SOAH DOCKET NO. 582-23-14975
TCEQ DOCKET NO. 2023-0203-AIR

APPLICATION BY VALERO REFINING-TEXAS, L.P. VALERO CORPUS CHRISTI REFINERY WEST PLANT TCEQ PERMIT NOS. 38754 AND PSDTX324M15	**§ § § § §**	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

EXECUTIVE DIRECTOR'S RESPONSE AND EXCEPTIONS TO THE PROPOSAL FOR DECISION

TO: Honorable Administrative Law Judges Amy Davis and Holly Vandrovec:

The Texas Commission on Environmental Quality (TCEQ) Executive Director has reviewed the Proposal for Decision (PFD) and proposed order and maintains her position that the review of the application and draft permit met all applicable statutory and regulatory requirements. Executive Director staff performed the necessary review to ensure that the draft permit would meet all federal and state requirements and would be protective of human health and welfare. The ALJs determined that the PM emission limit for PM of 1lb/1,000 lb coke burn for the Heavy Oil Cracker (HOC) satisfies best available control technology (BACT).[1] However, the ALJs determined that Valero failed to meet its burden of proof regarding the BACT analysis for NO_x.[2]

Therefore, the Executive Director excepts to the PFD's recommendations that 37 ppm of NO_x is not BACT and that the SCR and LoTOx cost analysis was deficient. The Executive Director contends that the PFD's recommendations to revise the Draft Permit are not BACT and are not required for this permit.

[1] COL, at 19, 26. An HOC is a type of Fluid Catalytic Converting Unit (FCCU).
[2] COL, at 19.

I. Procedural Background

On September 30, 2021, Valero submitted its application for an NSR permit authorization. If issued, Air Quality Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211 would authorize construction of the Valero HOC Unit in Corpus Christi, Nueces County, Texas.[3] The application was declared administratively complete on October 5, 2021.[4]

Valero filed a Direct Referral to the State Office of Administrative Hearings (SOAH) on January 13, 2023, for a determination on affected party status.[5] A preliminary hearing on the matter was held virtually on May 22, 2023.[6] The Administrative Law Judges (ALJs) heard testimony regarding Citizens for Environmental Justice's (CFEJ) and Hillcrest Resident Association's party status at the preliminary hearing. In SOAH Order No. 1, the ALJs determined that CFEJ presented members that qualified as affected persons; therefore, the ALJs concluded that CFEJ met the requirements for associational standing, granted CFEJ party status, and ordered the parties to submit a proposed procedural schedule for the hearing on the merits for the referred issues.[7] The ALJs did not grant party status to the Hillcrest Residents Association because it did not show that one or more members of the group would have standing to request a hearing in their own right. The hearing on the merits was held virtually on August 22, 2023.

[3] ED Ex. ED-14, at 1064–65.
[4] *Id.* at 1065.
[5] Id.
[6] Applicant's Ex. D, AR Tab B, at 00009-17.
[7] Order No. 1: ORDER MEMORIALIZING PRELIMINARY HEARING AND ADOPTING PROCEDURAL SCHEDULE (May 24, 2023).

II. Arguments

A. NO_x Emission Limit

The ALJs determined that the 37 ppm emission limit for NO_x is not BACT.[8] Specifically, the ALJ s state that the 37 ppm is "is a significantly higher pollution limit for NO_x from the FCCU when compared to what other refineries have achieved from their FCCUs using LoTOx." The ALJs argue that Valero's reliance on emission limits at previous permitting facilities is not BACT because it "incentivize facilities to use older, less expensive, and ultimately less effective pollution controls than what is demonstrated by the pollution controls available"[9] and that "the preponderance of the evidence demonstrated that FCCUs using LoTOx achieve outlet concentrations ranging from 8 to 10 ppm."[10]

However, TCEQ testimony and the record before the court established BACT is an enforceable emission limit in an NSR permit, whereas the Lowest Achievable Emission Rate (LAER) is finding lowest limitation in practice.[11] LAER is the most stringent emission limitation achieved in practice; BACT is not.[12] LAER applies in counties that are designated as nonattainment.[13] Corpus Christi is located in Nueces County, which is in attainment for all 10 pollutants.[14] Therefore, applying the LAER standard to this case is inappropriate.

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[8] Proposal for Decision (PFD), at 45; Findings of Fact (FOF), at 78; Conclusions of Law (COL), at 19, 27.
[9] PFD, at 46.
[10] PFD, at 46.
[11] ED Ex. ED-1, at 000022; ED Ex. ED-4, at 000106.
[12] ED Ex. ED-4, at 000106.
[13] ED Ex. ED-4, at 000106. "Nonattainment permits must include LAER, as opposed to BACT." *Id.*
[14] ED Ex. ED-1, at 000023.

TCEQ BACT guidance, Air Pollution Control: How to Conduct a Pollution Control Evaluation," APDG 6110, establishes the procedures for reviewing BACT.[15] APDG 6110 states the BACT process requires that the permit "must establish an *enforceable emission limit* for each subject emission unit at the source and for each pollutant subject to review that is emitted from the source."[16] As explained in Cara Hill's testimony, the RTC, and TCEQ guidance, the three tier system is an appropriate approach to reviewing BACT.[17] For Tier I, the "applicant's BACT proposal is compared to the emission reduction performance levels accepted as BACT in recent NSR permit reviews for the same process and/or industry."[18] Because we are comparing NSR permits and the permits are required to have enforceable emission limits, TCEQ would be looking at enforceable emission limits and not data from other sources that are not NSR permits or that are not enforceable emission limits establishing BACT.[19] The suggestion that BACT should be 8-10 ppm because these concentrations were found in a report, is not a proper BACT review in accordance with TCEQ guidance.[20] This proposal is consistent with a LAER determination, as the ALJ's contend in the PFD that "there are refineries that are achieving much lower NO_x emissions than what Valero seeks in its own permit."[21] While this may be true, that standard is not BACT. Whether another facility has achieved a performance level during a test is not a demonstration

[15] *See generally* ED Ex. ED-4, APDG 6110, Air Pollution Control: How to Conduct a Pollution Control Evaluation, at 000083.
[16] ED Ex. ED-4, at 000105 (emphasis added).
[17] ED Ex. ED-4, at 000097; ED Ex. ED-14, Executive Director's Response to Comments for Valero Refining-Texas, L.P. Permit No. 38754 and PSDTX324M15, at 001073; ED Ex. ED-1, Direct Testimony of Cara Hill, at 000018-19.
[18] ED Ex. ED-4, at 000097. Ms. Hill is the TCEQ permit reviewer assigned to review this project.
[19] ED Ex. ED-1 at 000018. *See* ED Ex. ED-4, at 000097; ED Ex. ED-14, at 001073.
[20] *See generally*, ED Ex. ED-1 at 000018. *See* ED Ex. ED-4, at 000097; ED Ex. ED-14, at 001073.
[21] PFD, at 18; ED Ex. ED-4, at 000106.

that such a performance level can be achieved by other sources nor is it appropriate as the sole support for a BACT determination.

The Tier I BACT was determined to be 20 ppm because most of the NSR permits had 20 ppm as the enforceable emission limit, as shown by the chart below Valero provided in their application:

Data Source	Refinery	SO_2 Limits	PM Limits	NOx Limits	CO Limits
RBLC (LA-0261)	Alon Krotz Springs, LA	25 ppmvd		80 ppmvd	
RBLC (TX-0587)	Phillips 66 Sweeny		0.67 lb/1000 lb		
RBLC (TX-0562) PSDTX653M1	CITGO East Plant	25 ppmvd (365 d) 50 ppmvd (7 d) 200 ppmvd (1 hr)	2 lb/1000 lb	20 ppmvd (365 d) 40 ppmvd (7 d) 180 ppmvd (1 hr)	100 ppmvd (365 d) 500 ppmvd (1-hr)
RBLC (DE-0020)	Valero Delaware City	25 ppmvd		20 ppmvd	
RBLC (OH-0308)	Sunoco Toledo			40 ppmvd	180 ppmvd
PSDTX762M3	TOTAL Port Arthur	50 ppmvd (1-hr)	0.82 lb/1000 lb	70 ppmvd (1-hr)	500 ppmvd (1-hr)
PSDTX402M3	BP Texas City	—	—[8]	—	—
2501A	Valero Houston	25 ppmvd (365 d) 50 ppmvd (7 d) 300 ppmvd (1 hr)	1 lb/1000 lb 20% opacity	19 ppmvd (365 d) 38 ppmvd (7 d) 200 ppmvd (1 hr)	500 ppmvd (1-hr)
39142	Valero Texas City	25 ppmvd (365 d) 50 ppmvd (7 d) 200 ppmvd (1 hr)	1 lb/1000 lb 15% opacity	19 ppmvd (365 d) 38 ppmvd (7 d) 200 ppmvd (1 hr)	400 ppmvd (365 d) 500 ppmvd (1 hr)
RBLC (TX-0290)	Shell Deer Park	25 ppmvd (365 d)		20 ppmvd (365 d)	
RBLC (AR-0061)	Lion Oil El Dorado, AK	25 ppmvd (365 d)	0.5 lb/1000 lb	20 ppmvd (365 d)	
CD	Marathon Texas City	25 ppmvd (365 d) 50 ppmvd (7 d)		20 ppmvd (365 d)	
CD	Valero (multiple refineries)		1 lb/1000 lb (each refinery)	33.4 ppmvd (365 d; system-wide coke burn-weighted)	500 ppmvd (1-hr; each refinery)
CD	ExxonMobil Joliet, IL	25 ppmvd (365 d) 50 ppmvd (7 d)		20 ppmvd (365-d) 40 ppmvd (7 d)	
CD	ExxonMobil Billings, MT	25 ppmvd (365 d) 50 ppmvd (7 d)		40 ppmvd (365-d) 80 ppmvd (7 d)	

[22]

However, 20ppm would not be appropriate BACT for this FCCU because of technical differences between this FCCU unit and others.[23] As Valero explains in its application:

> Valero believes that there are compelling technical differences between its FCC installation and those which have been issued permits with NOX limits of 20 ppmvd or lower. These are listed below:

[22] App. Ex. D – AR Tab D, at VAL_000057.
[23] ED Ex. ED-1, at 000019-20.

- The West Plant HOC is a "full burn" design, which means that catalyst is regenerated and coke is fully oxidized to CO2 in one step, without the use of a CO boiler. Therefore, controls that would normally be applicable to a CO boiler (e.g., flue gas recirculation) are not technically feasible. Selective catalytic reduction (SCR) is also dis-preferred in practice at fullvburn units, with the majority (if not all) of SCR installations occurring on "partial-burn" FCC units with downstream CO boilers or process heaters.
- The most frequently used control device for achieving NOX levels of 20 ppmvd or less on FCCs the LoTOx system. LoTOx is a control technology that uses ozone to oxidize insoluble NOX compounds to soluble NOX compounds, which are then recovered in the wet scrubber. It requires operation within a low temperature range (less than 300˚ F). Based on the current configuration of the HOC and associated wet scrubber, Valero does not believe it is feasible to operate the system at optimal conditions (combination of adequate residence time and low stack temperature) without rebuilding the existing wet scrubber. Since wet scrubbers differ in their conduciveness to a LoTOx retrofit, Valero does not believe that the recent permit determinations capture this technical practicability issue.[24]

TCEQ guidance establishes "[f]or an emission reduction option to be eliminated as technically infeasible, the applicant must clearly demonstrate that, based on physical, chemical and/or engineering principles, that technical difficulties will preclude its successful use."[25] The ALJs' characterization of Valero's application does not accurately represent what Valero said in the application.[26] The two bullet points from Valero's application above, regarding technical differences, where determined during the review of the application to adequately satisfy the requirements to clearly demonstrate that based on physical, chemical, and/or engineering principles, that the technical difficulties will preclude its successful use for both the SCR, FGR, and the LoTOx to achieve 20 ppm.[27]

[24] App. Ex. D – AR Tab D, at VAL_000058-59.
[25] ED Ex. ED-4, at 000130.
[26] *See* PFD, at 49; *See* App. Ex. D – AR Tab D, at VAL_000058-59.
[27] See ED Ex. ED-1, at 000019-20; See ED Ex. ED-14, at 001074.

Because there were compelling technical differences, TCEQ moved to Tier II BACT.[28] There were no similar industries where applicable controls could be identified, and the review progressed to Tier III.[29] TCEQ's permit reviewer, Cara Hill, testified that she reviewed the application, which included the above information, and concluded that it met all applicable requirements and would be protective of human health and the environment.

B. Tier III Cost Analysis

The ALJs separately contend that the cost analysis for LoTOx and SCR was insufficient.[30] BACT was established at 37 ppm based on the evidence Valero provided in the Application.[31] If a source meets Tier I or Tier II BACT, there are no costs on record, the cost analysis only occurs at Tier III.[32] TCEQ guidance states, "[t]o justify elimination of a BACT alternative, the applicant should demonstrate to the satisfaction of the TCEQ that the cost of pollutant removal (i.e., dollars per ton removed) for the control alternatives are disproportionately high when compared to the cost of control for the pollutant in recent BACT determinations."[33] TCEQ has historically used an approximate value of $10,000 based on what has been considered to be economically unreasonable in other permit reviews.[34] This is not a bright line "threshold".[35] As the

[28] ED Ex. ED-14, at 001074; ED Ex. ED-1, at 000019-20.
[29] ED Ex. ED-14, at 001074; ED Ex. ED-1, at 000019-20.
[30] PFD, at 46.
[31] App. Ex. D – AR Tab D, at VAL_000059; ED Ex. ED-13, Preliminary Determination Summary, at 001045. The current NO_X permit limit for the HOC unit (37 ppmvd 365-day average) was ultimately the outcome of Valero's system-wide consent decree." App. Ex. D – AR Tab D, at VAL_000059.
[32] ED Ex. ED-1, at 000018-19.
[33] ED Ex. ED-4, at 000131.
[34] Transcript of Hearing on the Merits (HOM) (Transcript), at 204:18-23.
[35] HOM, at 204:18-23.

cost of $38,264 is over three times more than the $10,000 which has been considered economically unreasonable in recent permit reviews.[36]

The ALJ's rely on the RECLAIM report provided by the Protestants as a basis for considering the cost of LoTOx and SCR.[37] However, TCEQ only conducts a cost analysis in accordance with the EPA Air Pollution Control Cost Manual.[38] TCEQ guidance states, "[t]he cost analysis section of the Air Pollution Control Cost Manual is considered by the TCEQ to be a sound source for the quantitative cost analysis. However, the TCEQ does not use or accept equipment specifications presented in the design development section of the manual."[39]

Further, the ALJs contend that Valero's cost effectiveness argument does not apply a BACT of 8ppm or 10ppm.[40] However, as explained in part II.A. above, urging an emission limit at 8ppm or 10ppm is not BACT.[41] The LAER standard, which only applies in nonattainment areas, as explained in TCEQ guidance is "the most stringent emission limitation derived from either of the following: The most stringent emission limitation contained in the implementation plan of any state for such class or category of source; or [t]he most stringent emission limitation achieved in practice by such class or category of source."[42] Therefore, because the LAER standard does not apply in this case, it is irrelevant on what the cost analysis would be based on a LAER emission limit, either based off the EPA Cost Manual or the RECLAIM report urged by the Protestants.

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[36] *See* ED Ex. ED-1, at 000024. *See generally* App. Ex. D – AR Tab D, at VAL_000064.
[37] PFD, at 48.
[38] ED Ex. ED-1, at 000025; *See generally* ED Ex. ED-28.
[39] ED Ex. ED-4, at 0000130.
[40] PFD, at 49.
[41] *See supra* II.A., at 3.
[42] ED Ex. ED-4, at 000106.

C. No Proposed Emission Limit or BACT

The ALJ's do not contend or suggest a specific BACT emission limit for NO_x for the HOC.[43] While the Court lays out it's arguments for why 37 ppm is not BACT, and suggests a limit of 8-10ppm is achievable for BACT, no specific number is proposed.[44] Therefore, the Executive Director would except and objects that the ALJ's do not propose a specific emission limit, or establish that a different limit than what is contained in the draft permit should be BACT for NO_x for the HOC FCCU unit subject to this permit action.

[43] *See generally*, PFD at 48.
[44] *See generally*, PFD, at 48-49.

III. Conclusion

The Executive Director has demonstrated that the evidence establishes that the application and draft permit meet all applicable statutory and regulatory requirements and is protective of human health and welfare.

The Executive Director excepts to the ALJs' recommendation that 37 ppm was not a sufficient emission limit for NO_x for the HOC unit, that BACT was not established, and that no specific emission limit or BACT limit was proposed for NO_x. Therefore, the Executive Director respectfully requests that the Commission grant this exception and issue the permit as proposed.

Respectfully submitted,

Texas Commission on Environmental Quality

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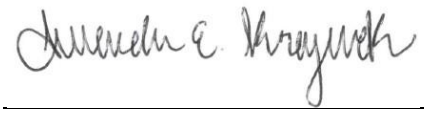

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CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing Executive Director's Closing Arguments have been served on the counsel for all parties via electronic mail, and on the TCEQ Office of the Chief Clerk and the State Office of Administrative Hearings via efiling, on December 11, 2023.

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