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April 23, 1987

NOTE TO REGIONAL NSR CONTACTS

Many questions raised in the past regarding the appropriateness of certain economic arguments in the best available control technology (BACT) analysis are addressed only vaguely (if at all) in existing EPA policy material.

Attached is a policy memorandum (and the incoming request) just issued by this office. This policy memorandum responds to questions raised by Region IV. Other Regions have indicated that they are faced with similar questions. We feel that this policy memorandum provides some badly needed guidance in this area.

To be most effective this policy memorandum should be as widely distributed as possible to those directly involved in BACT determinations. Therefore, if at all possible, please mail a copy of these memoranda to all of your State and local agencies for their use.

Our response is derived in large part from the knowledge and information provided by many of you. I would like to take this opportunity to express my appreciation for that input.

Gary McCutchen

Attachments

cc: Bob Bauman
John Crenshaw
Sally Farrell
Greg Foote
Tom Helms

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

APR 22 1987

MEMORANDUM

SUBJECT: Huntsville Incinerator - Determining Best Available Control Technology (BACT)

FROM: Gary McCutchen, Chief
New Source Review Section, CPDD (MD-15)

TO: Bruce P. Miller, Chief
Air Programs Branch, Region IV

This is in response to your March 30, 1987, memorandum regarding the BACT determination made by the Alabama Department of Environmental Management (ADEM) for the proposed Huntsville incinerator facility.

It is difficult to provide a detailed response to the significant and complex questions and issues you have raised within the relatively short turn-around time that you have specified. However, our initial review of

the information submitted indicates that the Region's position (i.e., the use of acid gas scrubbing as BACT for municipal waste incinerators) is consistent with emerging national policy and current BACT analysis for similar facilities.

We have reviewed the arguments presented by the applicant and ADEM. Although certain of the criteria used in the BACT decision are acceptable, many of the reasons given for not requiring acid gas controls are unacceptable--even within the context of a case-by-case analysis. Specifically:

1) The fact that the new source performance standard (NSPS) for this source category (40 CFR 60, Subpart Db, June 19, 1986) does not require sulfur dioxide (SO2) scrubbing should not influence the BACT analysis. In a BACT analysis, an NSPS simply defines a minimal level of control. The fact that a technology was not selected for the NSPS (or that a pollutant is not regulated by the NSPS) is in no way indicative of the qualifications of a technology as a BACT candidate. The only reason for comparing control options to an NSPS is to determine whether the control option would result in an emissions level less stringent than the NSPS. If so, that option is unacceptable.

2) It is not correct to factor into the BACT analysis the contention that the proposed facility would be less polluting than any coal-fired boiler Redstone Arsenal would contemplate building if steam were not available from the proposed facility. Any emitting facility constructed by Redstone Arsenal would be a separate source and would be required to comply with all applicable environmental regulations. If the Redstone Arsenal were to construct a coal-fired facility or its own incinerator, it would also have to apply BACT. In fact, BACT for a coal-fired boiler might result in lower emissions than would a steam-producing incinerator.

3) In regard to ADEM's argument that the Huntsville plant would produce steam which is a less valuable commodity than the electricity produced at other similar plants, it is difficult to determine the validity of the argument without a detailed economic assessment. Even though electricity may be a more valuable product than steam (for some municipal waste incinerators), steam is cheaper to produce both from the point of capital and annualized costs. Depending on the purchase price of the steam, it may even be a more profitable alternative for those facilities where a buyer for the steam is on hand.

The ADEM has indicated that since the steam purchase agreements are already signed it is not possible for the applicant to consider raising the purchase price or the steam to defray the increased tipping cost that the applicant contends would result from the cost of SO2 controls. In most cases, this type of argument should be ignored. A reviewing agency is no more bound by an applicant's unfounded assumption regarding what level of control will constitute BACT than a bank is bound by an assumption of a certain interest rate on the applicant's loan or a supplier by an assumption on the applicant's part regarding the costs of materials or equipment. This is one case where it is acceptable for a BACT determination to make it uneconomical for a source to construct.

The EPA has no choice other than to ignore such arguments. If financial agreements like this were taken into account, applicants could simply sign contracts based on meeting the NSPS or even using no control whatsoever, then use those contracts to justify the level of control that they preselected.

In further response to the specific questions raised in your memo:

1) The document titled "Guidelines for Determining Best Available Control Technology (BACT)," dated December 1978, was issued for the purpose of providing the framework for a consistent approach in determining BACT. The document, however, is general in its attempt at defining the BACT process, and at best focuses on specifying the parameters which should be considered in the BACT analysis.

In October 1980, EPA published the "Prevention of Significant

Deterioration Workshop Manual." This document, in the hopes of bringing greater consistency to the BACT review process, presented an analytical format for the BACT analysis. Although the document recognizes the need

for evaluating BACT on a case-by-case basis, it does provide more specific guidance than the 1978 document in defining how economic, energy, and environmental factors are to be evaluated. If applied correctly, the methodology described in the workbook should result in a BACT determination consistent with the definition of BACT and acceptable to EPA.

Probably the best method of determining BACT, an approach that assesses BACT starting from the most effective control option available, is being successfully implemented by some State and local agencies. This approach, in conjunction with the PSD workshop manual, can be used to evaluate the State's proposed BACT decision. For further information on the implementation of this approach, contact Wayne A. Blackard, Chief, New Source Section, EPA Region IX (FTS 454-8249).

2) As you have pointed out, States are to decide how their environmental resources (such as increments) are used. A State may, for example, decide that a proposed source would consume too much increment and therefore prevent that source from being built or allow it to be built only if increment consumption is further reduced.

The BACT determination, however, is made totally independent of the amount of increment or air resources available. The environmental impact aspect of BACT is designed to ensure that a more costly control system will result in a decreased environmental impact (e.g., fewer emissions, smaller impact area, lower maximum ground level concentration, etc.). This environmental assessment should not be confused with the concept of using up the increment by "relaxing" BACT, a concept that EPA does not accept.

Once determined, BACT can only be made more stringent (not less) by environmental considerations. Examples include cases where BACT is not stringent enough to prevent exceedances of a national ambient air quality standard (or an increment) or where the State will not accept the level of control selected as BACT and demands more stringent controls to preserve increment. In both cases, the source has a choice of locating elsewhere or reducing either its emissions or its impact. Efforts to reduce emissions bring about the "technology-forcing" aspect of BACT and lowest achievable emission rate that Congress envisioned as part of a system designed to hold new emissions to an absolute minimum. If it works, the "forced" technology will likely become the new BACT level of control.

Possible grounds for overturning a BACT decision include an inappropriate review (e.g., BACT procedures not correctly followed, BACT decision not correctly justified), an incomplete review, a review based on false or misleading information, or a permit which is not enforceable as a practical matter. This is not a complete list; these are just some of the most common problems.

3) The PSD Workshop Manual also addresses this point by recognizing that "additional financing required for an alternative control strategy may jeopardize the financing of the entire project." However, the workshop manual also points out that "information is available on the

value of various emissions reductions that EPA and affected industries generally agree are reasonable." Since an applicant can bias the economics of a proposed project towards a less stringent control option, it is best in nearly all cases to evaluate the costs of controls against established norms. Many State and local agencies currently evaluate BACT proposals against dollars per ton criteria or against acceptable control costs for the category of source in question. This helps to ensure that the applicant does not bias the economics of the project against an otherwise acceptable control option. These types of approaches help to bring nationwide consistency to the BACT determinations while still allowing for a case-by-case determination.

The burden of proof always rests on the applicant to demonstrate why a

generally accepted and established control option is unacceptable for the proposed project. The demonstration deserves special scrutiny when the applicant claims that an established control option would prevent the source from being constructed. It should be noted that the reason for applying economics to the source category overall and then requiring extensive justification for less stringent control for an individual facility is that EPA cannot be placed in the position of allowing less stringent (or no) controls simply because an applicant cannot afford what similar sources are required to use.

Economic considerations will vary from project to project, but within the same general source category, construction and operation costs should not vary to the extent that the requirement to apply an established control option can stop a project. This type of argument generally is not acceptable. In most cases, a source simply should not be granted a permit if financing is inadequate for proper controls.

The caveat in existing BACT guidance about stopping a project is intended to prevent BACT determinations by a reviewing agency that are so much more expensive than the norm that a typical source could not reasonably be built. Examples might include requirements for a series of two or more baghouses or a control system whose cost greatly exceeds that of the base facility.

4) The Region's nonacceptance of the "alternative build scenario" appears appropriate in this case.

If you have any questions regarding this matter, please feel free to contact me at FTS 629-5592, or have your staff contact David Solomon at FTS 629-5375.

cc: NSR contacts

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

MEMORANDUM

DATE: March 30, 1987

SUBJECT: Huntsville Incinerator - Determining BACT Under PSD

FROM: Bruce P. Miller, Chief
Air Programs Branch
Air, Pesticides, and Toxics Management Division

TO: Gary McCutchen, Chief
New Source Review Section
Office of Air Quality Planning Standards

SUMMARY:

The purpose of this memoranda is to provide you with background information concerning the circumstances surrounding the proposed BACT for the Huntsville incinerator and solicit Headquarters' guidance and interpretation of the December 1978 "Guidelines for Determining Best Available Control Technology (BACT)" as it relates to the Huntsville Incinerator facility.

On December 31, 1986, the Alabama Department of Environmental Management (ADEM) submitted a draft PSD preliminary determination (Attachment I) for the Huntsville Municipal Incinerator. The proposed project will process 690 tons/day of municipal solid waste (MSW). The MSW, along with dried sewage sludge will be processed in two (2) 345 tons/day units which will generate steam to heat the Redstone Arsenal. The draft preliminary determination set forth BACT emission limits for the regulated pollutants subject to review. In particular, the emission limits set were 0.02 gr/dscf corrected to 12% CO_2 for particulate matter and 0.28 lb/mmBtu for sulfur dioxide (SO_2). No

emission limits were required for the nonregulated pollutants. Acid gas controls were not required to be installed.

The reasons given by the ADEM for not requiring acid gas controls for SO2 and H2SO4 emissions at the Huntsville plant were as follows:

* First, the Huntsville plant would produce steam while most of the other plants produce electricity, which must be purchased by the appropriate utility at the avoided cost to the utility. Second, the tipping fees currently charged elsewhere are generally several times the rate charged in Huntsville. The tipping fee generally reflects the availability of land for siting a landfill. A low tipping fee reflects the availability of low cost land, while a high fee reflects the opposite.

* Secondly, EPA proposed sulfur dioxide (40 CFR 60, Subpart Db, June 19, 1986) emission standards for industrial-commercial-institutional steam generating units under NSPS. An emission limit was not proposed for sulfur dioxide or the other gases in question from this type of unit, MSW-fired boilers, which indicates that no control equipment was considered appropriate. Sulfur dioxide emissions would be low due to the inherent low sulfur content of MSW.

* Thirdly, ADEM's BACT determination included plans by Redstone Arsenal to build a coal-fired boiler(s) if steam cannot be purchased from the Huntsville incinerator. Installation of a coal-fired boiler(5) with equivalent steam production by Redstone Arsenal would result in sulfur dioxide emissions 1.5 to 3.0 times higher than emissions from the proposed MSW-fired and package boilers. Because of these factors and the inherent low sulfur content of the fuel, an 0.28 lb/mmBtu SO2 emission limit was determined to be BACT for the MSW boilers with no acid gas control.

On February 10, 1987, EPA met with representatives from the ADEM, the City of Huntsville, and consultants to the City to discuss any comments that EPA had on the draft preliminary determination. (Attachment II is a list of the comments EPA presented to ADEM and the other parties). The discussions primarily focused on whether the installation of acid gas controls were warranted and should be required.

ADEM and City officials presented the argument that the installation of acid gas controls in addition to particulate emission controls would cause the tipping fee to go from $4/ton to $21/ton of garbage disposed. For the installation of only particulate emission controls, the tipping fee would rise to $9/ton of garbage disposed. The ADA stated that the imposition of the installation of acid gas controls would kill the project and require the City to revert back to the landfill for disposing of its refuse. Furthermore, ADEM argued that if the incinerator was not built and the steam was not able to be generated, the Redstone Arsenal would have to rebuild the existing coal-fired boiler or replace it as it is presently in violation of the existing SIP. Operation of the existing coal-fired boiler would cause more pollutants to be emitted to the atmosphere than from the incinerator project.

EPA informed ADEM and the City of Huntsville at the meeting that the PSD regulations do not address the issue of whether a project goes forth or not but only that the BACT is employed while taking into account energy, environmental, and economic impacts and other costs. We do not feel that PSD regulations allow the flexibility to consider alternative build scenarios in determining BACT. In addition, EPA argued that if you consider the impact from the North County Remand on this project regarding the consideration of hazardous yet unregulated pollutants like dioxins, furans, heavy metals, and acid gases, the installation of acid gas control is warranted. Based upon the incremental cost differential for the installation of the acid gas controls and the count of pollutants removed, the cost per ton of pollutants appears reasonable. For an incremental cost of $2.4M (annualized costs), 1589 [SEE FOOTNOTE *] tons of pollutants (SO2, HCl, H2SO4, and dioxins) would be removed. This equates to an incremental cost of $1510/ton or additional pollutants removed.

FOOTNOTE *:

70%	of	321.1 TPY of SO_2	
90%	of	1502.3 TPY of HCl	
90%	of	13.1 TPY of H_2SO_4	-1589 TPY
90%	of	6.4 x 10(E-4) TPY of dioxin	

Subsequent to this meeting, Mr. Richard Grusnick, ADEM, wrote EPA on February 23, 1987, outlining the major area of disagreement between our agencies as it relates to the factors allowed to be considered in making a BACT determination (Attachment III-Feb. letter). In his letter, Mr. Grusnick submitted a copy of EPA's December 1978 policy entitled "Guidelines for Determining Best Available Control Technology (BACT)." Mr. Grusnick's opinion is that this policy supports the factors considered in his draft preliminary determination which he feels provides a large degree of latitude to States in evaluating these factors; specifically:

1. Indirect energy impacts, such as the fact that the solid waste will substitute for fossil fuels otherwise burned, may be considered.

2. Assessing the significance of additional controls based primarily on air quality impact is allowed under the policy.

3. The environmental consequences of the fact that solid waste must be buried if the incinerator is not permitted is a relevant solid waste disposal impact.

4. The localized economic impacts are relevant, such as the low tipping fee presently charged by Huntsville when compared to other parts of the country.

5. The guidance contains implications that BACT which would preclude the operation of a unit would not be expected.

Finally, Mr. Grusnick argues that the 1978 guidelines clearly envisions different levels of control at identical units located in different places based on different circumstances and, in fact, different weighing of relevant factors and identical circumstances. It is his opinion from reading the guidelines that "State judgement and the federal emission standards are the foundations for the BACT determination".

The issues raised in Mr. Grusnick's February 23 letter are fundamental issues with respect to EPA's role to oversee the State responsibility of implementing the PSD rules properly. Although we do not entirely agree with Mr. Grusnick's arguments, we feel it is important to raise these issues with your office and get Headquarters' interpretation on these issues and whether the 1978 guidelines are being interpreted correctly by the ADEM.

Specifically, we would like your office to respond to the following questions:

1. The guidance for determining BACT under PSD dated December 1978, is this current Agency guidance or has this been superseded?

2. Concerning Mr. Grusnick's point that the State's judgment and the federal emission standards are the foundation for the determination, EPA agrees that State judgment is a factor in determining BACT. However, it has been Region IV's opinion that where a State's judgment concerning emission limits is inconsistent with the analysis considering energy, environmental, and economic impacts and other costs that it was our duty to renegotiate changes in the State permit or overturn that permit. Even if the State followed the correct procedures for determining a emission limitation but came to a different conclusion than we would have (i.e., the State emission limitations were less stringent than what EPA would have proposed), Region IV believes it can overturn that permit. Do you agree with Region IV's position? What is your position on Mr. Grusnick's contention? Finally, on what, if any, basis do you believe EPA should overturn a State PSD permit (i.e., not a delegation of the Federal PSD program) pursuant to BACT, and what do you consider to be our burden of

proof?

3. How would you interpret the guidance which contains implications that decisions should not force new projects to the brink of cancellation? It is Region IV's opinion that if an appropriate level of controls represent BACT, we would not require additional air pollution controls just for the sake of control if it wasn't reasonable (i.e., profitability of the project is independent of the analysis). We do not believe that we should allow lesser than appropriate level of control to be installed even if the profitability of the project would be such that the project is canceled. Do you agree with Region IV's opinion?

4. Concerning Mr. Grusnick's items 1, 2, and 3, do you agree with his arguments that alternative build scenarios should be considered in determining BACT as it relates to energy, environmental, and economic impacts and then cost considerations? It has been our position that alternative build scenarios do not enter into the analysis. Do you agree with Region IV's position?

ACTION:

Please review the attached information and provide responses to the issues raised in this memorandum. We would appreciate a response by April 15, 1987, if at all possible.

BACKGROUND:

See attached information.

Attachments