WSPA does not believe that the SCAQMD has, or should seek, its own authority to establish new unique specifications for vapor control equipment or ISD systems. Rather, the SCAQMD should continue to work with the ARB and CAPCOA to improve EVR systems through the ARB's established certification process. Notwithstanding this opinion, WSPA provides the following comments on the proposed control measure.

The development of ISD is still in its infancy. It would be premature to establish new ISD requirements while the 18-month study evaluating system performance and capabilities is still being conducted jointly by ARB and CAPCOA. At the inception of the EVR program, ARB established performance guidelines for ISD systems that would characterize vapor recovery system performance without reporting a significant number of false positive or false negative readings. There is no basis for revising and tightening the original specifications for ISD system performance without conducting a comprehensive comparison of similar values measured with ARB test procedures

The last paragraph of SCAQMD's "Background" section states that the emission reduction goals of the overall EVR program have been "elusive" because of "poor compliance rates". Fairness suggests that such a broad statement is inappropriate because present compliance rates are based on the current vapor recovery system population which is overwhelmingly made up of pre-EVR systems. Indeed, if there are operational problems with the single certified EVR system in use, the District should advise ARB and encourage them to resolve such deficiencies.

Methods of Control

Proposed Method of Control No. 1 – This section incorrectly suggests that ISD systems need to add a yellow alert signal that identifies the potential for a failure. In fact, the currently certified ISD system already has a yellow light warning (which indicates a 25% degradation of performance) and a red light alert (which indicates a gross vapor recovery system failure and shuts off all dispensing).[4]

[3] California Health and Safety Code, Division 26, Section 41954(g)(1)
[4] See the ISD Install, Setup & Operation Manual (IOM 16 of ARB Executive Order VR-202-A), Chapter 5.

Proposed Method of Control No. 2 – This section would, "enhance the ISD alerting range to match the ARB Executive Orders standards." An example of the Vapor/Liquid ratio is provided, for which the EO identifies a range of 1.05 ± 0.10. ARB has stated that, during certification testing, ISD V/L readings were outside the EO range approximately 13 percent of the time during normal operations.[5] In May 2006, WSPA's consultant also presented data to SCAQMD staff showing that ISD A/L measurements were not equivalent to the results of compliance test methods.[6] This discrepancy is due in part to the fact that the compliance test method involves trained personnel dispensing at the maximum rate (i.e., handle squeezed manually) into a test container, with no "top-offs". ISD measurements can be adversely affected by real-world conditions (e.g., motorists dispensing at varying rates, topping off, filling gas cans and motorcycles, and vehicles that may have unusually hot fuel tanks and/or gasoline with a different seasonal RVP).

Preliminary results from the on-going 18-month ISD in-use evaluation reviewed by WSPA's consultant also show that it is possible for Phase II systems to be complying with the EO when ISD V/L measurements are outside the range identified in the EO, and vice versa. ISD Operability Tests only require that the average daily V/L ratio identified by ISD for the day prior to compliance testing be within ± 0.15 of the compliance testing result, for one grade of gasoline, on at least one of the two sides of a dispenser.

Proposed Method of Control No. 3 – This section would disallow the use of the ISD reset button "unless and until all the defective components are repaired and the vapor recovery system operates in full compliance". According to WSPA's consultant, there are initial indications that such a requirement could result in significant vapor recovery system downtime for reasons outside the operator's control. WSPA's consultant has witnessed six sets of EVR testing in four air districts as part of the 18-month ISD evaluation. In all six cases, V/L compliance testing showed at least one fueling point, on at least one grade of gasoline, having V/L data outside the certified range (0.95-1.15). Also, in some cases, ISD had indicated that the V/L of that fueling point was within the certified range. Alternatively, if SCAQMD is referring to an enforcement policy similar to the one recommended by ARB and CAPCOA,[7] this needs to be clearly identified.

Proposed Method of Control No. 4 – This section would "seek implementation of the ISD on all the balance and the vacuum assist systems." It is unclear what is meant by this statement. If SCAQMD intends to require ISD on pre-EVR Phase II systems, there needs to be some

[5] ARB, letter from Joe Guerrero to Steven Arita, June 9, 2006 (page 7, response to question #14).
[6] Presentation given by Todd Tamura to Randy Matsuyama, Bobby Mendoza, Frank Motavassel, Ed Pupka, and Lou Roberto in Diamond Bar, May 4, 2006.
[7] ARB (Catherine Witherspoon) and CAPCOA (Barbara Lee), letter to Jay McKeeman (CIOMA), "Recommended Enforcement Policy During 18-Month Evaluation," June 27, 2006.

assessment of the likelihood that ISD systems will be available for these Phase II systems, given that they will soon be replaced by EVR. Further, it may not be cost-effective to require ISD for existing Phase II systems that will soon be replaced with EVR systems. If SCAQMD is referring to EVR systems, ISD will be required for any balance or vacuum assist systems that will be certified under the EVR program. The sole exception would be for low-throughput stations for which ISD is not deemed to be cost effective. If SCAQMD is proposing to remove the low throughput exemption, this should specifically be stated, and the cost-effectiveness should be evaluated.

Proposed Method of Control No. 5 – This section would require installation of "a 'shut down' sensor or mechanism" on the fuel line of the dispenser to stop fueling. Such equipment would need to be both evaluated and certified by ARB. The certification requirements for this equipment are beyond current ARB certification procedures.

WSPA respectfully requests that the District provide data and information to support the statement that, "Partially blocked fuel filters ... deactivate the pressure sensor in the [EVR] nozzles ...". We believe that this statement may be applicable to the currently certified Phase II system, but may not be pertinent to different as-yet-uncertified systems. Specifically, we would be interested in knowing how much of a blockage (as gauged by A/L data, flowrate or, some other means) would deactivate a pressure sensor?

Estimated Emissions Reductions

SCAQMD estimates that the proposed control methods would result in 3.7 tpd of VOC emissions reductions in 2014, and 3.9 tpd of emissions reductions in 2020. WSPA requests that the district please provide information to support these estimates.

Cost and Cost Effectiveness

SCAQMD has not estimated cost or cost-effectiveness for this measure; WSPA respectfully requests that costs and cost-effectiveness be determined and made available for review.

CONCLUSIONS AND RECOMMENDATIONS

WSPA concludes that the five proposed control methods for FUG-02 appear to be based on incorrect assumptions and information. These proposed control methods would require additional certification requirements outside of, and in conflict with, those prescribed by ARB. An analysis of estimated emissions reductions and costs has not yet been provided. WSPA recommends waiting until the results of the 18-month ARB / CAPCOA ISD and cost effectiveness studies are complete before considering any revisions to the current vapor recovery rules.

CONTROL MEASURE 2007 FUG-04, EMISSION REDUCTIONS FROM PIPELINE AND STORAGE TANK DEGASSING

FUG-04 is a new control measure listed under the "Good Management Practices" control plan approach. It is designed to reduce VOC emissions from pipeline and storage tank degassing by requiring the vapor space exhaust to be vented to an air pollution control device. This control measure will impact refineries, chemical plants, gasoline stations, pipelines, and various other industries.

DISCUSSION

Background

Currently, SCAQMD Rule 1149, Storage Tank Degassing, applies to:

- Aboveground storage tanks greater than 39,630 gallon capacity containing organic liquid with Reid Vapor Pressure (RVP) of 2.6 psia, or greater.
- Tanks less than 39,630 gallons but greater than 19,815 gallons that contain organic liquid with RVP of 3.9 psia, or greater.
- Underground storage tanks (such as those at gasoline dispensing facilities) that are greater than 500 gallons and contain organic liquid with RVP of 3.9 psia, or greater.

This proposed control measure would expand the source category to include:

- Pipelines of an unspecified size/volume, and unspecified RVP applicability limit.
- Previously unregulated aboveground storage tanks with capacities less than 19,815 gallons.
- It would also reduce the RVP limits for organic liquids subject to the Rule.

Method of Control

The same (or, similar) emission control devices (e.g., carbon adsorption, thermal oxidizers, etc.), which are used for storage tank degassing today, would likely be applicable to the proposed expanded group of sources.

Estimated Emissions Reductions

The AQMD has not provided emission reduction estimates for this proposed control measure. It should be noted that the various potential emission control technologies all have some environmental implications of their own, for example, combustion devises produce NOx, carbon treatment systems produce solid wastes, etc. WSPA believes that these other environmental implications need to be considered in any potential rule development.

Cost and Cost-Effectiveness

The AQMD has not provided cost effectiveness estimates for this proposed control measure.

The cost impact of this control measure on the industry will be largely determined by the new vapor pressure applicability limit. The details regarding applicability are also needed in order to determine potential emissions reductions and cost-effectiveness. WSPA believes that there will be a point of diminishing potential emission reductions as vapor pressure limits and/or tank size thresholds are lowered – we urge the District to carefully evaluate this relationship.

CONCLUSIONS AND RECOMMENDATIONS

WSPA may wish to provide additional comments on this proposed measure once the details of the proposal have been developed. In the mean time, WSPA respectfully seeks clarification of the following issues:

- The concept of pipeline degassing – we seek clarification on pipeline applicability and the kind of pipeline (and their services) involved.
- The emission reductions associated with the degassing of large tanks containing liquid having a RVP less than 2.6 psia.
- The emission reductions associated with the degassing of tanks that are less than 19,815 bbls containing liquid having a Reid vapor pressure of less than 3.9 psia.
- What is meant by "enhanced control technology"? Has the District identified such technologies?
- How would the District seek "increasing control efficiency"?
- How would the District establish and enforce potential "concentration limits"?

CONTROL MEASURE 2007 CMB-02, FURTHER SOx REDUCTIONS FOR RECLAIM

This measure proposes to achieve further reductions in SOx through reductions in RECLAIM SOx allocations from 2010 through 2014, and remaining constant thereafter. The proposed reduction is 3.0 tons per day, against a current inventory of 11.66 tons per day. WSPA strongly opposes this Control Measure due to the onerous level of reduction (25 percent), its disproportionate impact on the refining industry, and the fact that refinery SOx sources are already well-controlled.

While there are currently just over 300 facilities in the NOx universe, there are only 33 sources in the SOx universe. Refineries hold over 55 percent of the SOx allocations; therefore, refineries would have to produce over half of the target reductions. Our opposition to this measure needs to be considered in light of the fact that, even before the November 2005 amendments to Rule 1118 - Flares (with its declining emissions targets), refineries had voluntarily produced SOx emission reductions of approximately six tons per day (CY 2005 compared to the baseline CY 2000).

DISCUSSION

Method of Control

Three methods of control are proposed. One is to achieve reductions from implementing the Rule 431.2 sulfur content of 15 ppm for liquid fuels (e.g., diesel fuel) used at stationary sources (including RECLAIM facilities). Second is to credit BACT achieved in the past due to Rule 2015, and third is to implement any BARCT not yet incorporated in the current "ending" SOx allocation.

Rule 431.2 (e)(3) already applied this "proposed" 15 ppm sulfur limit to liquid fuels used at RECLAIM sources – the requirement was effective as of 2004. Emission reductions may or may not have already been credited to the SIP – but, regardless, the emissions reductions have already been achieved.

The proposal to credit BACT achieved due to Rule 2015 is not clear. Rule 2015(c)(3)(C) does discuss reevaluation of accuracy of emission factors for SO_3 emissions from petroleum refineries; however, WSPA would request clarification and/or details from the District before commenting further.

With respect to the third proposed method of control, the concept of incorporating BARCT that is not yet in the ending allocation, WSPA would like to understand its relationship to the BARCT shave required by the state Health & Safety Code.

Regardless of the method ultimately used to determine the overall amount of the SOx emission reduction, the reduction should apply evenly (by percent) to all RECLAIM SOx facilities. The RECLAIM trading market was designed and intended to provide an economic incentive for

technology advancement and to provide a mechanism for allowing facilities to employ the most cost-effective emission reduction strategy (i.e., purchase RTCs or install controls, which ever is the more economic option for that facility). Applying the SOx reduction evenly to all RECLAIM facilities would retain these important RECLAIM market attributes, and would retain consistency with the NOx RECLAIM program.

Estimated Emissions Reductions

AQMD has estimated a 3 ton per day emission reduction but the basis for this estimate is not known. Currently, there exists only a 2 ton per day differential between SOx emissions and SOx allocations. Because there is no "cushion", refineries would have to install some type of further emissions controls (unidentified), at an undetermined cost, to achieve their portion of the 3 ton per day reduction. (As stated above, refineries hold over half the SOx allocations, thus, refineries alone would bear over half the total reduction burden.)

Refineries have already contributed substantially, and disproportionately, to SOx emission reductions. The 2003 AQMP Control Measure CMB-07, and the subsequent amendments to Rule 1118, targeted SOx emissions from refinery flares. Refineries have very successfully reduced SOx from flaring – more than doubling the AQMP commitment – prior to the November 2005 amendments to Rule 1118. (More costly monitoring and groundbreaking prohibitions will soon go into effect on refinery flares.)

A reduction, similar to this proposed reduction to the RECLAIM SOx universe, was adopted in January 2005 for the RECLAIM NOx market. The NOx reductions were originally proposed in the AQMP as a 3 ton per day reduction on a 30 ton per day market, or, ten percent. However the final reductions ended up as a 22 percent overall reduction – a seven-fold increase. There are on-going concerns about stability of the RECLAIM market and regional growth limitations. Here, the proposed SOx reduction is 3 tons per day on a 12 ton per day market, or, 25 percent. Those same concerns about RECLAIM market stability and growth limitations are amplified because the RECLAIM NOx impact would be exceeded by an even larger RECLAIM SOx cut.

Cost and Cost-Effectiveness

SCAQMD has not estimated the cost of implementing this measure, or, its cost-effectiveness; WSPA requests that costs and cost-effectiveness be determined. WSPA also notes that any BARCT analyses must consider cost effectiveness. Cost effectiveness limits should be defined before any analysis is conducted, both in dollars per ton reduced, and effective life of the equipment.

CONCLUSIONS AND RECOMMENDATIONS

A steep, 25 percent reduction in RECLAIM SOx allocations is proposed by this Control Measure, 2007 CMB-02. However, unlike the NOx market, the SOx market is small with only 33 participating sources. Over half of the proposed SOx allocation reductions would have to come from WSPA-member refineries, who only recently provided substantial SOx reductions (currently in excess of 6 tons per day – First-Half 2006 compared to CY 2000). Although the District seeks to perform a BARCT analysis on the RECLAIM SOx Market, this Control Measure does not provide an assessment of the feasibility, or the associated cost, of this large reduction. Cost effectiveness has also not been defined. Therefore, WSPA strongly opposes the pre-determined and unjustified proposed reduction in RECLAIM SOx allocations. If a reduction is ultimately determined to be feasible and cost-effective, WSPA recommends that the reduction apply evenly (by percent) to all RECLAIM SOx facilities.

WSPA also recognizes that this measure references proposed control measure MCS-01 – please see our comments on that measure.

12/07/06

CONTROL MEASURE 2007 CMB-04, NATURAL GAS FUEL SPECIFICATIONS

This measure would establish natural gas fuel specifications for gas supplied to sources within the SCAQMD's jurisdiction. The stated objective is to minimize potential future NO_x emission increases from the combustion of natural gas in stationary applications.

DISCUSSION

Background

Gas transported on the Southern California Gas Company (SoCalGas) system has had an average system Wobbe Index[8] (Wobbe) of 1332, although transportation volumes have ranged as high as 1431. Natural gas consumed in the South Coast Air Basin has had an average Wobbe close to the SoCalGas system average of 1332. In September, the California Public Utilities Commission (CPUC) issued a decision that tightens the Wobbe specification in the SoCalGas gas quality tariff, mandating that SoCalGas only receive gas with a Wobbe Index in the range of 1290 to 1385. Within this regulation, depending upon the point of market entry of regasified liquefied natural gas (LNG) and other market-related factors, the average system Wobbe could increase above 1332. The SCAQMD anticipates that if LNG is introduced, the average Wobbe of gas consumed by stationary sources within the Basin could increase above historical levels.

Proposed Method of Control

The control measure proposes to establish a maximum Wobbe of 1360 for natural gas supplied to sources within the SCAQMD's jurisdiction. The proposed control measure states that "LNG suppliers could achieve the objective of this control strategy by 1) Importing a high methane LNG, such as the 99+% methane gas proposed by BHP Billiton; 2) Removing the more complex hydrocarbons by condensing processes; or 3) Adding inert gases like nitrogen." More specific control measures, such as further controls on stationary sources, are not specified in this particular control measure. It should be noted, however, that another proposed AQMP measure (LTM-02) would force a NO_x reduction of at least 2.5 tons per day on RECLAIM sources to make up for the anticipated introduction of higher Wobbe gas starting in 2008.

Estimated Emissions Reductions

Projected emission reductions from the control measure are uncertain at this time and require further analysis.[9] The AQMP cites a study by SoCalGas, which estimated that importing 1.0 Bcf/day of LNG could increase NO_x emissions by 1.2 tons per day, but finds that there are not

[8] The Wobbe Index, which measures gas interchangeability, is derived by dividing the higher heating value of the gas by the square root of the gas' specific gravity.

[9] The AQMP concludes that the measure will lead to a reduction in future NO_x emissions. This conclusion was advanced by the AQMD without analytical support in the CPUC's gas quality proceeding. The AQMD's argument in that proceeding ignored the possibility that while the rate of emissions from a source could increase, there may not be an increase in the total emissions mass.

adequate data to support this estimate. The SCAQMD states that the control measure may only reduce future emission increases rather than provide emission reductions from current levels.

Cost and Cost-Effectiveness

The AQMP provides no cost estimate or analysis of cost-effectiveness for this control measure.

CONCLUSIONS AND RECOMMENDATIONS

WSPA opposes this proposed control measure on several grounds:

1. The control measure exceeds the scope of SCAQMD jurisdiction.

The District holds "primary responsibility for control of air pollution from all sources, other than emissions from motor vehicles." (Health & Safety Code §40000). Nothing in the many statutory provisions governing the responsibilities of the AQMD authorizes the agency to regulate the quality of natural gas consumed by a stationary source; the closest related provisions address the District's responsibility to promote the use of clean burning fuels, which include natural gas. The primary orientation of the statutory scheme addresses the consequences of fuel combustion, such as NO_x emissions, in stationary source regulation.

Despite the statutory framing of the SCAQMD's authority, the proposed control measure would not regulate NO_x or any other criteria or non-criteria pollutant. Instead, it would regulate the quality of natural gas supplied to stationary sources within the AQMD by SoCalGas or any other supplier. Notably, the measure requires no correlation between gas quality and the actual NO_x emissions from a specific stationary source.

The focus of the measure is misplaced. The rule would prohibit SoCalGas or any other party from transporting gas with a Wobbe Index greater than 1360, stepping into the regulatory arena of another state agency. Natural gas quality specifications for gas transported by investor-owned utilities, such as SoCalGas, have long been regulated by the CPUC pursuant to Public Utilities Code §701. In fact, the measure would conflict directly with current CPUC regulations, adopted in D.06-09-039 (Sept. 21, 2006), which permit SoCalGas to receive and transport gas with Wobbe Index values between 1290 and 1385.

SCAQMD appears to recognize this weakness. The District acknowledges that the agency may need to seek additional legislation to implement this measure.

2. Adopting the proposed control measure would violate provisions of the Health and Safety Code, which require the SCAQMD to enforce state law and adopt regulations that do not conflict with other state regulations.

The SCAQMD has a statutory obligation to "enforce all applicable provisions of state ... law" (§40001(a)) and adopt rules and regulations that "are not in conflict with state law ... rules and regulations." (§40440(a)). As noted above, the SCAQMD has over-stepped its authority in proposing Control Measure 2007CMB-04, which would violate pre-existing CPUC regulations promulgated within the proper scope of CPUC statutory authority.

The SCAQMD has rights and has exercised its rights in seeking to address gas quality within the scope of CPUC authority. Section 40701 grants the District the power "to cooperate and contract with any federal, state, or local governmental agencies, private industries, or civic groups necessary or proper to the accomplishment" of its purposes. More pointedly, the SCAQMD has an express "duty to represent the citizens of the basin in influencing the decisions of other public and private agencies whose actions might have an adverse impact on air quality in the basin." (§40412). The District exercised these powers and duties through its participation in the CPUC's Rulemaking 04-01-025, which culminated in D.06-09-039, and has recently appealed that decision in an Application for Rehearing (filed October 25, 2006). To go beyond these powers and duties violates the District's obligation to comply with state law and regulation.

3. Contrary to the suggestion in the proposed control measure, the measure could not be enforced as a SCAQMD "boutique" standard.

The measure contemplates regulation of quality specifications for gas "supplied to sources within the SCAQMD's jurisdiction." This proposed AQMP measure appears to contemplate the creation of a District-specific "boutique" standard. To the extent a gas supply source originates within the District, the SCAQMD can draw a fair conclusion that the gas physically will be supplied to gas users within its authority. For other in-state or interstate gas sources, however, a determination of which gas sources will be physically serving the demand of stationary sources in the Basin cannot be generalized. Which gas supplies ultimately serve stationary sources within the Basin will depend over time upon the balance of gas flows from various receipt points into the SoCalGas / SDG&E and PG&E systems, and the highly-seasonal demands both within and outside of the District.

Consequently, the only certain means of ensuring compliance with the measure would be to restrict the Wobbe of all gas supplies delivered into the SoCalGas system to 1360 or less. These restrictions, however, would affect not only new LNG supplies, but could limit the delivery of existing in-state and interstate natural gas supplies. As noted in CPUC hearings, existing supplies from a variety of sources (e.g., Kern and in-state sources) range above 1360 Wobbe. In other words, to ensure uniform enforcement of the regulation, the SCAQMD would step directly into the realm of CPUC (and possibly FERC) authority.

4. Without added clarification, the proposed measure could have the unintended consequence of

curtailing existing supplies serving stationary sources within the District.

The control measure addresses natural gas fuel specifications for gas supplied to stationary sources within the SCAQMD's jurisdiction. While the AQMP measure seems most concerned with new LNG entry, the measure makes no distinction between "existing" and "new" supplies. The wording of the proposed measure would suggest that *any* gas consumed by a stationary source within the Basin would be subject to the regulation. Without clarification, the measure could have the effect of curtailing existing supplies, some with a Wobbe higher than 1360, currently serving sources within the Basin.

Additional Observations

As noted above, measure CMB-04 is related to measure LTM-02. CMB-04 addresses the source of a perceived problem (higher Wobbe gas), while LTM-02 addresses one of SCAQMD's anticipated consequences (increased NO_x emissions by RECLAIM sources). If CMB-04 were successfully implemented, there would be no additional emissions that must be offset through RECLAIM. Even if CMB-04 were not implemented, Phase I of LTM-02 may not be required. It is not clear that an increased Wobbe would, in fact, result in increased emissions from RECLAIM sources. (As WSPA companies have argued before the CPUC, the rate of emissions could increase with no material increase in the total mass of emissions.) If no material emissions increases actually occur, there would be no need for RECLAIM program offsets under LTM-02.

12/07/06

CONTROL MEASURE 2007 BCM-01, PM CONTROL DEVICES

This measure proposes to strengthen existing regulatory requirements for baghouses used to control PM emissions – but the write-up also states that the applicability of the control measure could be extended to other types of control devices, "... including wet scrubbers and electric (sic) precipitators ...".

DISCUSSION

Background

The SCAQMD Board adopted Rule 1105.1, Reduction of PM10 and Ammonia Emissions from Fluid Catalytic Cracking Units, in November 2003. This rule addresses particulate emissions from FCC Units at petroleum refineries. Examples of the technologies that the refineries might employ are wet scrubbers and electrostatic precipitators (ESPs).

There is no suggestion in the draft control measure that it might be applied to particulate control equipment serving refinery FCCUs. However, notwithstanding WSPA's concerns with the requirements of Rule 1105.1, we seek assurance that any eventual requirements arising out of this control measure will not supercede the existing requirements of Rule 1105.1.

CONCLUSIONS AND RECOMMENDATIONS

WSPA seeks clarification, in the discussion of control measure BCM-01, that any requirements will not apply to refinery FCCUs, which are already regulated by Rule 1105.1.

11/13/06

CONTROL MEASURE MCS-01, FACILITY MODERNIZATION

This proposed measure seeks to obtain further emissions reductions of various pollutants (e.g., VOC, NOx and PM-2.5) by requiring that facilities, 1) retrofit or replace permitted equipment with BACT at the end of its useful life as pre-determined by the SCAQMD, and 2) use super-compliant (VOC) materials for surface coating applications. Of the five facility emission components listed in the proposed measure, three are of interest to, and a concern of, WSPA and its members:

- Combustion Sources – NOx.
- Fugitive VOC Emissions.
- PM-2.5 Emissions from Facility Operations.

DISCUSSION

WSPA understands that, while the SCAQMD intends this measure to be translated into a set of firm requirements (i.e., modernization would not be voluntary), the District also intends pursue state and federal tax incentives to alleviate some (or, all?) of the costs. The requirements coupled with incentives could result in businesses becoming exceptionally low emitters – which achieves progress toward meeting air quality standards – while still maintaining a healthy and robust business climate in the region.

These are intriguing concepts. However, because refineries in the South Coast Basin are already among the cleanest in the world, the cost of achieving further emissions reductions will be very high compared to the relatively low level of potential emission reductions. Because the WSPA-member facilities already demonstrate low emission rates relative to refineries nationally, incentive programs (credits and/or tax incentives) would be a critical component of any facility modernization program.

WSPA understands that this draft proposal is still a work in progress and, as such, lacks detail. However, because the details are necessary in order for WSPA (or, any impacted source categories) to comment on the proposal, we would request numerous clarifications as outlined below.

1. The proposal lacks specifics on how the modernization program would interface with the proposed AQMP Control measures for NOx and SOx under RECLAIM (LTM-02 and CMB-02, respectively), and which specific types of facilities would be impacted

Among the clarifications WSPA seeks are the following (in no particular order):

- Would the measure apply to NOx RECLAIM facilities given the inclusion of LTM-02 (incorrectly referenced as LTM-03 on page 68 of Appendix IV-A)?
- The measure references PM2.5, not SOx, but then references the SOx control measure CMB-02 – is it the intent of the District to regulate SOx or directly emitted PM2.5 with this measure, or both?

- If the intent is to regulate SOx, would this measure apply to SOx RECLAIM facilities, or, would only CMB-02 apply to SOx RECLAIM facilities?
- Is it anticipated that PM2.5 reductions will come from RECLAIM facilities who are potentially being regulated for NOx and SOx (which are both precursors to PM-2.5)?
- Would the 20 tpy VOC cutoff for impacted facilities apply only to coating and solvent facilities? If a threshold is being offered to exempt smaller facilities, it should apply equitably to all sources (e.g., terminals, fuel dispensing facilities, etc.)
- FUG-01, LTM-03, and this measure seem to all claim VOC reductions from the same sources – is there potential double-counting in these measures?

2. The proposal lacks specifics on how a modernization program might be implemented and, thus, raises serious concerns regarding the equitable determination of useful equipment life.

A. Avoiding subjectivity (and, bias) in establishing the useful life of, for example, refinery equipment would be a major concern for WSPA and its members. The potential forced retirement of equipment, regardless of amount of useful life remaining, would be wasteful and cost-ineffective.

Generally speaking, there are two objective factors that are considered when determining the useful life of major equipment (e.g., process heaters, boilers, "rotating equipment" [such as pumps and compressors], tanks, etc.):

i. An evaluation of actual service conditions with the equipment in operation.
ii. Conducting specialized mechanical/metallurgical inspections – either externally while the equipment is on-line, or, internally when the equipment is shut down (typically during turnarounds every 3-5 years).

It is this type of objective information that is used determine the remaining useful equipment life, and the possible need to repair/refurbish/replace the equipment. In fact, if no wear or deterioration is noted, there may not be any assessment of remaining life made – only a requirement to re-evaluate, or, re-inspect at some future date.

An example from a recent meeting with SCAQMD staff was that the useful life of "a boiler" should be twenty years. However, large, custom-engineered boilers easily last much longer than that. This one example gives rise to several questions:

i. Replacing the boiler by itself does not reduce emissions because approximately the same amount of fuel will be burned to generate steam. Does the District really intend that basic equipment be replaced on specific intervals?
ii. Is this a way to force NSR and the imposition of BACT?
iii. If, instead, the SCAQMD focuses on a replacement of the burners (i.e., the actual the part of the boiler that emits) when a modernization requirement is triggered – would the lowest NOx burners have to be installed, or, would an SCR have to be added as BACT.
iv. With NOx being a RECLAIM pollutant, isn't a facility such as a refinery already subject

to BARCT-like requirements for reducing NOx emissions over time?

We would also like to comment on the obvious potential parallel between IRS guidelines regarding depreciation of the cost of various equipment, and a potential effort to pre-determine true "useful" life of that equipment. Although the SCAQMD has not suggested using IRS guidelines, we would like to note that tax accounting methods serve a fundamentally different purpose. While IRS guidelines are not without controversy, they merely define the length of the write-off period – as opposed to triggering the costly replacement of that equipment.

B. If it is proposed that the BARCT shave now becomes a BACT shave as the method of implementing this for RECLAIM facilities, is this a violation of the H&S code that required the BARCT review?

It would seem that yesterday's BACT becomes tomorrow's BARCT. As such the, existing BARCT shave requirements for RECLAIM sources will force cleaner controls over time. These on-going BARCT shaves coupled with an incentive program for early replacement should be adequate to achieve the needed emission reductions.

Appendix IV-A (page 67, 3rd paragraph) refers to "today's BACT" being installed by the attainment dates. Does this mean that BACT will be set in the regulation, and not changed through 2020? Is this applicable for RECLAIM facilities that might be subject to routine BARCT/BACT analyses ?

3. The proposal lacks details and clarity with respect to the claimed emission reductions.

Numerous clarifications are needed in order for WSPA and other stakeholders to understand the emission reductions claimed:

- LTM-02 claims NOx reductions ranging from 3-5 tpd in the long-term. Is this based on the imposition of the facility modernization concept in the RECLAIM program?
- CMB-02 claims SOx reductions of 3 tpd. Is this based on the imposition of the facility modernization concept in the RECLAIM program?
- The measure claims 0.7 and 2.2 tpd PM2.5 reductions for 2014 and 2020, respectively. Are the inventories from which these reductions claimed inclusive of directly emitted PM2.5 from RECLAIM sources and non-RECLAIM sources?
- How much of the VOC reduction estimates are from fugitive sources vs. solvents/coatings? (Suggest the District break these estimates out.)
- How much of the PM2.5 reduction claimed is fugitive vs. operational? (Suggest the District break these estimates out.)
- If imposition of control equipment for one pollutant results in an increase of another

pollutant, is this accounted for in the measure? How will offsets be handled – especially if the modification is done early for credits or tax incentives, will it still be exempt from offsets in NSR as a required project?

- In the emission reduction section, concurrent reductions of SOx and CO have been claimed. The District should list what technologies it assumes installed that would have these kind of concurrent benefits as this would help potentially regulated sources understand better what the impact of this measure will be.

4. WSPA has serious concerns about potential implementation costs and cost-effectiveness, the time horizon, and the likelihood of having incentive programs available (particularly for facilities such as refineries).

Because of the lack of specifics regarding the facilities impacted, reductions claimed, etc., it is impossible to determine the implementation cost, or the cost-effectiveness of the proposed measure.

WSPA has several questions/concerns with cost-effectiveness:

- Cost effectiveness must include a discussion of whether the measure will force the replacement of basic equipment, pollution control equipment, or, both.
- What happens if the cost-effectiveness exceeds the RECLAIM offramp cost for the NOx and SOx portions of the measure?
- Another concern with calculating the cost-effectiveness is the time horizon that will be used. Because of the generally long useful life of equipment at refineries and related facilities, the regulation could require the future imposition of BACT well beyond the attainment deadlines. Notwithstanding WSPA's concerns with any regulations coming from this measure that require installation of expensive controls beyond attainment deadlines, it would not be appropriate to exclude or ignore these costs if that is the intended (or, unintended) consequence of the regulation. Otherwise, some sunset provision would have to be included.
- The discussion in Appendix IV-A, under the section entitled existing equipment (page 67), properly recognizes the difficulty and additional expense related to retrofit of existing equipment with BACT. WSPA agrees and seeks assurance that the additional costs would be properly included in cost-effectiveness calculations.

One simple hypothetical example[10] might be the replacement of process valves with

[10] WSPA recognizes that the District has deemed BSVs to be BACT. However, other than being commercially "available" for some (not all) applications, there has never been any demonstration that BSVs actually reduce emissions. The simple reason for this is that conventional valves (in this case, an existing valve potentially being replaced) may never have leaked in the first place – thus, there is no emissions benefit from the new valve. Furthermore, BSVs can and do fail. The cost-effectiveness of BSVs is very poor. It should be noted that any

bellows-sealed valves (BSVs). Because of the additional weight and larger physical dimensions of BSVs, piping commonly has to be re-configured to accommodate the new BSV – this adds significantly to the cost of replacing valves. It should be noted that, although we wanted to cite this as a good example of why retrofit costs are higher, WSPA would strongly oppose any proposal that might require a large-scale replacement of process valves.

5. WSPA questions SCAQMD authority to require imposition of BACT to existing sources on a retrofit basis.

WSPA concurs with the statement in MCS-01 that, in general, "the District has the authority to regulate emissions from the targeted sources." However, the District does not have authority to regulate emissions in the manner contemplated by this measure.

A fundamental concept of law is that administrative and regulatory agencies have only the authority granted them by the legislature. The legislature has specified that "the District may adopt rules to [r]equire the use of best available control technology for new and modified sources and the use of best available retrofit control technology for existing sources." (Health and Safety Code section 40440) This section is very clear, and intentionally distinguishes between new sources and existing sources due to the greater difficulty and higher cost of installing retrofit controls. Section 40440 does not authorize the application of BACT to existing sources. Moreover, nothing in California law allows the District to establish a mandatory "useful life" for manufacturing equipment and other devices, at the end of which the equipment would have to meet current BACT emissions standards. The District's authority to regulate emissions does not allow it to establish requirements for the mandatory modification or replacement of manufacturing and process equipment, for any reason.

12/07/06

possible emission benefits from this proposal becomes even more cost-ineffective assuming FUG-02 is successful in reducing/repairing VOC leaks faster.

CONTROL MEASURE 2007 MCS-06, IMPROVED START-UP, SHUT-DOWN & TURN-AROUND PROCEDURES

This control measure is proposed as a means of reducing all pollutants from activities associated with start-ups, shut-downs and turn-arounds but, in particular, emissions from flaring. While not specified in its title, the proposed control measure is aimed primarily at petroleum refineries. WSPA opposes this control measure as redundant, unnecessary, and lacking any demonstrable environmental benefit.

DISCUSSION

Background

As noted above, the draft control measure focuses on emissions due to flaring. Therefore, it is important to note that, with respect to SOx emissions from flares (the primary focus of SCAQMD Rule 1118), petroleum refiners in the South Coast Basin have significantly reduced, or permanently eliminated, sources of flaring. Comparing reported flare-related SOx emissions for CY 2005 to the start of emissions monitoring in 2000, emissions have been reduced by approximately 94 percent. The requirements of the amended rule include decreasing emissions targets over the next six years, and an evaluation of options to reduce flaring during planned start-ups, shut-downs and turnarounds.

With these all-inclusive performance-based standards in place, the issues called out in this proposed control measure are unnecessary.

Method of Control

This control measure envisions several potential methods of control:

1. Conduct an analysis to "... identify improved operating procedures that minimize or eliminate the emissions impacts ..." of start-ups, shut-downs and turnarounds.

This proposed analysis is already a requirement of Rule 1118 (see 1118(c)(3)). Therefore, there are no additional potential emission reductions attributable to this method of control.

2. Develop rule amendments that could seek implementation of best management practices.

Requirements within the Federal NESHAPs for Start-up, Shut-down, Malfunction Plans (SSMPs) create the same duty for all affected facilities through a mandatory requirement to utilize "Good Air Pollution Practices" during all periods of start-up, shut-down and turnarounds. Further, a facility's SSMPs must be reviewed after each and every covered activity, and fine-tuned to continually enhance good air pollution control practices. Because "BMPs" are already required under Federal law, this proposed control method would be redundant. Therefore, there are no additional potential emission reductions attributable to this method of control.

3. Develop rule amendments that could require "additional hardware".

Because this potential method of control is very vague, and because each facility is configured differently, WSPA believes that it would be nearly impossible to create a "blanket" regulatory requirement. It would be very difficult to try to determine the potential environmental benefits, if any, for this control method. The same level of difficulty would apply to the estimation of the costs of control and the evaluation of cost-effectiveness.

4. Coordination of turnaround schedules for different process units to minimize emissions.

WSPA believes that, if the District were to evaluate individual refinery turnaround schedules, it would conclude that they are already well-coordinated. WSPA would like for the District to be aware of the fact that all refineries have extensive staffs that are dedicated to scheduling and planning for process unit turnarounds. Further, it is important to recognize that, given the complex ways in which process units are inter-related and inter-connected, refineries have only limited flexibility with respect to turnaround planning options.

5. Installation of redundant equipment.

As the District knows from the operating permits it issues – wherein spare equipment is identified – refineries have extensive equipment redundancy. Where major equipment is not "spared", that equipment is usually specially instrumented for the sake of reliability. It would be very difficult to try to determine the potential environmental benefits, if any, for this control method. The same level of difficulty would apply to the estimation of the costs of control and the evaluation of cost-effectiveness.

6. Operator training.

Refineries typically have extensive formal operator training programs. It would be very difficult to try to determine the potential environmental benefits, if any, for this control method.

Estimated Emissions Reductions

While the District states that the control measure is "expected" to result in emission reductions, those reductions could not be quantified. The reasons that emission reductions "cannot readily be quantified" are because the proposed methods of control are vague and merely duplicate requirements that already exist.

Cost and Cost-Effectiveness

The District has not determined the cost or cost effectiveness of this proposed control measure. WSPA notes that, if the District were to develop any of these concepts, potential lost production of intermediate and/or final products must be included in the cost analysis.

CONCLUSIONS AND RECOMMENDATIONS

WSPA believes that current industry practices, together with the requirements of Federal law and Rule 1118, as amended, meet or exceed the goals set forth in this proposed control measure. Therefore, it is very doubtful that this measure would result in any emissions benefits.

12/07/06

CONTROL MEASURE 2007 FLX-02, REFINERY PILOT PROGRAM

The Refinery Pilot Program is being developed as a proposed alternative control measure of the 2007 Air Quality Management Plan. It is WSPA's intention to provide comments on the final draft version of FLX-02, which, we understand, will be published in January 2007.

12/08/06

CONTROL MEASURE 2007 EGM-03, EMISSIONS MITIGATION AT FEDERALLY PERMITTED PROJECTS

The intent of this proposed control measure is to address mitigation measures for Federally permitted sources potentially impacting the District. The specific example of an LNG facility in federal waters offshore of Ventura County is cited as the need for this measure. The control measure describes two concerns with this LNG project – pollutants transported downwind into the Basin, and "... a concern about the quality of natural gas ...".

DISCUSSION

Method of Control

There is a general assumption that emissions from the facility will be controlled through the use of appropriate control technologies. However, mention is also made of three potential mitigation strategies:

- Call for US-EPA to adopt measures to mitigate emissions increases – apparently from both the facility itself, and anything related to the quality of the LNG.
- Call for US-EPA to provide mitigation fees to the SCAQMD.
- Barring success with either of the two strategies above, the District might require sources in the Basin to offset any emissions increases due to the example LNG project (or, any future projects).

Estimated Emissions Reductions

Emissions attributable to the example LNG project, or, other future Federally permitted projects, have not been estimated.

Cost and Cost-Effectiveness

The measure states that the cost-effectiveness cannot be determined.

CONCLUSIONS AND RECOMMENDATIONS

1. Mitigation of potential pollutant transport impacts. As drafted, this control measure appears to recognize that permits for the example offshore LNG facility will be issued by US-EPA, and that US-EPA will impose appropriate emission control requirements for the project. WSPA recognizes that the District may have views regarding emission controls for the project, and/or the transport of any net emissions that remain. However, we believe that the appropriate venue for the District (or, any other stakeholder) to pursue its concerns with any Federally permitted project is through National Environmental Policy Act (NEPA)[11]. An AQMP control measure is not needed for the District to do so.

[11] The draft control measure also cites CEQA as the appropriate mechanism for addressing emissions associated with the on-shore part of the example LNG project.

2. Potential concerns regarding the quality of the LNG associated with the example project. The discussion of LNG (i.e., natural gas) quality is more fully described in draft Control Measure 2007 CMB-04. WSPA would respectfully refer the reader to our comments on that control measure.

3. Requirements for sources in the South Coast Air Basin to offset potential emissions increases associated with the example LNG project (or, other future Federally permitted projects). WSPA submits that a potential requirement for sources in the Basin to offset emissions from Federally permitted projects is inequitable, and would simply be unacceptable.

CONTROL MEASURE 2007 MOB-02, EXTENDED EXCHANGE PROGRAM

The intent of this control measure is to continue promoting the accelerated turn-over of in-use Small Off-Road Engines (SORE)[12] and other engines, such as recreational outboard boat engines, through expanded voluntary exchange programs.

DISCUSSION

Background

The SCAQMD has sponsored a lawn mower buy back program since 2005, and over 15,000 old lawn mowers have been taken out of service. More recently, the SCAQMD sponsored an exchange program for gasoline-powered leaf blowers used by commercial gardeners.

Method of Control

The proposed method of control is, essentially, an expansion of existing buy-back programs (i.e., increasing the number of exchange events, and increasing funding for the program). .

Estimated Emission Reductions

Existing emission limits[13] applicable to these types of sources do not apply to existing equipment. Although individual engines are small sources, there are literally thousands of them. Total reductions attributable to an extended exchange program will depend on the number and type of equipment that is exchanged.

Estimated Cost-Effectiveness

The cost-effectiveness of the proposed extended program not been determined, and will vary depending upon the relative sizes of the sources, duration of their use, etc. However, the SCAQMD estimates that the cost-effectiveness of existing programs ranges from $ 800 per ton to $ 9840 per ton, for the leaf blower and lawn mower programs, respectively.

CONCLUSION AND RECOMMENDATIONS

CARB and the District have determined that emissions reductions from these sources can be achieved only through voluntary means using market-mechanisms, or, incentives. WSPA supports emission reductions that might be achieved, in a cost-effective manner, from exchange programs such as the ones being proposed.

---

[12] Engines within the SORE category include those spark ignition engines that run on gasoline, or other fuels, and are rated below 25 hp (19 KW). Common equipment includes lawn and garden equipment such as lawn mowers, leaf blowers, and other commercial equipment.

[13] CARB established emissions standards for new SORE engines in 2003.

However, WSPA also notes that these types of exchange programs could become an important option within the proposed Refinery Pilot Program (Control Measure 2007 FLX-02). Therefore, we urge that care be taken to ensure that the proposed extended exchange program does not conflict with, or preclude the use of, an exchange program within the Refinery Pilot Program.

11/15/06

CONTROL MEASURE 2007 MOB-03, BACKSTOP MEASURE FOR INDIRECT SOURCES OF EMISSIONS FROM PORTS AND PORT-RELATED FACILITIES

This proposed control measure would address emissions from all new and existing stationary and mobile sources at ports and port-related facilities, including nonattainment criteria pollutants and toxics emissions. The objective of this backstop measure is to ensure the adequacy of and effective implementation of port measures and strategies proposed or developed by the ports or CARB. Possible control approaches include limitations on increases in estimated health risks caused by toxic air contaminants; reduction of health risks caused by toxic emissions from port activities and port projects; prevention of emission increases of nonattainment pollutants for port projects; and emission reduction goals for ports to implement AQMP measures.

DISCUSSION

Background

In January 2006, the AQMD Board approved Chairman Burke's Clean Port Initiative, including several action items to control emissions of criteria pollutants and toxics from ports and port-related facilities. The Chairman's initiative called for ports to take sufficient and coordinated actions to control emissions. Further, it called for AQMD to develop and adopt "backstop" rules that would take effect if the ports did not take actions that, in conjunction with standards adopted by CARB, EPA, AQMD and the International Maritime Organization, would achieve sufficient, timely emission reductions. The goals of the backstop rules would be to, 1) achieve reductions in emissions from port-related sources to levels needed for attainment of ambient air quality standards, consistent with the AQMP, 2) reduce calculated health risks from toxics to acceptable levels, and 3) prevent increases in health risks and criteria pollutant emissions from port projects.

Method of Control

The goal of this measure would be to establish and achieve both Port Standards and Project Standards.

The potential Port Standards would control emissions from port-related sources to:

- Reduce year 2014 and 2020 emissions of NOx, SOx and PM to implement the AQMP strategy to attain federal PM 2.5 and 8-hour ozone ambient air quality standards.
- Ensure interim progress by reducing year 2011 NOx, SOx and diesel PM emissions to 2001 levels.
- By 2020, further control diesel PM by at least 85 percent compared to 2000 levels.

The potential Project Standards would assure that approvals of port projects will:

- Implement all measures needed to achieve the Port Standards.
- Prevent significant increases in NOx, SOx, PM and health risk from diesel.

The potential rule, or regulatory requirements, would only be triggered if emissions exceed a target or triennial milestone in consideration of annual port emission inventories.

Estimated Emissions Reductions

Emissions reductions have not been estimated.

Cost and Cost-Effectiveness

Neither implementation costs, nor, cost-effectiveness have been estimated.

CONCLUSIONS AND RECOMMENDATIONS

WSPA believes that future alternative emission reduction technologies (e.g., controls on trucks, locomotives, etc.) must be considered as:

1. Options for complying with any backstop measures for ports and port-related sources.
2. Alternative mitigation measures for both existing terminals and new projects.
3. Available for credit generation if done early, or, considered surplus.

However, it will be critical for any new technologies to be carefully evaluated through performance and applicability testing. WSPA submits that stakeholders would probably find it easier to support emission reduction technologies – provided that they have been proven – in lieu of being asked to support the uncertainty of complicated changes in international shipping practices.

CONTROL MEASURE 2007 LTM-02, FURTHER EMISSION REDUCTIONS FROM NOx RECLAIM FACILITIES

This proposed measure is separated into two implementation phases:

- Under Phase I, beginning in 2008, the RECLAIM allocations will be reduced to offset claimed potential NOx emission increases anticipated from the introduction of natural gas with a Wobbe Index greater than 1360 (see proposed Control Measure CMB-04).
- Phase II addresses the potential reduction of NOx emissions due to evolving BARCT in the next 10 to 15 years, and any BACT installations due to RECLAIM NSR requirements.

The draft AQMP also contemplates long term measures ("black box") divided between the District, ARB, and US-EPA. Use of these black box control measures would require the District to voluntarily bump-up to the "extreme" non-attainment classification for the 8-hour ozone standard. The proposed measures rely on yet-to-be-developed technologies.

DISCUSSION

Background

The bulk (92 percent) of the baseline 2002 NOx inventory of 1090 tons per day is attributable to mobile sources. By contrast, the contribution of RECLAIM NOx sources to the baseline inventory is 29 tons per day (2007 AQMP Table 3-1B) – less than three percent of the total.

WSPA notes that the planning NOx inventory for 2014 is 27 tons per day, and it appears that this value fails to recognize the 7.7 tons per day reduction attributable to the 2007-2011 RECLAIM NOx BARCT-shave, as approved by Governing Board on January 7, 2005 (based on a $15,000/ton cost effectiveness threshold).

Method of Control

The actual methods for potentially reducing NOx emissions, for either Phase I or Phase II, have not been identified. Potential pollution control technologies for Phase II are "BARCT" (expected to possibly evolve over the next 10 to 15 years), and any BACT installations due to RECLAIM NSR requirements. It is unclear if the future NOx shave will be across the universe of RECLAIM NOx sources, or source specific, with a disproportionate impact on the refining industry.

Estimated Emissions Reductions

Phase I of emission reductions are estimated to be "at least" 2.5 tons per day of NOx – although the potential increase in NOx emissions due to new LNG imports is speculative, and the need for this reduction has not been demonstrated.

Phase II reductions are estimated to be 3 to 5 tons per day of NOx. Although WSPA recognizes that the RECLAIM NOx program must be evaluated periodically to ensure the program achieves BARCT-equivalent emission reductions, it should be noted that the overall reduction target for meeting the 8-hour ozone standard is 286 tons per day by 2021. Thus, the potential 3 to 5 ton per day reduction potentially attributable to this measure, is not significant.

Cost and Cost-Effectiveness

The District has not estimated the cost of implementing this measure, or, its cost-effectiveness. WSPA requests that costs and cost-effectiveness be determined. For Phase I, the analysis should consider the costs of adding another NOx shave beyond the 2007 NOx BARCT-shave. For Phase II, a BARCT cost effectiveness threshold should be set at $15,000 per ton of reduction (based on a standardized equipment life for purposes of calculations) consistent with program evaluation criteria of Rule 2015.

CONCLUSIONS AND RECOMMENDATIONS

1. WSPA strongly opposes the proposed Phase I RECLAIM NOx shave for the reasons stated herein, as well as those stated in our comments for CMB-04. Because any potential increase in basin-wide NOx emissions, due to new imports of LNG, is speculative, the need for the proposed Phase I reductions has not been demonstrated. If there is a credible demonstration that basin-wide NOx emissions are expected to increase, based upon rigorous data collection and analysis, the offsetting reductions should be required of all consumers of commercial gas.

2. NOx emissions from RECLAIM sources account for only three percent of the baseline emissions inventory – the proposed reductions attributable to Phase II of this control measure – notwithstanding issues such as feasibility, cost-effectiveness and equity – are unlikely to materially increase emissions levels.

3. The existing requirement for RECLAIM NOx sources to further reduce emissions, during the period 2007 through 2011, will achieve a 7.7 ton per day reduction. However, it appears that neither the inventory, nor the proposed control measure, properly accounts for this reduction.

4. The proposed control measure does not provide an assessment of the feasibility, or the cost effectiveness, of an additional NOx shave layered on top of the existing 2007-2011 BARCT-shave.

5. WSPA recommends that any potential future "Phase II" NOx shave first be proven to be cost effective, and then applied evenly (by percent) across all sources in the RECLAIM NOx universe.

12/05/06

CONTROL MEASURE 2007 LTM-03, LONG-TERM MEASURE FOR FUGITIVE EMISSIONS

This control measure seems to be targeting fugitive emission reductions from the same sources as targeted in certain of the short- and intermediate-term control measures (e.g. FUG-01, FUG-02, MCS-01, MCS-04, MCS-06, and possibly others). Also, the proposed methods of control appear similar to those proposed in the short- and intermediate-term measures. Because of this overlap, WSPA has the following concerns with this control measure:

- The potential for double counting emission reductions
- The potential for over-estimating the emission reduction potential

The projected emission reduction for LTM-03 is 10.1 tons/day, which is 30 percent of the remaining 2020 VOC inventory from the targeted sources. WSPA understands the need to include technology forcing long term control measures in the AQMP due to the short-fall in identified technologies to achieve attainment of the national air quality standards in the South Coast. However, WSPA believes that targeting a further 30 percent reduction from sources that are already tightly controlled, and which will be subject to additional short- and intermediate-term control measures, is unrealistic.

CONCLUSIONS AND RECOMMENDATIONS

Proposed Control Measure LTM-03 appears to be substantially duplicative of other proposed control measures, thus, the targeted emissions reductions for this measure may not be achievable.

WSPA requests that language be included in the "Emission Reduction" section of the control measure indicating that the estimated emission reduction of 10.1 tons/day by 2020 will be credited for emission reductions achieved in the short- and intermediate-term control measures targeting the same sources.

CONTROL MEASURE 2007 LTM-04, GLOBAL WARMING STRATEGIES

Governor Schwarzenegger's 2005 Executive Order S-3-05, in conjunction with AB-32, California Global Warming Solutions Act of 2006, requires reductions of greenhouse gas (GHG) emissions, and creates a structure of regulatory agencies to develop rules and regulation for achieving the reductions. The Governor's EO established the following targets for GHGs:

- Reduce to 2000 levels by 2010.
- Reduce to 1990 levels by 2020.
- Reduce to 80 percent below 1990 levels by 2050.

This control measure seeks to achieve (and quantify) concurrent emission reductions of criteria pollutants (e.g., NOx and VOCs) that are associated with Statewide GHG programs aimed at both mobile and stationary sources.

DISCUSSION

Method of Control

The draft control measure does not propose specific emission reduction measures for the SCAQMD to implement; rather, it summarizes emission reduction strategies currently underway, as well as those that are anticipated. With respect to stationary sources, the draft control measure refers specifically to a requirement for the "significant development and implementation of energy efficiency technologies". However, it must be noted that the typical petroleum refinery has been implementing energy efficiency projects and programs for many years. Both the potential implementation of energy efficiency programs, and the proposed "extensive shifting" of energy production to renewable sources are potential concerns of the petroleum refining industry.

Estimated Emission Reductions

The draft control measure assumes a fifteen percent reduction of criteria pollutants associated with fuel combustion source categories. The draft proposes to refine the estimates of emission reductions over the *next several months* based on stakeholder input and further consultation with the ARB. As noted in our recommendations, below, WSPA believes that reasonably accurate assessments of the GHG inventory, and the potential for reductions from various source categories, will not be available for several years.

Cost and Cost-Effectiveness

Neither costs nor cost-effectiveness have been determined.

CONCLUSIONS AND RECOMMENDATIONS

WSPA believes that it is appropriate to seek SIP credit for emission reductions of criteria

pollutants associated with GHG reduction programs. However, we believe it is premature to take credit for such reductions in the 2007 AQMP since critical elements regarding the implementation of AB32 have yet to be determined. CARB has just embarked on their comprehensive GHG reduction program as required by AB 32.

The recommendations in the Cal-EPA Climate Action Team Report to the Governor and Legislature, pursuant to Executive Order S-3-05, are for consideration in developing California's policies but are not enforceable. Further, the state-wide emission inventories of CO_2 equivalent gases are only very preliminary estimates. Estimated reductions of criteria pollutant emission cannot be apportioned to South Coast Air Basin before the GHG inventory is "trued-up", the baseline emissions developed, projected 2020 emission levels updated, and rules and regulations finalized.

Therefore, WSPA strongly recommends that this proposed control measure be omitted from the 2007 AQMP, and revisited after full implementation of AB32 in 2011. Please note that our comments are based on the understanding that the District is not proposing to regulate GHG emissions independently.

12/11/06

CONTROL MEASURE 2007 ONRD-03, CALIFORNIA PHASE 3 REFORMULATION GASOLINE SPECIFICATIONS

WSPA recommends the SCAQMD's gasoline reformulation proposal, which is even more restrictive than the District's previous proposal, be reviewed by the California Air Resources Board (ARB), which has jurisdiction for fuel formulation throughout the state. Since the ARB is currently working on an update to the Predictive Model along with a possible review of some of the gasoline specifications, we believe ARB should consider including the District's proposed reformulation in the current CEC's Producibility Study for a realistic assessment of the impact of these specifications on gasoline supply in the state.

DISCUSSION

The ARB is currently revising its gasoline standards and the Predictive Model to offset the emission increases from the blending of ethanol, and reportedly plans to adopt the revisions in early 2007. We appreciate the SCAQMD's active involvement in this rulemaking. WSPA recognizes the need for cleaner burning gasoline and other cleaner burning fuels to play an important role in the AQMP, and as such, we support ARB's current efforts to meet the requirements of SB 989. No recognition is given by the District, however, to the actual in-use levels of components like sulfur, which have been measured and reported on by ARB to be substantially lower than the requirement.

The proposed fuel standards in ONRD-03 constitute a very significant fuel reformulation – possibly even greater than the reformulation involved in CARB Phase 2 or 3 - since California already has the most stringent fuel standards in the world. Among other examples, ARB reduced RVP only 0.1 psi between Phase 2 and Phase 3 gasoline specifications. The draft AQMP calls for a 0.4 psi reduction. In addition, one proposed specification – zero percent oxygen content – contradicts ARB's current requirement to provide oxygenated gasoline in the winter months in the South Coast.

These proposed changes could have a dramatic impact on the ability of and costs to refiners to make adequate supplies of CARB gasoline. It could significantly increase the need for greater imports of blending components. This proposal needs to be evaluated by the ARB and CEC through a state-wide effort to look at its overall environmental and economic impacts.

The AQMP proposal doesn't seem to recognize the limitations of a more stringent fuel formulation in terms of producing lower emission in new cars. The proposed reformulation would simply make it incrementally easier for auto companies to certify and/or maintain in-use emissions standards that they already are required to achieve. Neither the referenced Auto Alliance proposal, nor, the SCAQMP proposal for tighter fuel specifications include lowering emission limits for the vehicles in which the fuel is used. Therefore, imposing tighter fuel specifications without tighter vehicle limits may not result in significantly lower emissions – especially as 2020 emissions are estimated. The AQMP should include another on-road control measure requesting that ARB review the certification fuel specifications used by engine and

vehicle manufactures when certifying their products to ARB emissions limits. The certification fuel needs to be representative of the fuel that the vehicles and engines will actually use in California.

WSPA has many questions about the proposed reformulation and how the proposal was developed and evaluated. For example, were the estimated emission reductions based on current regulatory limits or in-use fuel properties? It is also unclear what the basis was for the cost effectiveness figures.

The first sentence under "Regulatory History" (in Appendix IV) appears out of date, and the reference to ARB's Complex Model is inaccurate. Also, using ARB's outdated and inaccurate early evaluation model to estimate emissions reductions is not a viable approach.

In the summertime, CaRFG3 for the South Coast Air Basin is not required to contain any oxygen due to recent actions by the US-EPA. EPA no longer requires oxygen in reformulated gasoline. In the winter-time refiners are still required to add 1.8-2.2 weight percent oxygen as part of the State's CO SIP. Fortunately, we believe the ambient air quality data shows that oxygen is no longer needed in winter-time gasoline, and it could be eliminated.

We do not support the proposal in the control measure to ban oxygenates from cleaner gasoline, or agree with the stated reasons. We also oppose mandating any specific fuel (e.g., ethanol, biodiesel, CNG, etc.). ARB's gasoline rules are emissions/performance-based, so whether a refiner uses an oxygenate or not, its fuel must meet the same emission performance requirements. Plus, other than ethanol, no other alcohols or ethers may be used in CARB fuels unless they first go through a multi-media evaluation. With the planned ARB update of the CARB Predictive Model we don't see any justification to ban oxygenates and deprive refiners of the flexibility that the use of oxygenates offers.

No consideration in this section is given to efforts at the state and federal level to use greater amounts of renewable fuels and diversify current transportation fuels. Likewise, no consideration is given to countervailing state initiatives such as the biofuels initiatives and AB 32 (see LTM-04) which will be relevant should further energy-consuming fuel processing be required to make yet more stringent formulations.

This isn't to say the AQMD is not rightfully concerned with potential environmental impacts and other unintended consequences of the widespread use of new fuels. Although generally supportive of the use of renewable fuels, as demanded by a free market, we too are concerned the State may promote alternative fuels without adequate knowledge of the environmental impact of such fuels, may not have the capability for proper enforcement, and may set fuel specifications that could result in increased emissions. The SCAQMD needs to continue expressing their concerns around such efforts and suggest actions to ARB to prevent any emissions backsliding.

CONCLUSIONS AND RECOMMENDATIONS

We therefore recommend the SCAQMD consider including the following control recommendations and actions:

1. Propose the State eliminate the requirement to use oxygen in winter-time SCAB RFG3 as it is no longer needed.
2. Oppose any state enacted ethanol gasoline mandate as part of a renewable fuels program.
3. Oppose any attempts to relax or waive any existing environmental controls associated with plans to promote the use of renewable or alternative fuels.

In addition, the ARB should review the SCAQMD's proposed reformulation using all relevant criteria such as feasibility, cost-effectiveness, producibility impact, distribution system impacts, etc.

12/07/06

CONTROL MEASURE 2007 ONRD-05, PM TESTING FOR LIGHT AND MEDIUM DUTY VEHICLES

WSPA would not find this proposal objectionable provided that alternatively and renewably fueled vehicles were included in the proposal. There are likely more alternatively fueled vehicles, which are normally certified at the same or similar levels as late model gasoline or diesel powered vehicles, in the South Coast Air Basin than in any other part of the country.

11/10/06

CONTROL MEASURE 2007 ONRD-07, GREATER USE OF DIESEL FUEL ALTERNATIVES AND DIESEL FUEL REFORMULATION

As with the ONRD-03 measure, WSPA recognizes the need for California cleaner-burning diesel to play an important role in air quality improvements in the state. Our industry just completed a successful roll out of US-EPA's and ARB's 15 ppm Ultra-Low-Sulfur Diesel (ULSD) programs across the country. In California, refiners are producing the cleanest burning diesel fuel, with less than 8 ppm sulfur down from an average CARB LSD content of 130 ppm.

WSPA recommends the SCAQMD's diesel reformulation proposal be reviewed by the California Air Resources Board, which has jurisdiction over fuel formulations in the state. Any review of this nature would have to include an analysis by the California Energy Commission of the impact of this type of reformulation on the supply of diesel fuel in the state.

DISCUSSION

The first part of the diesel proposal would, among other things, lower the allowable sulfur content of diesel fuel, lower the aromatics specification, and raise the cetane specification. The proposal would also not allow for any alternative diesel formulations. The second part of the proposal would displace 50 percent of "conventional" diesel fuel with "reformulated diesel and alternatives such as CNG, LNG, DME, LPG, and GTL."

The current ARB-approved alternative certified diesel formulations provide needed flexibility. They are based upon a strict and well-defined testing protocol, and were only granted by ARB after the agency determined the alternative formulation resulted in equivalent emission reductions to a 10 percent aromatic fuel. We oppose the suggested elimination of the use of emissions-equivalent alternatives.

WSPA has a number of questions regarding the proposed control measure:

- There are questions posed in the proposed control measure about the engine currently used to evaluate a diesel fuel's equivalency – a 1990 Detroit Diesel Series 60 engine. It might be worthwhile to determine if a more modern engine would be more representative of the California fleet.
- Based on our companies' state of knowledge on diesel emissions versus fuel composition, we question the basis the South Coast relied upon to support its estimated emissions reductions for its proposal. For instance, do modern diesels respond to aromatics and other fuel properties the way they did in the late eighties when the CARB diesel spec was developed?
- Is the 1990 Detroit Diesel Series 60 engine representative of current and future technology? Data may not be adequate in terms of new diesel engines and their emissions to make significant changes to the current diesel rules. WSPA recommends that the SCAQMD sponsor a CRC program to investigate this issue.

CONCLUSIONS AND RECOMMENDATIONS

WSPA recommends that the ARB review the proposed SCAQMD diesel reformulation / displacement proposal, and perform all relevant analyses such as feasibility, cost-effectiveness, producibility impact, feasibility, distribution system impacts, etc.

12/07/06

CONTROL MEASURE 2007 OFFRD-06, CLEAN MARINE FUEL REQUIREMENTS FOR OCEAN-GOING MARINE VESSELS

This measure would require all Ocean-Going Vessels (OGVs) to use 0.2 percent sulfur content marine distillate fuels beginning in 2008 (0.1 percent sulfur as of 2010). OGVs would be required to switch to the cleaner fuel when traveling within 40 nautical miles of Point Fermin. This proposed control measure is, essentially, linked to 2007 OFFRD-07, Further Emission Reductions from OGVs and Harbor Craft While at Berth, 2007 OFFRD-09, Vessel Speed Reduction, and 2007 OFFRD-10, Further Emission Reductions from OGVs.

DISCUSSION

Background

The regulation of emissions from OGVs has historically been the purview of the Federal government and international standard-setting bodies. The state has the authority to adopt regulations setting marine fuel specifications to be used on marine vessels. The District does not feel that these regulatory bodies have adopted adequate controls on OGVs to help meet the Federal and state ozone and PM air quality standards. Thus, District staff is proposing this measure for implementation by the ports, ARB and/or US-EPA.

Method of Control

All OGVs would be required to use 0.2 percent sulfur fuel in main engines and auxiliary engines beginning in 2008 (0.1 percent sulfur fuel beginning in 2010) when operating within 40 nautical miles of Point Fermin.

Premature consideration of proposed control measures, which are currently technically or logistically infeasible, can result in serious unintended consequences. There must first be a thorough inquiry by the potential regulatory agencies (e.g., the District, ARB, US-EPA, Coast Guard, etc.) to evaluate technical feasibility of, and possible safety issues associated with, these prescribed fuels. Further, there needs to be a comprehensive evaluation of the world-wide availability of low sulfur marine fuels.

The introduction of low sulfur marine fuels (two in this case, 0.1 percent sulfur and 0.2 percent sulfur) could create additional problems for the owners of OGVs. WSPA believes that OGVs will probably need to add additional fuel tank(s) to economically accommodate the use an additional grade of fuel – and, installing additional fuel tanks on California bound vessels will take time. Such changes will be best made when the vessel enters dry dock for its five-year inspections.

As documented in the Port of Los Angeles (POLA) 2005 Starcrest Study, *Evaluation of Low Sulfur Marine Fuel Availability – Pacific Rim*, the International Council on Combustion Engines (CIMAC) identified the following concerns associated with fuel switching:

- Low lubricity. According to CIMAC, there is not enough experience with low sulfur diesel use to address this issue, and more research is needed.
- Delivery-side thermal issues. Marine diesel fuel introduced at ambient engine temperature could cause the fuel pumps to seize if introduced too fast, this could cause sudden loss of propulsion auxiliary power.
- Fuel compatibility. When switching from heavy fuel to distillate fuel, fuel filters could clog and fuel pumps could stick, causing a sudden loss of power.
- Mixing two fuels in a common tank. Filter clogging due to fuel incompatibility is related to the solvent effect of diesel fuel removing deposits from fuel lines. Fleet managers mentioned the filtering system, main engine cylinder oil, fuel pumps and piston liner may stick. Moving parts wear down if exposed to lower sulfur fuels for a long period, and could cause possible malfunction of the propulsion gear if the vessel is not properly equipped with extra tanks and electronically controlled lubricators.

The Starcrest Study further recommended additional research "... for trial use of lower sulfur fuel in marine engines, fuel switching procedures development, and consideration given to other alternatives in lowering emissions."

Estimated Emission Reductions

The District has estimated that full implementation of this rule will result in a reduction of over 96 percent of the estimated SOx emissions, 66 percent of the PM emissions, and 10 percent of the NOx emissions from OGVs by 2014.

WSPA notes that care needs to be taken to ensure that there is no double-counting of potential emissions reductions between proposed control measures 2007 OFFRD-06, -07, -09, and -10, all of which address OGVs.

Cost and Cost-Effectiveness

The District uses an cost estimate provided by Maersk, Inc., that identifies the cost of 0.2 percent sulfur fuel to be about double the cost of the current bunker fuel used by most OGVs. It would be reasonable to expect that the cost of 0.1 percent sulfur fuel will be higher still. However, as is true for all "commodities", the costs of these low-sulfur marine fuels will be a function of fuel supply and demand.

One major deficiency with the proposal is the apparent lack of information regarding the global supply of low-sulfur marine fuels. POLA's Starcrest Study concluded that low sulfur (< 0.2 percent sulfur) residual oil is not available, and low sulfur marine distillate (< 0.2 percent), if available at all, costs more than twice what residual oil costs. Further, two-thirds of the ports of

call, or origination, for vessels serving the POLA are in Asia – however, other than Singapore, the Asian ports are among those least likely to be able to supply marine distillate with < 0.2 percent sulfur content.

Authority

With this proposed control measure, the SCAQMD calls on the Ports, CARB, and US-EPA to take actions to implement the proposed control methods. We suggest that the US Coast Guard be added to the list of implementing agencies.

WSPA and others have questioned whether CARB, and in fact the Ports, have the legal authority to implement such controls. Some think the only legally viable approach is through national or international actions, which are also thought by many to move too slowly.

CONCLUSION AND RECOMMENDATIONS

WSPA strongly believes that mandating fuel switching for OGVs should not be considered until all of the following steps have been taken:

1. Fuel switching is thoroughly reviewed for safety and feasibility.
2. The full costs of converting OGVs to accommodate low sulfur fuels have been determined.
3. There are reasonable expectations, based on a comprehensive study, that low sulfur marine fuels can be supplied globally.
4. The proposed requirements are determined to be cost-effective.

CONTROL MEASURE 2007 OFFRD-07, FURTHER EMISSIONS REDUCTIONS FROM OCEAN-GOING MARINE VESSELS AND HARBOR CRAFT WHILE AT BERTH

This measure would require all Ocean-Going Vessels (OGVs) and harbor craft to use shore power, or other equivalently-clean alternative technology, while at berth. This proposed control measure is, essentially, linked to 2007 OFFRD-06, Clean Marine Fuel Requirements For Ocean-Going Marine Vessels, 2007 OFFRD-09, Vessel Speed Reduction, and 2007 OFFRD-10, Further Emission Reductions from OGVs.

DISCUSSION

Background

OGVs are equipped with auxiliary engines to provide electric power for hotelling operations while at berth (and to provide electrical power and steam while the ship is in operation). Many auxiliary engines use diesel fuel, and the District maintains that these engines produce significant amounts of NOx, SOx, PM and toxic air contaminant emissions during hotelling operations. Currently, there are no requirements for cold ironing for ships berthed in the Ports of Los Angeles or Long Beach. However, the San Pedro Clean Air Action Plan provides for the construction of shore-side power infrastructure at all terminals.

The regulation of emissions from OGVs has historically been the purview of the Federal government and international standard-setting bodies. This measure is proposed for implementation by the Ports, ARB and/or US-EPA.

Method of Control

Virtually all OGVs would be required to use shore-side electrical power while at berth (the use of this type of system is sometimes referred to as "cold-ironing", or, "AMP-ing"). In instances where cold-ironing is not an option due to technical and/or operational reasons, technologies that achieve equivalent emission reductions to cold-ironing could be utilized.

WSPA believes that, with respect to OGVs (i.e., tankers) serving the petroleum industry, there are unique implementation issues that must be recognized and addressed prior to adopting any requirements for shore-side power:

- Unlike container ships and other types of OGVs, tankers use the discharge gas from auxiliary boilers and pumps as a source of inert gas for blanketing cargo tanks. Inert gas blanketing is a critical safety measure necessary to protect against the potential for explosion aboard ship.
- If there were prohibitions on the use of auxiliary engines and/or boilers while at berth, some alternate source of inert gas will have to be provided. Adequate time must be allowed to evaluate potential technologies for generating inert gas.
- Once the unique issues – particularly safety – associated with petroleum tankers are addressed, there may be a better understanding of the time required to implement any

necessary vessel modifications.

- Implementing vessel modifications will be complicated by the fact that many of the tankers, which deliver crude oil and/or intermediate- and finished-products, are neither owned nor operated by WSPA-member companies.
- Tankers have large, high-volume pumps that are used to off-load cargo. The exploration of shore-side power also needs to consider the power that would be required by these pumps.

Estimated Emission Reductions

The District has estimated that at least 60 percent of the hotelling operations can be electrified. For the remaining 40 percent, vessel hotelling would be performed using alternative technologies to reduce emission levels by 90 percent, or greater, beginning in 2014. Overall emission reductions are estimated to be about 75 percent in 2014 and about 84 percent by 2020.

WSPA notes that care needs to be taken to ensure that there is no double-counting of potential emissions reductions between proposed control measures 2007 OFFRD-06, -07, -09, and -10, all of which address OGVs.

Cost and Cost-Effectiveness

Estimates of cost and cost-effectiveness have not been provided. The District states that these estimates will be developed during the CARB rulemaking process, or, as the ports implement the San Pedro Clean Air Action Plan.

Authority

With this proposed control measure, the SCAQMD calls on the Ports, CARB, and US-EPA to take actions to implement the proposed control methods. We suggest that the US Coast Guard be added to the list of implementing agencies.

WSPA and others have questioned whether CARB, and in fact the Ports, have the legal authority to implement such controls. Some think the only legally viable approach is through national or international actions, which are also thought by many to move too slowly.

CONCLUSION AND RECOMMENDATIONS

WSPA submits that petroleum tankers are a truly unique category of OGV, and that there are special considerations that must be accounted for as rules and regulations are developed. WSPA is very concerned that this proposed control measure could require tanker owners to make almost immediate commitments to use processes and technologies that are currently unproven, and that, overall, there may be significant adverse implications for vessel safety.

In addition to the specifics of any potential requirements applicable to petroleum tankers, the proposed implementation timing must recognize the potential complexities of working with independent ship owners.

12/05/06

CONTROL MEASURE 2007 OFFRD-09, VESSEL SPEED REDUCTION

In 2001, the Ports, US-EPA, CARB and SCAQMD entered into an agreement in which ocean going vessels (OGVs) would voluntary reduce speed to 12 knots within a distance of 20 nautical miles (nm) from Point Fermin. SCAQMD states that, for the first half of 2005, the Ports are reporting 71 percent compliance. The Port of Long Beach has a rebate incentive with a goal of 100 percent compliance by mid-2007. The new measure would expand the voluntary speed reduction area for OGVs. This proposed control measure is, essentially, linked to 2007 OFFRD-06, Clean Marine Fuel Requirements for OGVs, 2007 OFFRD-07, Further Emission Reductions from OGVs and Harbor Craft While at Berth, and 2007 OFFRD-10, Further Emission Reductions from OGVs.

DISCUSSION

Method of Control

The proposed Method of Control is to extend the current 12 knot reduced-speed area from within 20 nm from Point Fermin out to 40 nm from Port Fermin in 2008.

Estimated Emissions Reductions

It is estimated that emissions from OGVs, operating in an area extending 40 nm from Point Fermin, would decrease by approximately 50 percent from current levels (down to 19.3 tons per day in 2014, and 25.8 tons per day in 2020).

WSPA notes that care needs to be taken to ensure that there is no double-counting of potential emissions reductions between proposed control measures 2007 OFFRD-06, -07, -09, and -10, all of which address OGVs.

Cost and Cost-Effectiveness

The cost and cost-effectiveness of this proposed measure has not been estimated.

CONCLUSIONS AND RECOMMENDATIONS

There appears to be support of vessel operators for the 20 nm vessel speed reduction area which has been in effect since 2001. Given the emission reductions estimated by the SCAQMD, this measure appears to provide significant emission reductions without any required capital investment for control equipment. However, there may be increased operational costs due to slower travel. Further, there could be concerns with the timely delivery of goods and materials.

This measure is proposed as a voluntary measure, and WSPA strongly recommends that it remain so.

CONTROL MEASURE 2007 OFFRD-10, FURTHER EMISSION REDUCTIONS FROM OCEAN-GOING VESSELS

This proposed control measure calls on the marine ports and the ARB to require 80 percent of the Ocean-Going Vessels (OGVs) entering South Coast marine ports to be equipped with various types of emission controls – although there are serious questions regarding availability, applicability, and effectiveness of the suggested controls. The measure would reportedly achieve a 58 percent fleet-wide average NOx reduction by 2014, and an 80 percent NOx reduction by 2020 (PM reductions associated with these actions have not been estimated).

Other than the mention of two reference documents[14], there is little discussion of how the emission inventories or emission reductions were calculated. This proposed control measure is, essentially, linked to 2007 OFFRD-06, Clean Marine Fuel Requirements for OGVs, 2007 OFFRD-07, Further Emission Reductions from OGVs and Harbor Craft While at Berth, and 2007 OFFRD-09, Vessel Speed Reduction.

DISCUSSION

Method of Control

The control measure lists eight potential retrofit control measures; however, there is a misleading claim that the listed control measures are currently available and applicable to OGVs. In fact, the background discussion states that a technical working group is "... exploring promising retrofit technologies ...", and acknowledges that the control technologies are currently used on stationary source engines. Applications on marine vessel are limited or nonexistent (for example, WSPA is aware of only one vessel, a passenger ferry operating in Europe, that has installed Exhaust Gas Water Treatment).

With respect to the estimated emissions reduction efficiencies, the table listing potential retrofit controls estimates a 20 percent NOx reduction with exhaust gas water treatment (sometimes referred to as sea water scrubbing). This estimated level of efficiency needs to be carefully evaluated and compared to actual, in-use experience. WSPA believes that reductions of twenty might be possible, but will likely pose water quality issues regarding the discharge of the scrubbing water back into the ocean. We suggest that the table be revised to reflect a more realistically achievable, lower NOx reduction.

The San Pedro Plan provides much more detail regarding similar pollution control measures. We assume this proposed AQMP control measure is based in large part on the two referenced documents, but it would be helpful if it included specific references within those reports.

Estimated Emissions Reductions

[14] Two references are cited in this control measure: The ARB Emission Reduction Plan for Ports and Good Movements in California, April 2006, and the draft San Pedro Bay Ports Clean Air Action Plan, June 2006.

The proposed control measure states that OGV NOx emissions will increase, from 29.9 tpd, to 45.5 tpd in 2014 and 58.5 tpd in 2020. Projected PM-2.5 emissions increase, from 2.2 tpd, to and to 3.7 tpd and 5.0 tpd in 2014 and 2020. These numbers appear to agree with those contained in the referenced materials. However, the projections in the control measure need to reflect the fact that the ARB has adopted a control measure for marine auxiliary engines that will significantly reduce SO2 and PM emissions, and provide approximately a five percent NOx reduction starting on January 1, 2007. The ARB rule will also impact some diesel-electric main engines. This would presumably reduce the baseline inventory.

The table of potential retrofit control measures includes estimates of PM reductions for each type of control, but the table that summarizes the total PM-10 and PM-2.5 emission reductions achieved for this control measure shows "Not Determined". Obviously, the PM emission reductions that may result from such controls need to be estimated. Lastly, WSPA notes that care needs to be taken to ensure that there is no double-counting of potential emissions reductions between proposed control measures 2007 OFFRD-06, -07, -09, and -10, all of which address OGVs.

Cost and Cost-Effectiveness

Neither the cost of implementing this draft control measure, nor its cost-effectiveness, have been developed.

Authority

With this proposed control measure, the SCAQMD calls on the Ports, CARB, and US-EPA[15] to take actions to implement the proposed control methods. We suggest that the US Coast Guard be added to the list of implementing agencies.

WSPA and others have questioned whether CARB, and in fact the Ports, have the legal authority to implement such controls. Some think the only legally viable approach is through national or international actions, which are also thought by many to move too slowly. However, since the Ports appear intent on enacting many of their proposed controls as port leases are renewed, it may be that national and international agreements will not come into play.

[15] US-EPA is included as an implementing agency in the summary Table on page IV-B-86, but seems to have been inadvertently excluded from the list under "Implementing Agency" on page IV-B-88.

CONCLUSIONS AND RECOMMNEDATIONS

WSPA offers the following recommendations:

- OFFRD-10 needs to reference and incorporate any new information from the latest San Pedro Plan that was recently released.
- Tables should be updated/revised to indicate the extent to which the control technologies have been applied to marine sources, and the realistic expected emission reductions.
- The District, ARB, the Ports, WSPA, and other interested parties, should get together to determine if there are steps that could be taken with US-EPA, the Coast Guard, and the Federal Government with regard to IMO Annex VI activities.

12/07/06

CONTROL MEASURE 2007 OFFRD-11, EMISSIONS REDUCTIONS FROM AIRCRAFT

It is WSPA's understanding that aircraft are Federal sources. The description of this control measure hints at reducing the aromatic content of jet fuel but does not make a specific recommendation. We believe there are jurisdictional issues (as well as potential safety issues) with the SCAQMD or CARB attempting to modify jet fuel formulations. Determination of jet fuel specifications should be left to ASTM, FAA and ICAO.

11/10/06