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HCH-025-03

**Via Courier**

September 22, 2003

Mr. William Norton, Executive Officer/Air Pollution Control Officer  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, CA 94109

Attn: Mr. Douglas W. Hall  
Permit Services Division

Re: Valero Refining Co. – California  
Benicia Clean Fuels Refinery (Plant No. B2626)  
Comments on Revised Draft Title V Permit

Dear Mr. Hall:

Valero Refining Co. – California (“Valero”) hereby submits for the Bay Area Air Quality Management District’s review and consideration its comments on the Draft Major Facility Review (“Title V”) Permit for the Valero’s Fuels Refinery (Application No. 16423, Plant No. B2626) located in Benicia, California. Valero’s comments are in response to our review of the Revised Draft Permit which was released by the District on August 5, 2003, for public review. Valero understands that the public comment period, which includes a 7-day extension granted by the District for additional public review closes September 22, 2003.

Valero appreciates the District’s earlier consideration of written comments on the June 6, 2002 draft permit which Valero submitted on September 6, 2002. Valero has conducted a similar, comprehensive review of the Revised Draft Title V Permit and is submitting additional comments to further improve the quality and accuracy of the document. To facilitate the District’s review and analysis, Valero’s comments on the revised draft permit are organized into 6 sections (Attachments A through F) corresponding to the Sections in the draft Title V permit. In addition, Attachments A through E include subsections to support the proposed language changes or to further clarify Valero’s position. Finally, Valero has reviewed the Statement of Basis (SOB) for the draft permit and included comments to the SOB in Attachment G.

The attachments are organized as “rationale tables” which provide a line-by-line explanation of each proposed change. Many of the proposed changes are administrative in nature including corrections to typographical errors, corrections to ensure consistency of regulatory requirements between Section IV (Applicable Requirements), Section VI (Permit Conditions), Section VII (Monitoring Requirements) and Section IX (Permit Shield).

Based on District guidance, Valero has separated comments on the revised draft permit into two major categories:

- 1) “*Mistakes*” such as proposed requirements which Valero believes are not applicable, which must be corrected to improve the accuracy of the permit. “*Mistakes*” are identified as “Priority A” items in the attachments. Most of Valero’s comments are categorized as “*Mistakes*”; and
- 2) “*Issues/Concerns*” such as applicable requirements in which the District and Valero disagree on necessity of monitoring frequency, typographical errors, etc. “*Issues/Concerns*” are identified as “Priority B” items in the attachments.

The District has stated that it will correct all “*Mistakes*” in the Revised Draft Title V Permit prior to issuance, but will be unable to resolve “*Issues/Concerns*” due to resource and time constraints.

The following Sections A-E discuss the most important “*Mistakes*” which Valero believes must be corrected prior to permit issuance. Where appropriate, we have also structured our comments to reflect: 1) the current proposal, 2) suggested change(s), and 3) rationale for the change(s).

#### **A. Missing Permits:**

The Revised Draft Title V Permit is missing permits for three important projects which are currently under construction and scheduled for startup in the next few months. Since these projects are important for maintaining clean fuels production without MTBE and improving the reliability of an abatement device, it is imperative that these permits be included in the final Title V permit. These permits include:

- 1) Application No. 2035 MTBE Phaseout Project
- 2) Application No. 3782 Alkylolation Unit Expansion
- 3) Application No. 8028 Spare Tail Gas Hydrogenation Unit

It is important that any throughput limits and permit conditions for these projects be incorporated into the Title V permit, especially for existing sources.

In addition, the District has issued the Authority to Construct for Application No. 5846, the Valero Improvement Project (VIP). The permit includes not only new and modified sources, but also existing sources which can increase throughputs with little or no modifications. Most of the facilities in the Project will be constructed after the Title V permit is issued. However, the Title V permit must be amended as soon as practicable after

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issuance to ensure that existing facilities which require little or no modifications can increase throughputs as allowed by VIP, so as not to delay the benefits of the project.

### **B. Missing Regulations:**

Valero's Title V permit does not include BAAQMD Regulation 12 Rule 11 (Flare Monitoring at Petroleum Refineries), which was adopted on June 4, 2003. The Regulation improves estimates of flare emissions by requiring accurate flow meters on the vent gas to the flares, sample systems or continuous analyzers to determine flare gas composition, and video monitoring enhancements. The Rule applies to S-16 (acid gas flare), S-18 (south flare), and S-19 (north flare), which handle process gases from refinery equipment. However, the Rule does not apply to S-17 (butane tank flare), since this flare serves as a backup abatement device for an LPG storage tank (Regulation 12-11-110 Exemption: Organic Liquid Storage and Distribution). (2)

### **C. Incorrect Permit Conditions:**

#### C.1 Flare Condition # 20806 Parts 1, and 2:

District Proposed Conditions:

1. The Owner/Operator shall inspect the Flares, S-16, S-17, S-18, S-19 as soon as any intentional or unintentional release of vent gas is detected which lasts greater than 15 consecutive minutes using flow meters for S-16, S-18, and S-19, but no later than one hour from the flaring event to check for visible emissions. If any visible emissions are detected, the Owner/Operator shall take corrective action within one hour upon detection of visible emissions, and check for visible emissions after corrective action has been taken. [Basis: Regulation 2-6-409.2]
  2. The Owner/Operator shall keep records of all flaring events lasting longer than 15 consecutive minutes using gas flow meters for S-16, S-18, and S-19, the person performing the visible emissions check, all corrective action taken at S-16, S-17, S-18, S-19, and all instances in which Owner/Operator was unable to correct visible emissions problems. The records shall be retained for at least five (5) years and shall be made available to District personnel upon request. [Basis: 2-6-409.2]
- (3)

Valero Suggested Conditions:

1. For S-16, S-18, and S-19 flares, assume no visible emissions if the flow rate to each flare does not continuously exceed 330 SCFM for 15 consecutive minutes.
2. For S-16, S-18, and S-19 flares, if the flow rate to each flare continuously exceeds 330 SCFM for 15 consecutive minutes, but the Operator can determine no visible emissions using video monitoring, no further monitoring is required.
3. For S-16, S-18, and S-19 flares, if further monitoring is required, conduct a visual inspection. Visual inspections shall be conducted every 30 minutes until a) the flaring event continues in a steady and stable state when it can be reasonably assured that

smoking will not occur if it had not been previously observed, or b) video monitoring determines no visible emissions.

4. For S-16, S-18, and S-19 flares, if visual inspection detects visible smoke emissions (excluding condensed water vapor) in excess of 5 continuous minutes, visible emissions shall constitute an instance of non-compliance.
5. For S-16, S-18, and S-19 flares, visible emissions inspections shall be documented in a log, retained for at least five (5) years from the date of the flaring event, and made available to District personnel upon request.

**Rationale:**

Regulation 12 Rule 11 (Flare Monitoring at Petroleum Refineries) requires accurate vent gas flow meters and recorders on S-16, S-18, and S-19 emergency relief flares, as well as video monitoring and recording equipment on each flare. With enhanced surveillance tools available on these flares to detect and record vent gas flow and visible emissions, the proposed permit conditions are redundant with the requirements in Regulation 12 Rule 11, and therefore should be deleted.

The suggested permit conditions provide more clarity with a step-by-step procedure for detecting visible emissions, utilizing the accurate flow meters and video monitoring surveillance tools required by Regulation 12 Rule 11.

S-17 (butane flare) is exempt from Regulation 12 Rule 11 (Section 12-11-110), because this emergency relief flare serves as a backup abatement device to the vapor recovery compressor system for the refrigerated butane tank. Since the butane tank stores LPG (i.e., refrigerated liquid butane) and the butane flare has a low potential for visible emissions when combusting clean LPG, the butane flare does not warrant additional monitoring for visible emissions.

**C.2 Flare Condition # 20806 Part 3:**

**District Proposed Condition:**

3. The Owner/Operator shall use flares S-16, S-17, S-18, S-19 only to burn process upset gases or fuel gas that is released to it as a result of relief valve leakage or other emergency malfunctions [Basis: 40 CFR 60.104(a)(1)]

**Valero Suggested Condition:**

Delete permit condition.

**Rationale:**

Valero believes the permit condition should be deleted for several reasons. First, S-16 (acid gas flare), S-17 (butane tank flare), and S-18 (south flare) are flares which were constructed prior to June 11, 1973, the effective date for “fuel gas combustion devices” (including flares) subject to 40 CFR Part 60 (NSPS) Subpart J. Therefore, the three flares

are not subject to NSPS Subpart J, including the SO<sub>2</sub> emission standards set forth in 40 CFR 60.104(a)(1).

Second, S-19 (north flare) was constructed after June 11, 1973, and thus is subject to NSPS Subpart J as a “fuel gas combustion device”, including the SO<sub>2</sub> emission standards set forth in 40 CFR 60.104(a)(1). Since this NSPS Subpart J provision is already listed as an applicable requirement for S-19 in Table IV – A9, the proposed permit condition is redundant and should be deleted.

Finally, Valero believes the language of the proposed condition limits equipment operation by inaccurately representing the full applicable requirement in Subpart J. The full text of 40 CFR 60.104(a)(10) pertains to SO<sub>2</sub> emission standards as follows:

*“(a) No owner or operator subject to the provisions of this subpart shall: (1) Burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H<sub>2</sub>S) in excess of 230 mg/dscm (0.10 gr/dscf). The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this subparagraph.”*

Valero believes the District’s proposed condition excessively regulates or limits the use of flares, whereas the intent of NSPS Subpart J is to limit SO<sub>2</sub> emissions from flares except during particular situations such as flaring process upset gases (including gases generated during startups, shutdowns, and malfunctions), etc.

#### C.3 Flare Condition # 20806 Part 4:

District Proposed Condition:

4. The Owner/Operator shall record in a District-approved log every flaring event. This log shall be made available to the District upon request and keep for a period of 5 years from the date of record. [Basis 40 CFR 60.104(a)(1)]

Valero Suggested Condition:

Delete permit condition.

Rationale:

As discussed in the Rationale for Condition # 20806 Part 3, S-16, S-17, and S-18 emergency relief flares are not subject to NSPS Subpart J and therefore are not subject to any recordkeeping requirements required by Subpart J. However, S-19 (north flare) is subject to NSPS Subpart J and all of that subpart’s applicable requirements, including recordkeeping, are already listed in Table IV-A9 for S-19. Since BAAQMD Regulation 12 Rule 11 (Flare Monitoring at Petroleum Refineries) requires a 5-year retention period for records, the proposed permit condition is redundant and should be deleted.

C.4 Grandfathered Source Condition:

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District Proposed Condition:

(I. Standard Conditions, J. – Miscellaneous Conditions)

“The maximum capacity for each source as shown in Table II-A is the maximum allowable capacity. Exceedance of the maximum allowable capacity for any source is a violation of Regulation 2, Rule 1, Section 301. (Regulation 2-1-301)”

Valero Suggested Condition:

“For grandfathered sources, the throughput limits as shown in Table II-A are based upon District records at the time of the MFR permit issuance. The facility must report any exceedance of these limits within 10 days. This reporting requirement is intended to facilitate a determination of whether a modification has occurred as defined in Regulation 2-1-234.3. The throughput limits for grandfathered sources are for reporting purposes only. Exceedance of this limit does not establish a presumption that a modification has occurred, nor does compliance with the limit establish a presumption that a modification has not occurred. The throughput limits for grandfathered sources are not federally enforceable.”

Rationale:

The proposed permit condition indicates that an exceedance of the maximum allowable capacity for a grandfathered source constitutes a violation. Based on the proposed permit condition, Valero would need to consider these grandfathered limits as not-to-exceed limits in order to avoid receiving a violation. This condition conflicts with the intent of the throughput limits, which is for reporting purposes only to evaluate if a modification has occurred, as discussed in the Statement of Basis and in comments provided by BAAQMD legal staff. The suggested language is also consistent with proposed conditions in the Revised Draft Title V Permits for the other Bay Area petroleum refineries.

C.5 Startup/Shutdown Notification:

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District Proposed Condition:

(Table IV – Refinery Generally Applicable Condition, and Condition #19466 Part 4):

“The Owner/Operator shall notify the District no less than three calendar days in advance of the planned startup or shutdown of any ~~source~~ process unit, and no later than 24 hours following the unscheduled startup or shutdown of a process unit. The notification shall be faxed to the Director of Compliance and Enforcement [Basis: Regulation 2-1-403]”

Valero Suggested Condition:

“The Owner/Operator shall notify the District no less than three calendar days in advance of the planned startup or shutdown of any ~~source~~ process unit, and no later than 24 hours following the unscheduled startup or shutdown of a process unit. The notification shall be faxed to the Director of Compliance and Enforcement. *This requirement is not federally enforceable.* [Basis: Regulation 2-1-403]”

Rationale:

The proposed language in Table IV is acceptable, with the clarification that the permit condition is not federally enforceable (*in italics*). For consistency, the same language should be incorporated into Section VI Condition # 19466, Part 4, which currently includes the original language without the proposed revisions (without strikethrough, underline, or italics). (6)

C.6 NOx Permit Conditions:

Background:

The Revised Draft Title V Permit for the Valero Benicia Asphalt Plant (Application No. 17468, Plant No. B3193) includes proposed permit conditions (Condition #20617) which implement an “equivalent verification system” for monitoring NOx, CO, and O<sub>2</sub> levels on affected heaters and boilers. The “equivalent verification systems” can be implemented in lieu of CEM’s on heaters and boilers to comply with the monitoring requirements set forth in BAAQMD Regulation 9 Rule 10 Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries, with an overall objective of meeting a refinery-wide operating-day average NOx limit of 0.033 lbs/MMBTU fired, excluding CO boilers. (7)

Currently, the Revised Draft Title V Permit for the Valero Benicia Refinery (Plant No. B2626) does not include proposed permit conditions for implementing an “equivalent verification system” for monitoring NOx, CO, and O<sub>2</sub> levels on affected heaters and boilers, such as the proposed conditions in the Revised Draft Title V Permit for the Asphalt Plant. Based on the common ownership of both the Asphalt Plant and the adjacent Refinery, Valero expects that the District will impose similar requirements in the Refinery Title V permit prior to issuance. Hence, Valero is providing comments now in anticipation of these proposed permit conditions.

Valero understands that the “equivalent verification system” (EVS) is intended to provide an economic alternative to installing CEM’s for monitoring NOx, CO, and O<sub>2</sub> levels on sources greater than 25 MMBTU/HR subject to Regulation 9 Rule 10. The concept of the EVS is to perform a series of source tests for NOx and CO over an operating range or envelope of fired duty and O<sub>2</sub> levels (“NOx box”) for each combustion device and to determine the highest emission factors for NOx and CO. These highest emission factors for the full range of operation, in turn, are used to determine compliance with the refinery-wide operating-day average NOx emission limit. Operation of the combustion device within the “NOx box” provides reasonable assurance that the NOx emission factor selected for each combustion device will not be exceeded. Source tests for NOx and CO are performed semi-annually to confirm the emission factors are still appropriate for the operating range. Source tests can also be performed to “grow” the “NOx box” to reflect current operating conditions for the combustion device.

**Problem:**

The EVS is intended to provide an economic alternative to a CEM. However, the proposed permit conditions for the EVS overly restrict operation of an affected combustion device compared to a CEM. The EVS requires diligent operation within the “NOx box”. Operation outside of but within 20% of the original “NOx box” triggers a source test to demonstrate that NOx emissions are at or below NOx emissions while operating within the “NOx box.” Exceedance of the NOx emission factor outside of but within 20% of the original “NOx box” constitutes an automatic violation of the EVS, even though use of the higher emission factor may not result in violation of the refinery-wide operating day average NOx limit. In addition, operation of the combustion device outside of the 20% allowance for the “NOx box” also constitutes a violation, irrespective of NOx emissions. Valero believes these proposed conditions are particularly unnecessary, because Valero uses an Alternative Compliance Plan (ACP) to maintain compliance with the refinery-wide daily average NOx limit in Regulation 9 Rule 10. The ACP utilizes Interchangeable Emission Reduction Credits (IERC’s) of NOx emissions generated by over-controlling CO furnaces to achieve the refinery-wide NOx limit.

Valero believes the focus of the proposed conditions has changed from compliance with the refinery-wide NOx limit (original purpose of Regulation 9 Rule 10) to compliance with operation within the NOx box, even though operation outside of the NOx box may have no impact on overall NOx emissions or the ability to meet the refinery-wide NOx emission cap. The proposed permit conditions will result in increased NOV’s based on an operating technicality, with no corresponding environmental benefit. The focus of the proposed permit conditions reduces operating flexibility and is unnecessary, especially when unforeseen conditions require operation outside of the NOx box, such as during upset conditions or reduced firing conditions where source tests normally would not be performed to establish the NOx box operating envelope

**Proposed Solution:**

Valero suggests that the District consider development of new permit conditions for the EVS to increase operating flexibility and reduce enforcement concerns, while providing reasonable assurance that emission factors for the expected range of operation are valid for determining compliance with the refinery-wide NOx limit. In general, use of the NOx box restricts operation of the combustion device and hence NOx emissions more than use of a CEM, which permits an unrestricted operation as long as the refinery-wide NOx limit is met. Therefore, it is beneficial for both the District and the refineries to develop permit conditions for the NOx box which encourage use of the NOx box, reduce the potential for enforcement action, increase operating flexibility, and still provide assurance that NOx emissions from these combustion devices are adequately controlled.

Since the Valero Asphalt Plant and Refinery are under common ownership and are both subject to Regulation 9 Rule 10, it is imperative that any changes to the proposed permit conditions which implement the EVS and NOx box in the Refinery’s Title V permit also be consistently implemented in the Asphalt Plant’s Title V permit.

**D. New Monitoring Requirements:**

Valero's Revised Draft Title V Permit includes proposed permit conditions which include new monitoring requirements for existing applicable requirements. According to the District, the new monitoring requirements are necessary to demonstrate compliance with existing applicable requirements which currently do not have specific monitoring requirements.

The new monitoring requirements, primarily source tests, are included in the following proposed permit conditions: Condition # 16027 Part 22; and Condition # 19466. These new source test requirements may require new facilities for accessibility and testing. Accordingly, Valero requests that the District provide a future effective date of 5 months (3 months to install facilities, plus 2 months to source test) in the proposed new monitoring conditions for existing requirements. (8)

Valero is especially concerned about proposed Condition # 19466 Part 3 which requires monthly monitoring of visible emissions from several types of sources to determine compliance with Regulation 6-301 (Ringlemann No.1). Currently, Valero does not have a qualified or certified observer available on-site to determine plume opacity. In order to comply with the proposed permit condition, Valero would need to have several employees become qualified observers for plume opacity to provide round-the-clock coverage and have them re-certified every six months, or hire several full-time contractors who are qualified observers. Due to the complex nature and human element involved in demonstrating compliance with a Ringlemann No.1 visible emissions standard, Valero suggests that the proposed condition be deleted, or revised to include other methods or concepts for determining visible emissions, such as those under consideration for determining visible emissions from flares. (9)

**E. Permit to Operate / Title V Permit Inconsistencies:**

Recently, Valero received its annual Permit to Operate (PTO) the Refinery, which expires on August 1, 2004. Valero reviewed the new PTO to determine any problems and/or inconsistencies with the Revised Draft Title V Permit and has identified several important issues that need to be addressed as soon as practical:

The new PTO includes two new conditions, Condition # 19329 (NOx alternative compliance plan) and Condition # 19466 (additional monitoring requirements), which are proposed permit conditions in Valero's Revised Draft Title V Permit. Valero believes the District has prematurely lifted these proposed permit conditions from the Revised Draft Title V Permit and inserted them into our new PTO. Therefore, Valero requests that the District delete these permit conditions from the PTO until the proposed conditions, which are currently under discussion, are finalized in the Title V permit. (10)

Condition # 14318 (for S-23 Process Oil Furnace) has been deleted from the new PTO, whereas the permit conditions are still in the Revised Draft Title V Permit. These valid conditions should be added back into the new PTO, consistent with prior annual PTO's. (11)

Condition # 19177 (for S-1030/1031 Cogeneration) in the new PTO includes only definitions and no permit conditions, whereas the Revised Draft Title V Permit correctly includes both Cogen definitions and conditions. The Cogen permit conditions should be added into the new PTO. (12)

Finally, Condition # 18794 (for S-1004 Naphtha Reformer Unit) is included the new PTO, but is missing from and should also be added into the Revised Draft Title V Permit. (13)

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Based on the number of mistakes and concerns which Valero has identified in the Revised Draft Permit, as shown in the attachments and discussed above, on September 19, 2003, Valero submitted to U.S. EPA – Region IX a letter requesting that EPA object to the “proposed” permit in order to allow the District more time to correct mistakes and resolve concerns before issuing the final Title V permit.

Valero appreciates the opportunity to review and comment on the Revised Draft Title V Permit for the Benicia Refinery for the mutual benefit of the public, government agencies and Valero. If you have any questions on Valero’s comments, please contact Mr. Eric R. Hengst, Principal Environmental Engineer, at (707) 745-7385.

Sincerely,  
VALERO REFINING CO. - CALIFORNIA



Clark Hopper  
Environmental Manager, Benicia Refinery

Attachments

cc(w/attachments): Mr. Eric Hengst - Valero  
Mr. Jack Broadbent – EPA Region IX

cc(w/o attachments): Mr. Steve Hill – Permit Services, BAAQMD