VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT	**ENGINEERING DIVISION** **Policies and Procedures**
Issued: 11/10/09	**Subject:** BACT Implementation Permitting Policy
Revised: 12/07/23	

Introduction

Best Available Control Technology (BACT) is defined in Rule 26.1, "New Source Review – Definitions", and is required for all new, replacement, modified, or relocated emissions units pursuant to Section A of Rule 26.2, "New Source Review – Requirements." Rule 26.2.A has a zero threshold for BACT for ROC, NOx, PM-10, and SOx, however, there is no BACT requirement for CO. It is important to note that Ventura County is one of the few air pollution control agencies in the nation that has a zero threshold for BACT.

The purpose of this memo is to provide guidance to District staff, permit applicants, and the public on the implementation of this definition and to also document the District's procedures for defining various terms in the BACT definition that are not otherwise defined in District rules.

BACT is defined in Rule 26.1.3 as follows:

> *"Best Available Control Technology (BACT)": The most stringent emission limitation or control technology for an emissions unit which:*
>
> *a. Has been achieved in practice for such emissions unit category, or*
>
> *b. Is contained in any implementation plan approved by the Environmental Protection Agency for such emissions unit category. A specific limitation or control shall not apply if the owner or operator of such emissions unit demonstrates to the satisfaction of the Air Pollution Control Officer (APCO) that such limitation or control technology is not presently achievable, or*
>
> *c. Is contained in any applicable New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants set forth in 40 CFR Parts 60 and 61, or*
>
> *d. Any other emission limitation or control technology, including, but not limited to, replacement of such emissions unit with a lower emitting emissions unit, application of control equipment or process modifications, determined by the APCO to be technologically feasible for such emissions unit and cost effective as compared to the BACT cost effectiveness threshold adopted by the Ventura County Air Pollution Control Board.*
>
> *In defining emissions unit categories, the APCO may take into account the function of the emissions unit, the capacity of the emissions unit, the annual throughput of the emissions unit and the location of the emissions unit with respect to electricity or fuels needed to achieve an emission limitation or control technology.*

It is important to note that the Ventura County APCD definition of BACT is more like the federal definition of LAER (Lowest Achievable Emission Rate) in that cost-effectiveness is not a consideration under Rule 26.1.3.a, b, or, c. By its construction, a cost-effectiveness analysis is only used under Rule 26.1.3.d for proposed BACT limits that are more stringent than BACT determined under Rule 26.1.3.a, b, or, c. Note that Rule 26 BACT requirements apply equally to both federal major source permitting and "local" minor source permitting. EPA guidelines do not allow for routine consideration of the cost of control in LAER determinations. The EPA guidelines are more concerned that the control costs may be "prohibitive" such that the new source could not be built or operated with the control technology. The definition of BACT and LAER in state law (Health & Safety Code Section 40405) has no explicit reference to cost considerations.

Policy Statements

The determination of BACT is performed on a case by case basis for each Authority to Construct application and for each pollutant subject to BACT. Practically speaking, for most applications BACT is determined under Rule 26.1.3.a or Rule 26.1.3.d as they are generally more stringent than BACT determined under Rule 26.1.3.b or Rule 26.1.3.c.

BACT can be required in a variety of forms, including but not limited to, a concentration limit, mass limit, reduction or destruction efficiency requirement, control equipment requirement, fuel requirement, raw material limit, work practice standard, etc. For many cases, BACT may be considered to be compliance with an applicable Ventura County APCD rule.

Rule 26.1.3.a - "Achieved in Practice BACT"

When determining "achieved in practice" BACT under Rule 26.1.3.a, the BACT manuals and rule books of the South Coast AQMD, San Joaquin Valley APCD, and / or Bay Area AQMD should be reviewed, at a minimum, as applicable. Experienced readers may note that both the emission limitations and emission unit categories may differ amongst these air districts. Note that an air district rule that is not yet approved in the SIP may be required as BACT if it is more stringent than BACT determined under Rule 26.1.3.b. In addition to BACT manuals, rules, and existing Ventura County APCD permits, achieved in practice BACT may be determined from other Part 70 (Title V) permits, state or local permits, trade journals, newsletters, etc. The EPA and California BACT/LAER Clearinghouses may also be used, however, they are generally not the "most stringent". For most surface coating operations (i.e. motor vehicle coating operations subject to Rule 74.18) BACT should be compliance with the Ventura County APCD rule unless another air district rule or BACT determination is significantly more stringent than the Ventura County APCD rule. When reviewing the requirements of other air districts, it is important to note permitting thresholds such that an emission unit requiring a permit in Ventura County may be exempt in another air district and that BACT should be determined accordingly.

Just as important as BACT determined above is the concept of "achieved in practice in Ventura County." Where BACT has been determined for a particular emission unit category or type of facility, this BACT determination should be extended to the same or similar emission unit categories. This is particularly true because of the zero BACT threshold in Ventura County Rule 26.2.A. BACT for some emission units and pollutants may be triggered in Ventura County when it is not triggered in other air districts and does not appear in other district BACT manuals. For

most surface coating operations (i.e. motor vehicle coating operations subject to Rule 74.18) BACT should be compliance with the Ventura County APCD rule unless another air district rule or BACT determination is significantly more stringent than the Ventura County APCD rule. When reviewing the requirements of other air districts, it is important to note permitting thresholds such that an emission unit requiring a permit in Ventura County may be exempt in another air district and that BACT should be determined accordingly.

The concept of "technology transfer" shall be used when determining "achieved in practice" BACT for an emissions unit category. As noted in the attached EPA Memorandum of August 29, 1988 entitled "Transfer of Technology in Determining Lowest Achievable Emission Rate", when considering gas stream controls what matters is the gas stream composition and not the source of the emissions. For example, landfill gas is very similar to sewage digester gas in composition (methane, carbon monoxide and sulfur) and the sulfur control technologies are identical. In addition, the emission unit combusting the gas is immaterial. The same sulfur controls would be used for a landfill gas flare, engine, heater, boiler, etc.

In addition to the above, "achieved in practice" BACT may consider the very important concept of "new technology". This concept, as practiced when determining BACT, is described in the South Coast AQMD Guidelines and allows for emissions control technologies to be considered as "achieved in practice" even if they have evolved without a regulatory requirement. This concept has allowed many BACT emission limitations and control technologies to evolve to their current levels. For a new technology to be considered to be "achieved in practice" it generally needs to be commercially available, in operation, reliable, verified, and effective over the proposed range of operations.

Rule 26.1.3.b – "Contained in any Approved Implementation Plan"

This section is self explanatory. It is important to note that only rules and regulations approved by EPA in a SIP are included is this subsection. However, a limitation included in a rule or regulation not yet approved in a SIP may be required as BACT under Rule 26.1.3.a.

Rule 26.1.3.c – "Contained in any NSPS or NESHAP"

This section is self explanatory.

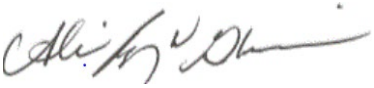
Rule 26.1.3.d – "Technologically Feasible and Cost-Effective"

This portion of the BACT definition, by construction, only applies to a BACT determination that is proposed to be more stringent than "achieved in practice" BACT determined under Rule 26.1.3.a. It also means that cost-effectiveness is not a consideration if a BACT determination is achieved in practice. The definition also allows the District to require the replacement of a proposed emission unit with a lower emitting emission unit. For example, a new oil well and associated pumping unit may be proposed to be powered with a natural gas engine. However, the District currently requires that new oil well pumping units be powered with electric motors in lieu of engines.

For implementing the BACT definition of Rule 26.1.3.d, the cost-effectiveness thresholds and procedures detailed in the attached VCAPCD Board letter dated November 12, 2019 shall be

used. For ROC and NOx, the thresholds are $15.00 per pound reduced, which is equivalent to $30,000 per ton reduced. For PM and SOx, the thresholds are $5.00 per pound reduced, which is equivalent to $10,000 per ton reduced. Note that the PM and SOx BACT cost effectiveness thresholds were not revised with the VCAPCD November 12, 2019 Board letter and are based on the attached VCAPCD December 20, 1988 Board letter.[1]

Signed:



Ali R. Ghasemi
Air Pollution Control Officer

Attachments:

1988 EPA Memorandum
1988 BACT Cost Effectiveness Procedures and Screening Levels for Costs
2019 BACT Cost Effectiveness Procedures and Screening Levels for Costs

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[1] BACT Cost Effectiveness Values revised 12/07/23 to reflect VCAPCD November 12, 2019 Board letter "Amend Policy Regarding "BACT Cost Effectiveness Procedures and Screening Levels for Costs" to Update the Cost Screening Levels for ROC and NOx, and to Find That Adoption of the Proposed Values are Exempt From CEQA"

August 29, 1988

MEMORANDUM

SUBJECT: Transfer of Technology in Determining Lowest Achievable Emission Rate (LAER)

FROM: John Calcagni, Director Air Quality Management Division (MD-15)

TO: David Kee, Director Air and Radiation Division, Region V

This is in response to your memorandum of August 9, 1988, requesting guidance on the transfer of control technology between source categories for the purpose of determining LAER for a source. This issue was raised by the Michigan Department of Natural Resources in proposing that the control achieved by incineration of oven and spray booth emissions from a truck parts surface coating line (which is considered to be miscellaneous metals) should also be achievable by an automobile surface coating line. You stated that the policy set forth in the January 16, 1979 Federal Register (page 3280) would appear to support this position; however, the sentence at the end of the citation, "Comments on this interpretation and whether it is appropriate to revise the regulatory definition are solicited," suggests that the Environmental Protection Agency might have changed its policy since that time.

This is to reaffirm the policy stated in the January 16, 1979 Federal Register. Our quick investigation of the regulatory history since the publication of that policy indicates that no comments were ever received on that issue. Consequently, the policy has never been revisited. Furthermore, we interpret the last sentence you cited to mean that we would consider whether to redefine LAER to clearly reflect policy, not that we would change the policy on transfer of control technology.

There are two types of potentially transferable control technologies: 1) gas stream controls, and 2) process controls and modifications. For the first type of transfer, we consider the class or category of sources to include any sources that produce similar gas streams that could be controlled by the same or similar technology. The process that generates a volatile organic compound (VOC) laden gas stream, for example, is immaterial. What matters is whether the gas stream characteristics, such as composition and VOC concentration, are sufficiently similar

to a stream from which incineration technology, for example, may be transferred. The same would be true for the control of particulate matter or sulfur dioxide in a gas stream using control devices such as baghouses or scrubbers.

For the second type of transfer, process similarity governs the decision. For example, coating compositions and application technology probably do not vary substantially across the entire class of motor vehicle coating sources. A source within that category would, therefore, have to clearly demonstrate the unique process characteristics that preclude it from using otherwise transferable LAER technology used by a similar but not necessarily identical source. We would be more cautious, however, before grouping more disparate operations, such as coating semiconductor circuit boards, in the same class as coating motor vehicles.

Based on your memorandum, Michigan's application of the technology transfer policy is based on treatment of the first type (i.e., control of the gas stream). Consequently, we agree with their position and your support of it. Incineration of spray booth emissions is a transferable technology in a LAER determination. Whether it is actually selected as LAER depends, of course, on the actual gas stream characteristics. Requiring the same level of control, based on process-related factors such as coating formulation and coating transfer efficiency, would be a more subjective call but is not the focus of your question.

In a follow-up telephone conversation with Gary McCutchen on August 24, 1988, your staff requested our policy on LAER determinations for individual emissions units versus the entire facility. Our policy is that LAER is primarily an emissions unit determination. Each emissions unit must achieve the lowest possible emissions rate. Once LAER has been decided for each emissions unit, the reviewer should then assess LAER for the entire building, structure, facility, or source. If some more effective LAER exists by controlling the entire facility (e.g., the entire building exhaust instead of units within the building), then the "facility-wide" LAER should be considered. However, there are three hurdles to determining "facility-wide" LAER. The first is that an overall limit on multiple units is difficult if not impossible to enforce. The second is that a "facility-wide" LAER is often a combination of emissions unit and facility control, so sources seldom explore this option. The third is that most "facility-wide" LAER approaches proposed by sources are actually bubbles. They do not really represent the sum of the LAER's for the respective units, as explained at the beginning of this paragraph. As you know, LAER cannot be bubbled.

Finally, your staff also asked whether LAER can be considered individually for each aspect of control of a source. Specifically, they wanted to know if LAER for surface coating can be considered first for the composition of the coating, then for the transfer efficiency, and finally for the exhaust gas stream. The answer is yes, although reviewers must be aware that one decision affects the others. For example, a requirement for low VOC paint may result

in gas stream VOC concentrations so low that incineration of the gas stream is not considered feasible in terms of LAER. However, it is acceptable to consider composition from one source, application technology (transfer efficiency) from another source, and incineration from a third source when performing a LAER determination, as long as each of those sources meets the control technology transfer criteria discussed above.

If you have further questions regarding transfer of technology in LAER determinations, please contact Gary McCutchen at FTS 629-5592.

RESOURCE MANAGEMENT AGENCY
county of ventura

Air Pollution
Control District

Richard H. Baldwin
Air Pollution Control Officer

December 20, 1988 (Agenda)

Air Pollution Control Board
Ventura County Air Pollution Control District
800 South Victoria Avenue
Ventura, CA 93009

SUBJECT: BACT COST EFFECTIVENESS PROCEDURES AND SCREENING LEVELS FOR COSTS

RECOMMENDED ACTION:

Adopt, as Board policy, the proposed cost screening levels for use in determining whether a particular air pollution control technology is cost effective.

STATEMENT OF MATTER FOR BOARD CONSIDERATION:

Background

One of the key components of the APCD New Source Review and Prevention of Significant Deterioration Rule (Rule 26) is the requirement that new and modified sources of air pollutants install the Best Available Control Technology (BACT). Two different definitions of BACT are used in Rule 26. Both definitions allow economic factors to be considered in determining BACT under appropriate circumstances. For major sources of reactive organic compounds, nitrogen oxides or particulate matter, economic considerations are only appropriate for a control technology that has never been required or used for the particular source type under consideration. For other sources, economic considerations are always appropriate in determining BACT.

The method used by the District staff to consider the economic impact of requiring a particular control technology is to calculate the cost effectiveness of the control technology in terms of dollars per pound (or dollars per ton) of pollutant reduced.

Discussion

In the past, the District staff have used a very simple procedure for calculating the cost effectiveness of a control technology. Recently, the staff began using a more detailed procedure which is similar to the procedure being used by the California Air Resources Board and the South Coast Air Quality Management District. A copy of the procedure is attached for your information (Attachment 1).

Once the District staff and an applicant agree on a calculated cost effectiveness, a determination is made by District staff concerning whether the proposed BACT is cost effective. Currently, the staff is using screening levels for costs developed by the South Coast Air Quality Management District in May, 1983 which have been adjusted for inflation using the Consumer Price Index for All Urban Consumers in the United States. These cost screening levels are listed in the first column in the table below.

Comparison of Screening Levels for Costs of BACT

	Current VCAPCD $/lb ($/ton)	New SCAQMD $/lb ($/ton)	Proposed VCAPCD $/lb ($/ton)
ROC	2.68 (5,539)	8.75 (17,500)	9.00 (18,000)
NOx	5.20 (10,397)	12.25 (24,500)	9.00 (18,000)
PM	3.05 (6,110)	2.65 (5,300)	5.00 (10,000)
SOx	2.09 (4,180)	9.15 (18,300)	5.00 (10,000)
CO	- (-)	- (-)	0.50 (1,000)

The South Coast Air Quality Management District recently revised its cost screening levels based on the most expensive control strategies adopted by the SCAQMD Board. The new SCAQMD cost screening levels are listed in the second column in the table above.

The District staff is proposing to increase its cost screening levels. The proposed Ventura County APCD cost screening levels are listed in the third column of the table above. The proposed cost screening levels are only roughly based on the new SCAQMD cost screening levels.

The Ventura County Air Quality Management Plan is based on equal reductions in reactive organic compounds (ROC) and nitrogen oxides (NOx). Therefore, the District staff believe the cost screening levels for ROC and NOx should be equal. Particulate matter (PM) and sulfur oxide (SOx) emissions both contribute to the inhalable particulate matter (PM10) problem in the County. Therefore, the District staff believes the cost screening levels for these two pollutants should also be equal. Since the PM10 problem is not as severe in Ventura County as the ozone problem, the staff believes that the cost screening level should be less for PM and SOx than for ROC and NOx. Finally, Ventura County does not have a severe CO problem and the staff, therefore, believes that the cost screening level for CO should be minimal.

Adoption of the proposed policy was recommended by the Air Pollution Control District Advisory Committee on November 22, 1988. (See Attachment 2 for voting record.)

This proposal has been reviewed by the offices of the Chief Administrative Officer and County Counsel. If you have any questions, please contact Karl Krause at extension 2808.

Richard H. Baldwin

Richard H. Baldwin
Air Pollution Control Officer

Attachments

kkbact

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Dr. Laki Tisopulos
Air Pollution Control Officer

November 12, 2019

Air Pollution Control Board
800 South Victoria Avenue
Ventura, CA 93009

SUBJECT: AMEND POLICY REGARDING "BACT COST EFFECTIVENESS PROCEDURES AND SCREENING LEVELS FOR COSTS" TO UPDATE THE COST SCREENING LEVELS FOR ROC AND NOx, AND TO FIND THAT ADOPTION OF THE PROPOSED VALUES ARE EXEMPT FROM CEQA

RECOMMENDED ACTIONS:

1. Amend the Ventura County Air Pollution Control District's (VCAPCD's) policy regarding "BACT Cost Effectiveness Procedures and Screening Levels for Costs" (Attachment 1) to update the cost screening levels for Reactive Organic Compounds (ROC) and Oxides of Nitrogen (NOx) to be used for best available control technology (BACT) and best available retrofit control technology (BARCT) determinations.

2. Find that the approval of the proposed changes are exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines sections 15061(b)(3), 15307 and 15308.

STATEMENT OF MATTER FOR BOARD CONSIDERATION:

Background

VCAPCD has authority to reduce criteria pollutant emissions through permitting stationary sources of pollution, including: NOx, ROC, Sulphur Oxides (SOx), Carbon Monoxide (CO) and Particulate Matter (PM) to meet both State and National Ambient Air Quality Standards. Any new equipment emitting any of the above pollutants is required to obtain permits from VCAPCD per New Source Review (NSR) guidelines found in Rule 26 which require installation of BACT. Additionally, the District writes new rules and amends existing rules which may require equipment owners and operators to retrofit their equipment or practices using BARCT. Additionally, cost-effectiveness analysis or economic impact must be conducted when determining BARCT and/or BACT with the exception that this analysis is only required for BACT when emissions controls are more stringent than what has been achieved in practice.

When cost-effectiveness is considered, cost requirements are viewed in relation to the estimated emissions reduced. The District has adopted a threshold for each criteria pollutant which

outlines what is considered to be cost-effective. The current cost-effectiveness threshold was adopted in 1988 and since then the threshold has been used for both BACT and BARCT determinations. Actions which reduce emissions are expressed in dollars per ton of a specific pollutant reduced per year, and if this estimated cost is less than the adopted threshold, it is considered cost-effective.

Ventura County is designated nonattainment for state and as a "serious" nonattainment area for federal 8-hour ozone standards. Ozone is a secondary pollutant formed by the reaction of ROC and NOx in the presence of sunlight. Ventura County Air Pollution Control District's strategy to reduce NOx and ROC emissions includes requiring BACT for all new sources and BARCT for existing sources.

VCAPCD's Rule 26, New Source Review (NSR) requires that new and modified sources of air pollutants install BACT which is defined as "The most stringent emission limitation or control technology for an emissions unit that has been achieved in practice". This definition does not consider cost and the majority of BACT determinations in the NSR process are made using this definition. For any control technology that is more stringent than what has been achieved in practice, VCAPCD allows for the consideration of economic impact. The method used by the District staff to consider the economic impact of requiring a particular control technology is to calculate the cost effectiveness of the control technology in terms of dollars per ton of pollutant reduced.

To date, new rules and the revisions of existing rules have used the same threshold when determining what is technologically and economically feasible to reduce NOx and ROC emissions. Due to inflation, the threshold which was adopted in 1988 (see Attachment 1) is allowing fewer rule actions to reduce emissions and reducing the District's ability to further decrease emissions from stationary sources.

Proposal

Staff is proposing to amend the policy regarding cost-effectiveness screening levels to update the levels for ROC and NOx to be used for BACT and BARCT determinations. The proposed amendments will increase the BACT cost-effectiveness thresholds for ROC and NOx and adopt a separate BARCT cost-effectiveness threshold for NOx to be used in rule and development as summarized in Table 1 below. The proposed increase in the BACT thresholds for NOx and ROC are consistent with neighboring districts as shown in Table 2 below, whereas the proposed increase in BARCT threshold for NOx is consistent with the US Bureau of Labor Statistics Consumer Price Index (CPI) increase from 1988 to 2019. Staff has used CPI increase in updating the cost effectiveness threshold for BARCT, as this threshold is mostly used for BARCT determination of existing sources, as opposed to BACT which is only applicable to new sources and not likely require conducting cost-effectiveness analysis. Ventura County is a NOx limited ozone nonattainment area, and reductions in NOx emissions are more effective at reducing ground level ozone production.

Table 1. Comparison of VCAPCD Screening Levels

	Current BACT/BARCT	Proposed BACT	Proposed BARCT
	$/ton	$/ton	$/ton
ROC	$ 18,000	$ 30,000	$ 30,000
NOx	$ 18,000	$ 30,000	$ 39,000

Table 2. Neighboring District BACT/BARCT Thresholds

	SCAQMD (BACT)	SCAQMD (BARCT)	SBCAPCD (BACT)	SBCAPCD (BARCT)
	$/ton	$/ton	$/ton	$/ton
ROC	$ 30,947	$ 30,000	$ 32,012	$ 32,012
NOx	$ 29,262	$ 50,000	$ 32,012	$ 32,012

The proposed changes will have a no significant effect on the environment. The action is therefore exempt from CEQA pursuant to CEQA Guidelines section 15061(b)(3). To the extent the proposed changes would affect the environment, the effects would be beneficial because the new threshold values expand the District's ability to decrease emissions from stationary sources. Consequently, the changes are also categorically exempt pursuant to CEQA Guidelines sections 15307 and 15308.

This letter has been reviewed by both County Counsel and the Auditor-Controller's Office. If you have any questions, please contact Danny McQuillan at 805-645-1432 or Nancy Mendoza (Fiscal) at 805-645-1402.

DR. LAKI TISOPULOS, P.E.
Air Pollution Control Officer

Attachment 1 – VCAPCD Policy re: BACT Cost Effectiveness Procedures and Screening Levels for Costs