

MARAMA REFINERY TSD AND MODEL RULES

SUMMARY OF STAKEHOLDER COMMENTS

(As of November 21, 2006)

MARAMA received several comments on the *Assessment of Control Technology Options for Petroleum Refineries in the Mid-Atlantic Region: Draft Final Technical Support Documentation and Draft Model Rules* for Fluidized Catalytic Cracking Units, Petroleum Refinery Flares, and Enhanced Monitoring of Equipment Leaks at Petroleum Refineries (dated October 13, 2006). A list of commenters is shown in Table 1 with the date and form of all comments received.

Following the list is a summary of comments, grouped by the following common themes or subjects:

- Comments on stakeholder process
- Comments on Consent Decrees
- Comments on RACT issues
- Comments on Model Rules
- Comments on the TSD

TABLE 1 – LIST OF COMMENTS RECEIVED

Abbreviation	Commenter
APIP	Re: MARAMA Draft Model Rules for the Refinery Emission Control Project Letter dated November 10, 2006, from: Rolf Hanson, Executive Director, Associated Petroleum Industries of PA
BAYWAY	Submission of Comments on MARAMA Draft Final Technical Support Document and Model Rules Letter dated November 10, 2006, from: Douglas J. LaFayette, Senior Environmental Engineer, ConocoPhillips Bayway Refinery
CARCO	Re: MARAMA Draft Model Rules for the Refinery Emission Control Project Letter dated November 9, 2006, from: Janet Ferris, Senior Environmental Advisor, CITGO Asphalt Refining Company
CCNJ	Re: MARAMA Draft Model Rules for the Refinery Emission Control Project Chemistry Council of New Jersey Letter dated November 10, 2006, from: Anthony Russo, Director of Regulatory Affairs, CCNJ
CHEVRON	Subject: Comments on the Assessment of Control Options for Petroleum Refineries in the Mid-Atlantic Region – Draft Final Technical Support Document and Model Rules Letter dated November 9, 2006, from: Kevin McMahon

Abbreviation	Commenter
ERM	Re: MARAMA Draft Model Rules for the Refinery Emission Control Project Letter dated November 10, 2006, from: William M. Hanna III, P.E., Principal, ERM on behalf of the Mid-Atlantic Refinery Group: Sunoco {Philadelphia, Marcus Hook, Eagle Point}, ConocoPhillips {Bayway, Trainer}, Valero {Paulsboro, Delaware City}, Amerada Hess {Port Reading}, CITGO Asphalt Refining {Paulsboro}
GIANT	Re: Comments on MARAMA Draft Assessment of Control Technology Options for Petroleum Refineries and Model Rules Letter dated November 10, 2006, from: David C. Pavlich, Manager, Health, Safety and Environment
HESS	Re: MARAMA Draft Model Rules for Refinery Emissions Letter dated November 10, 2006, from: William Bumpers, Council for Hess Corporation
NJBIA	Re: MARAMA Draft Model Rules for the Refinery Emission Control Project Letter dated November 10, 2006, from: David Brogan, Vice President, Environmental Policy
NJPC	Re: MARAMA Draft Model Rules for the Refinery Emission Control Project Letter dated November 10, 2006, from: John A. Maxwell, Associate Director, New Jersey Petroleum Council
SUNOCO	Re: MARAMA Draft Model Rules for the Refinery Emission Control Project Letter dated November 10, 2006, from: Luis A. Comas, Sunoco Environmental Services, Sunoco, Inc.
TRAINER	Re: Response to MARAMA rules ConocoPhillips Trainer Refinery Letter dated November 8, 2006, from: Milind Bhatte, PhD, Environmental Lead
VALERO	Re: Comments of Valero Refinery Company-New Jersey and The Premcor Refining Group Inc. on draft Model Rules and draft Technical Support Documentation published in conjunction with the MARAMA Refinery Emissions Control Project Undated Letter from: Sean Horne, Director, Environmental, Health, and Safety; Valero Paulsboro Refinery; and Patrick Covert, Director, Environmental, Health, and Safety; Valero Delaware City Refinery

COMMENTS REGARDING STAKEHOLDER PROCESS

1. Providing 21 days for comments is not enough time for a complete and thorough review of the TSD and model rules. Stakeholders reserve the opportunity to provide additional comments at a later date.

Commenters: APIP, BAYWAY, CARCO, CCNJ, ERM, GIANT, NJBIA, NJPC, SUNOCO, VALERO

2. There was an absence of any involvement from the regulated stakeholders and no opportunity to provide input prior to the comment period. Early stakeholder involvement could have avoided errors and incorrect assumptions.

Commenters: APIP, CCNJ, ERM, HESS, NJBIA, SUNOCO, VALERO

3. MARAMA and states must actively meet and work with the regulated community for a period of at least several months.

Commenters: APIP, BAYWAY, CARCO, CCNJ, ERM, HESS, NJBIA

4. Deferring open stakeholder involvement until the State-level rulemaking process that will codify the model rules is not an appropriate resolution.

Commenters: ERM, NJBIA

5. Requesting additional time until December 31, 2006, to provide comments.

Commenters: TRAINER

COMMENTS REGARDING CONSENT DECREES

6. It is not appropriate to apply requirements from individually negotiated Consent Decrees via model rules across the board to all facilities to establish new RACT limits.

Commenters: CARCO, ERM, HESS

7. The MARAMA model rules amount to an improper attempt to employ regulatory authority to unilaterally change the terms of negotiated refinery consent decrees.

Commenters: VALERO

8. Facilities need time to implement and complete action plans based on individual Consent Decrees. After the action plans have been completed, data should be collected and evaluated to determine which new rules are needed.

Commenters: CARCO

9. Facilities with existing Consent Decrees should be exempted from these new rules

Commenters: CARCO

10. Pursuant to the CD requirements, Trainer Refinery has installed controls on the FCCU and is complying with other requirements associated with flares, LDAR, and

wastewater. The actual NO_x reductions and emission limits are to be established through a site-specific optimization study. It is unlikely that complying with the FCCU model rule would be cost-effective since it would likely involve installing new and additional controls soon after installing controls for the consent decree.

Commenters: TRAINER

COMMENTS REGARDING RACT

11. RACT requires source-specific determinations and RACT limits are not susceptible to generalized application. The use of model rules is inappropriate for setting RACT. The model rules ignore the inherent variability of similar processes across refineries.

Commenters: ERM, HESS, VALERO

12. The model rules are not consistent with RACT standards and other relevant regulations. MARAMA is attempting to recast the BACT/LAER level of control appropriate for new sources as RACT for existing sources.

Commenters: VALERO

13. There is a lack of an air quality basis for model rule implementation in Virginia and a lack of a rationale for implementing more stringent, state-specific rules.

Commenters: GIANT

14. The model rules and TSD tend to favor technologies established as BACT or LAER. There is no consideration of lesser technologies that might be more representative of RACT for un-modified existing equipment. The TSD is an ineffective tool unless the states choose to have RACT rules equivalent to a BACT or LAER control level.

Commenters: ERM

15. Rules and reductions for refineries should be compared to rules and emissions reductions from other industrial and non-industrial sources to ensure that these refinery reductions are truly cost-effective.

Commenters: SUNOCO

TECHNICAL COMMENTS ON MODEL RULES

16. The model rules provide no allowance for emission trading as a compliance option.

Commenters: ERM

17. General comment that the rules seem overly burdensome in their approach to reporting and compliance demonstrations. Resources expended in preparing and

reviewing reports do not improve air quality and these resources would be better spent elsewhere in reducing emissions.

Commenters: SUNOCO

18. EPA is considering changes to rules including NSPS Subpart J. Request flexibility so that any MARAMA rules that overlap Consent Decree or modified Subpart J or other federal requirements can be handled in a simplified manner.

Commenters: SUNOCO

Comments on FCCU Model Rule

19. A model rule is inappropriate for establishing RACT standards for FCCUs. RACT must account for an individual refinery's system design, fuel feedstock, current emission control level, and emission rates. Proposed NO_x standard cannot be viewed as RACT for all facilities. Provided data indicating it would cost \$33,600 per ton to install SCR at Port Reading to achieve model rule limits.

Commenters: HESS

20. MARAMA has not identified a sufficient basis for the feasibility and effectiveness of emission reduction controls at FCCUs or FCUs. The control standards prescribed by the consent decrees were in many cases, and still remain, experimental and unproven.

Commenters: VALERO

21. Consent Decree requirements focused on site-specific solutions, recognizing a one-solution fits all approach would fail. Parties recognized that various control technologies were in differing stages of availability and performance guarantees.

Commenters: ERM

22. Why a CO limit? Is CO being considered as a precursor to ozone for fine particulate?

Commenters: ERM

23. No two FCC units are the same. Factors affecting operation and performance include quality of feed material, operating conditions, quality and diversity of products, physical location, and permit limitations. EPA and states recognized these factors in consent decrees which did not impose the same emission limitations to all the affected FCC units.

Commenters: SUNOCO

24. Given the fact that most of the FCC units in the region are subject to consent decrees and/or their emissions are properly controlled by federal and state regulations, Sunoco questions the need for the model rule since it will not serve any practical purpose other than imposing more stringent limits than the consent decrees.

Commenters: SUNOCO

Comments of Flare Model Rule

25. SCAQMD, BAAQMD, and TCEQ worked extensively with regulated community to refine the emission inventory for flares. Such data does not exist in the MARAMA region and adoption of CA/TX rules for flares is premature.

Commenters: CCNJ, ERM, NJBIA, NJPC,

26. No justification for use of SCAQMD rule instead of other agency rules. SCAQMD rule could be considered BACT/LAER, not RACT.

Commenters: CHEVRON

27. Rules should provide flexibility for smaller facilities or asphalt refineries.

Commenters: CARCO

28. Yorktown Refinery currently operates with excess fuel gas and has no practical outlet for recovered fuel gas, resulting in flaring. In 2008, a new “clean fuels” unit starts operation and the refinery is expected to be close to fuel gas balance, which will reduce flaring emissions versus 2002 levels without the installation of flare gas recovery systems.

Commenters: GIANT

29. There has never been a consistent methodology used by industry to estimate actual emissions from either routinely generated refinery fuel gas or flaring events due to malfunctions or upsets. Flare emission data is inaccurate and significantly overstated. MARAMA should initiate a stakeholder process to develop a flare emission estimation methodology to verify that refinery flares are a significant contributor of NO_x, VOC, and SO₂ emissions.

Commenters: HESS

30. It may be cost-effective to install flare gas recovery systems where large quantities of continuous or routinely generated fuel gas, but it would not be cost-effective at a smaller refinery where the flaring results from infrequent process upsets. MARAMA should establish a size/emission threshold for application of a refinery flare rule.

Commenters: HESS

31. The model rule flare requirements are entirely new to refineries in the MARAMA region, are costly and burdensome, and go beyond already committed Consent Decree requirements to minimize flaring events.

Commenters: ERM

32. Sunoco is installing a flare gas recovery system in one of its refineries with a cost effectiveness value of \$100,000 to \$1 million for VOC and Sox respectively.

Commenters: SUNOCO

33. Given the fact that most of the flares in the region are subject to consent decrees and/or their emissions are properly controlled by federal and state regulations, Sunoco questions the need for the model rule since it will not serve any practical purpose other than imposing more stringent limits than the consent decrees.

Commenters: SUNOCO

Comments of Equipment Leaks Model Rule

34. EPA is not supporting a first attempt to repair a valve at 200ppm and the model rule should not include this requirement (Nov. 7, 2006 Federal Register with proposed revisions to equipment leak performance standards). Data not available to demonstrate that lowering the first attempt to repair threshold decreases leak rates.

Commenters: CARCO, CHEVRON, ERM, HESS

35. Giant Provided data showing essentially no incremental benefit from tightening leak limits beyond requirements already in place, resulting in very high cost-effectiveness estimates.

Commenters: GIANT

36. Rules should provide flexibility for alternative monitoring plans at smaller facilities.

Commenters: CARCO

37. Why is MARAMA duplicating an effort that more appropriately falls in the Federal realm? The Federal LDAR program has historically formed the basis of state and regional LDAR programs.

Commenters: ERM

38. Only a small percent of leaking components contribute a majority of emissions. EPA is in the process of approving alternate LDAR requirements that would allow a facility to use other technologies (such as SMART LDAR) that would better target the big leakers rather than focus on small leaks.

Commenters: SUNOCO

39. The CD requires each facility to perform a study that would determine the effectiveness of a 200 ppm leak definition. Recommend evaluating the results of the individual refinery study rather than establish a revised leak definition that would not be cost-effective.

Commenters: SUNOCO

40. It makes no sense to write a model rule that will affect only 4 of the 14 facilities (those without consent decree requirements). State resources could be put to a better use.

Commenters: BAYWAY

TECHNICAL COMMENTS ON TSD

Comments on Emissions Inventory

41. Emission inventory needs refinement; stakeholders have data to refine the inventory. MARAMA must work with industry to refine the inventory and answer general and specific questions.

Commenters: APIP, CCNJ, CHEVRON, ERM, NJBIA, VALERO

42. Projected growth in emissions for 2009 is unrealistic and quite high. No reason to project that production will increase without a capital project that will require NSR. Industry needs a better explanation of why emissions are projected to increase so dramatically.

Commenters: BAYWAY, CHEVRON, ERM, GIANT

43. Inventory does not correctly characterize impacts of Consent Decrees. Specific data given for boilers/process heaters and flaring.

Commenters: GIANT

44. Inventory ignores substantial emission reductions that will result from Consent Decree requirements for the years 2010 through 2012.

Commenters: BAYWAY, ERM

45. More recent emission inventories, not just 2002 inventory, should be used as revisions have been made to due to changes in methodologies and installation of control equipment.

Commenters: CHEVRON, ERM

46. Use of 2002 as a baseline year is not representative for Bayway Refinery. A major maintenance turnaround was conducted on the FCCU and TGPU in 2002. Clearly the 2002 emissions are anomalous.

Commenters: BAYWAY

47. It is apparent that the methods used to calculate flaring emissions are not consistent across the industry. The disparity in numbers indicates that emission reporting methodology and philosophy are important factors to consider when establishing a baseline emission estimate.

Commenters: ERM

48. Consent Decrees require some action to reduce flaring events but no reductions for flares are accounted for in 2009 considering Consent Decree requirements. Also, refineries must conduct a root cause analysis for each acid gas flaring event or hydrocarbon flaring event that would also reduce emissions in 2009.

Commenters: ERM

49. There is no supporting documentation for a 50% reduction for an enhanced LDAR program.

Commenters: ERM

50. Emissions reductions from enhanced LDAR depend on the existing leak definition. Some refineries currently have a 1,000 ppm definition while others have a 10,000 ppm definition. MARAMA should reconsider its emission reduction estimates in light of leak definitions that vary by state and perhaps by Consent Decree.

Commenters: ERM

51. Regulators and industry acknowledge that emission estimating methodologies for equipment leaks yield approximations that span orders of magnitude for the same set of components.

Commenters: ERM

52. Bayway Refinery pointed out several instances where emission estimates changed or incorrect assumptions were made regarding anticipated emission reductions.

Commenters: BAYWAY

Comments on Cost-Effectiveness

53. Cost-effectiveness from other parts of the country should not be used in the mid-Atlantic because the Northeast has some of the highest construction costs in the country.

Commenters: APIP, BAYWAY, CCNJ, ERM, NJBIA, NJPC

54. Emission reductions and cost-effectiveness are very site-specific and should not be applied generically.

Commenters: APIP, CCNJ, ERM, NJBIA, NJPC

55. Many sources are already controlled. Implementation of additional requirements would not result in additional cost-effective emission reductions. Cost-effectiveness should be calculated on the incremental emission reduction, not the emission reduction from uncontrolled levels.

Commenters: GIANT

56. Cost data presented in the TSD are not representative of the project costs of the technologies at issue. Neither vendors nor contractors have significant experience with the design and construction of the sophisticated control systems.

Commenters: VALERO

57. Cost-effectiveness for flaring is highly dependent on emission estimates from pre- and post-implementation of control. Given the uncertainty of accurately estimating emissions from flares and the control effectiveness of the model rule, cost-effectiveness varies widely from facility to facility and must be determined on a case-by-case basis.

Commenters: ERM

58. Cost-effectiveness for FCCUs in the TSD does not reflect recent experience of industry. Valero Paulsboro FCCU SO₂ controls reported to be \$27,000 per ton; Sunoco \$5,600 to \$10,000 per ton. Recent BACT NO_x controls in New Jersey were over \$23,000 per ton; Sunoco SCR controls from \$23,500 to \$47,000 per ton.

Commenters: ERM

59. The cost-effectiveness data presented in the TSD are not consistent with values experienced by Sunoco at its facilities. Cost of installing control technologies to comply with consent decree requirements varies significantly from facility to facility. Cost-effectiveness determinations must be site-specific and can not and should not be made and applied generically across the board to all emission sources subject to regulation.

Commenters: SUNOCO