

US EPA ARCHIVE DOCUMENT

THE TEXT YOU ARE VIEWING IS A COMPUTER-GENERATED OR RETYPED VERSION OF A PAPER PHOTOCOPY OF THE ORIGINAL. ALTHOUGH CONSIDERABLE EFFORT HAS BEEN EXPENDED TO QUALITY ASSURE THE CONVERSION, IT MAY CONTAIN TYPOGRAPHICAL ERRORS. TO OBTAIN A LEGAL COPY OF THE ORIGINAL DOCUMENT, AS IT CURRENTLY EXISTS, THE READER SHOULD CONTACT THE OFFICE THAT ORIGINATED THE CORRESPONDENCE OR PROVIDED THE RESPONSE.

*** NOTE: The following text does NOT contain the footnotes that appear in the original text. These footnotes are necessary for a comprehensive understanding of basis for the denial. Please contact your Regional NSR contact if you wish a complete copy of the order. ***

BEFORE THE ADMINISTRATOR
U.S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In the Matter of)
)
Hibbing Taconite Company,)
) PSD APPEAL NO. 87-3
Petitioner)
)
)

ORDER ON PETITION FOR REVIEW

In a petition dated July 30, 1987, U.S. EPA Region V seeks review of a Prevention of Significant Deterioration (PSD) permit determination that authorizes the Hibbing Taconite Company (Hibbing) to modify its furnaces to burn petroleum coke as a fuel. A final decision to issue the permit was made on July 2, 1987, by the Minnesota Pollution Control Agency (MPCA), pursuant to a delegation of authority from Region V. MPCA's action in issuing the permit is subject to the review provisions of 40 CFR 124.19 because the permit is deemed to be an EPA-issued permit under EPA rules. 40 CFR 124.41; 45 Fed. Reg. 33,413 (May 19, 1980).

In its petition for review, Region V raises seven issues: (1) whether Hibbing's analysis of Best Available Control Technology (BACT) for sulfur dioxide (SO₂) is erroneous; (2) whether Hibbing failed to perform a collateral impacts analysis on unregulated pollutants as required by North County Resource Recovery Associates, PSD Appeal No. 85-2 (June 3, 1986); (3) whether the permit violates section 165 of the Clean Air Act (CAA or Act) by allowing Hibbing to modify its facility and operate for nine months without a prescribed emission limit for SO₂; (4) whether the permit limit of 0.024 grains per dry standard cubic foot (gr/dscf) represents BACT for particulate matter (PM); (5) whether Hibbing improperly excluded its property from the ambient air quality modeling; (6) whether analysis of alternative control technologies is required for carbon monoxide (CO) emissions and whether the permit must contain operating requirements for combustion of CO; and (7) whether Hibbing improperly relied on existing data from distant monitors to meet the preconstruction monitoring requirements under 40 CFR 52.21(m)(1).

For the reasons set forth below and pursuant to 40 CFR 124.19, review of issues (2), (6), and (7) is denied. Issues (1), (3), (4), and (5) are remanded to MPCA to conduct additional BACT analyses and to determine the portion of the Hibbing property (if any) that should be excluded from the ambient air determination, consistent with this opinion.

Background

Hibbing's plant crushes taconite ore, concentrates the iron

in the resulting powder, and forms it into pellets for shipment to a primary steel plant. The taconite plant equipment includes ore crushers, concentrating process lines, and pelletizing furnaces. The plant currently uses venturi rod scrubbers as a pollution control technology. Until recently the furnaces burned only natural gas and fuel oil. Now Hibbing plans to switch to petroleum coke as a fuel, thus requiring a physical modification of the plant. The modification will bring Hibbing under the purview of the CAA's PSD requirements for the first time.

Hibbing has submitted a PSD applicability analysis that shows the proposed modification is subject to PSD requirements for emissions of SO₂, CO, and PM.

Discussion

Administrative review of PSD permit decisions is not usually granted unless the permit decision is clearly erroneous or involves an exercise of discretion or policy that is important and therefore should be reviewed by the Administrator as a discretionary matter. 40 CFR 124.19. "This power of review should be only sparingly exercised * * *." 45 Fed. Reg. 33,412 (May 19, 1980). The regulations envision that disputed permit conditions will be resolved for the most part at the regional level. Id. The burden of demonstrating that review should be granted is therefore on the petitioner.

Issue (1): BACT for SO₂

The CAA makes permit issuance contingent on a showing that the proposed facility will employ the Best Available Control Technology (BACT) for each regulated pollutant emitted from it in significant amounts. 42 U.S.C. 7475. Section 169(3) of the CAA defines BACT as an "emission limitation" reflecting the "maximum degree of reduction" that is "achievable" on a "case-by-case basis, taking into account energy, environmental, and economic impacts and other costs." 42 U.S.C. 7479(3). This case-by-case approach provides a mechanism for determining and applying the appropriate technology in each situation.

The Region argues that the BACT analysis for SO₂ is erroneous because Hibbing failed to use the burning of natural gas as its "base" case; it did not factor in the cost savings from the fuel switch; it did not justify rejecting the burning of natural gas as a viable control strategy; and it did not present an engineering analysis demonstrating how the proposed 1.2 lbs/MMBTU limitation for SO₂ emissions would be achieved or explaining why this limitation represents BACT. According to the Region, the first two arguments present the following question: "When economic problems face a facility, to what degree must that facility use cost savings to minimize environmental degradation if the facility switches to a more polluting fuel that reduces operating costs?" Because PSD guidance for BACT does not directly address this issue, the Region asserts that it is appropriate for review by the Administrator.

Neither the PSD regulations nor the PSD guidance differentiate between BACT analyses for plant modifications and BACT analyses for the construction of new plants. Nevertheless, the Region contends that, because Hibbing has been able to continue to operate burning natural gas, it must use natural gas as the base case. I disagree. Hibbing's use of the coke burning plant with existing pollution controls as the base case clearly complied with the criteria for choosing a base case in EPA's guidance document. EPA's Prevention of Significant Deterioration Workshop Manual (October 1980) defines the base case as:

[T]he control strategy that, in the absence of BACT decisionmaking, would normally have been applied. The choice of the base case may be dictated by other existing regulations and/or by company practice standards or choices, if they provide a greater degree of emission reduction than that required by existing regulations (such as new source performance standards, national emission standards for hazardous air pollutants, etc.).

Id. at p. I-B-7. The base case chosen here meets the require-

ments of Minnesota's state permitting regulations, and thus is consistent with this definition. Moreover, Hibbing's choice of the base case is consistent with the practices of other taconite plants in Minnesota. Nothing in the definition requires the base case to be the unmodified plant. The Region has not shown any compelling reason why a permit applicant seeking to modify an existing plant should be subject to a different set of criteria for choosing a base case than a new permit applicant.

Furthermore, I disagree with the Region's argument that Hibbing failed to take into account the cost savings from the fuel switch. An important purpose of any BACT analysis is to provide a comparison of the costs associated with each alternative control technology. This comparison necessarily takes into account the cost-savings associated with less expensive control technologies, as well as the increased costs associated with the more expensive alternatives. Once a proper base case is chosen and alternatives are compared, no additional cost savings analysis is necessary. The Region has not met its burden of showing that the BACT analysis was clearly erroneous or otherwise warrants review with respect to the first two issues. Thus, review is denied on this aspect of the SO₂ BACT issue.

The Region's third argument is that Hibbing failed to justify its rejection of burning natural gas as a viable control strategy. I agree. Hibbing contends that although natural gas was once a financially viable alternative, due to the depressed economic situation in the steel industry, natural gas is now too costly. Nevertheless, Hibbing has been able to continue to operate using natural gas. In my view, Hibbing's ability to continue to operate using natural gas creates a presumption that natural gas is a financially achievable alternative. Of course this presumption can be rebutted, but to do so, Hibbing must provide a detailed consideration of objective economic data. Mere generalizations about the economic woes of the steel industry are not enough. Hibbing's BACT analysis does not contain the level of detail and analysis necessary to overcome the presumption that the natural gas alternative is economically achievable. The BACT analysis shows the cost of burning natural gas is \$1310/ton of SO₂ removed, however, there is no serious discussion of cost effectiveness. Greater efforts must be made by the applicant to show that the natural gas alternative is not economically feasible. This might be done, for example, by comparing the costs of burning natural gas with the costs associated with SO₂ controls used in other similar types of facilities that have gone through PSD review. Thus, on remand, MPCA must ensure that the BACT analysis contains a more detailed economic justification for rejecting the natural gas alternative.

Although the parties have not raised it, one argument that could be made is that the Region, by requiring the burning of natural gas to be an alternative to be considered in the BACT analysis, is seeking to "redefine the source." Traditionally, EPA has not required a PSD applicant to redefine the fundamental scope of its project. However, this argument has not been made, and in any event, the argument has no merit in this case.

EPA regulations define major stationary sources by their product or purpose (e.g., "steel mill," "municipal incinerator," "taconite ore processing plant," etc.), not by fuel choice. Here, Hibbing will continue to manufacture the same product (i.e., taconite pellets) regardless of whether it burns natural gas or petroleum coke. Likewise, the PSD guidelines state that in choosing alternatives to be considered in a BACT analysis, the applicant must look to what types of pollution controls other

facilities in the industry are using. The record here indicates that there are other taconite plants that burn natural gas, or a combination of natural gas and other fuels. Thus, it is reasonable for Hibbing to consider natural gas as an alternative in its BACT analysis. Moreover, because Hibbing is already equipped to burn natural gas, this alternative would not require a fundamental change to the facility.

The Region's last argument with respect to the BACT analysis for SO₂ is that Hibbing failed to present an engineering analysis

demonstrating how the 1.2 lbs/MMBTU limitation for SO₂ emissions would be achieved or explaining why this level represents BACT. I agree. Although BACT is defined as an "emission limitation," it is also, as its name implies, keyed to a specific control technology. In a previous PSD permit decision involving the issue of whether EPA has the authority to prescribe technological process and production requirements, the Administrator stated:

PSD permits and BACT determinations are tailor-made for each pollutant emitting facility. Consequently, the "case-by-case" evaluation of economic costs and energy and environmental impacts that has to be performed as part of a BACT determination is inextricably tied to a specific set of assumptions regarding the type of pollution control technology that will be in place at each facility. Any change in the control technology would require a reevaluation of those impacts and costs, which, in turn, might necessitate a change in the emission level (lower or higher than the previous one). Therefore, unless the type of control technology that will be used to achieve a particular emission limitation is identified and adhered to by the Applicant, the BACT determination is meaningless. Accordingly, an emission limitation in a PSD permit cannot be established without also relating it to the specific type of control technology that will be used to achieve the limitation.

Moreover, EPA regulations require PSD permit applicants to submit "a detailed description as to what system of continuous emission reduction is planned . . . , emission estimates, and any other information necessary to determine that best available control technology would be applied." 40 CFR 52.21(n)(1)(iii)(emphasis added).

Here, the record before me fails to clearly identify the control technology that represents BACT and to explain how MPCA arrived at the 1.2 lbs/MMBTU figure or whether Hibbing will be able to meet the limit using the existing control technology. MPCA's failure to require Hibbing to provide a detailed description of the control technology that represents BACT, including data quantifying its removal efficiency, is clear legal error. Accordingly, on remand, MPCA must ensure that the record identifies the control technology that represents BACT and MPCA must propose an emission limit based on the BACT analysis. If MPCA determines that 1.2 lbs/MMBTU is BACT, the record must specify the control technology upon which the limitation is based and show that such technology will enable Hibbing to meet the 1.2 lbs/MMBTU limit.

Issue (2): Unregulated Pollutants

Region V argues that MPCA's permit review is deficient because there was no consideration of unregulated pollutants as required by North County Resource Recovery Associates, PSD Appeal No. 85-2 (June 3, 1986). In response, MPCA incorrectly argues that North County only applies to PSD permit proceedings for municipal waste combustors. North County interprets an express statutory requirement applicable to all PSD permits, and thus requires the permitting authority to take into account the control technology's impact on unregulated pollutants in every permit proceeding. However, MPCA also responds that it did require Hibbing to analyze petroleum coke for unregulated trace elements of concern. In its response, Region V did not dispute the adequacy of the trace element analysis. Thus, the Region has not met its burden of showing that Hibbing's analysis of unregulated pollutants is clearly erroneous or otherwise warrants review.

Issue (3): CAA's requirement for prescribed emission limits

Region V argues that MPCA erred in issuing a PSD permit that does not prescribe an emission limitation for SO₂ for the first nine months of operation under the permit. The permit must set forth emission limitations for each regulated pollutant that the facility will emit in significant amounts. Section 165(a)(1), 42 U.S.C. 7475(a)(1). Although Hibbing's permit establishes a 1.2 lbs/MMBTU emission limitation for SO₂, Part V.D. of the permit

allows Hibbing to operate its facility for nine months after modification while it designs a plan to achieve and comply with this limit. If after nine months Hibbing cannot achieve the 1.2 lbs/MMBTU limit, it must submit an application for a revised emission limit. As a result, the permit has no emission limit prescribed for SO₂ for at least the first nine months.

Last year in another PSD permit decision (involving the threshold question of whether the Administrator should review the permit), the Administrator stated:

[T]he permit contains a provision allowing a reopening of the BACT determination after construction of the facility has commenced. This provision appears to contravene 165(a)(1) of the Clean Air Act (CAA), which forbids construction of a facility before the emission limitations in the permit have been established. (CAA 169(3) defines BACT as an "emission limitation.")

Similarly, in the instant case, Part V.D. of the permit contravenes section 165(a)(1) of the CAA. Thus, Region V has made a showing of clear error and, on remand, MPCA must ensure that the permit contains an emission limitation for SO₂, based on BACT, for the entire life of the permit.

Issue (4): BACT for (PM)

Region V contends that MPCA erred in setting 0.024 gr/dscf as BACT for PM because the technical document supporting the permit states that the existing scrubbers used by Hibbing "have consistently shown an outlet dust loading of 0.01 gr/dscf when tested by EPA Methods 1-5." Nowhere in this document is the 0.024 gr/dscf limit mentioned.

MPCA's response to the Region is that many BACT and Lowest Achievable Emission Rate (LAER) determinations have been made in the range of 0.02 to 0.05 gr/dscf. Since 0.024 is at the low end of this range, MPCA considered it acceptable. MPCA's argument is unresponsive to the information contained in the technical document and it ignores the site-specific nature of BACT determinations. The argument that many BACT and LAER determinations have been made in the range of 0.02 to 0.05 gr/dscf should not, by itself, be used to justify a less stringent PM limit than is otherwise achievable, taking into account the necessary energy, economic, and environmental impacts. Therefore, on remand, MPCA must provide a detailed justification for not adopting the 0.01 gr/dscf limitation if another less stringent limitation is chosen.

Issue 4: Ambient Air

The Region argues that Hibbing improperly excluded approximately 14,000 acres of its property from ambient air quality monitoring. An EPA screening analysis conducted with receptors located inside the excluded area indicates that the PM and SO₂ PSD increments and the SO₂ NAAQS will be exceeded. To obtain a PSD permit, an applicant must demonstrate that emission increases from the proposed source or modification will not exceed primary or secondary NAAQS or PSD increments.

In ambient air quality monitoring, mathematical models are used to predict pollutant concentrations at specific locations. To obtain a permit, the models need show only that the NAAQS and PSD increments will not be exceeded in the "ambient air." The rules define ambient air as "that portion of the atmosphere, external to buildings, to which the general public has access." 40 CFR 50.1(e). Thus, emissions that exceed the NAAQS or PSD increments on company property to which the public does not have access are not an impediment to permit issuance. EPA policy has allowed exclusion if public access is barred by fence or other physical barrier. A Memorandum of Law issued by the EPA Office of General Counsel interprets the definition of "ambient" in section 50.1(e) as follows:

That definition, in our view, limits the standards' applicability to the atmosphere outside the fence line, since "access" is the ability to enter. In other words, areas of private property to which the owner or lessee has not restricted access by physical means such as a fence, wall, or other barrier can be trespassed

upon by members of the community at large. Such persons, whether they are knowing or innocent trespassers, will be exposed to and breathe the air above the property.

MPCA argues that it inspected the area and found that effective physical barriers preclude public access. In support of this argument, MPCA has submitted photographs that show access roads blocked by gates and other physical barriers. Hibbing correctly argues that the test for ambient air exclusion does not require a continuous fence around the perimeter of the property. Other types of physical barriers can effectively preclude access. However, based on photographs submitted by EPA, there appears to be at least three, possibly four, locations where physical barriers, natural or otherwise, do not exist along the perimeter of the 14,000 acres. I am remanding this issue to MPCA to reconsider whether public access is effectively precluded at the four locations in question. If MPCA does not find effective barriers to public access at the four identified (or any other) locations, MPCA must impose requirements in the permit that would force Hibbing to erect appropriate barriers or to take other measures that would effectively preclude public access. Alternatively, MPCA may identify a different portion (presumably smaller) of Hibbing's property, from which access is effectively barred. The factual issue of the exact area to which public access is precluded may be ripe for a negotiated settlement.

Issue 6: BACT for CO

Region V argues that the BACT analysis for CO is erroneous because it did not contain an analysis of alternative controls and did not include any operational requirements for combustion of CO. I disagree. The Region acknowledges that alternative controls for CO are limited to combustion with excess air and temperature control. Nevertheless, the Region argues that the BACT analysis must include consideration of alternative combinations of these two variables. Both Hibbing and MPCA have provided reasons why the chosen combination of temperature and excess air was the only acceptable one.

The Region also asserts, without citation, that once the combination of temperature and excess air that represents BACT is established, it should be specified in the permit. Neither the CAA nor EPA regulations absolutely require the permit to specify operational requirements in addition to a numerical emission limitation. Both the CAA and EPA regulations define BACT as an "emission limitation." Hibbing's permit contains this required emission limitation and therefore omission of operational requirements was not clear error. Nevertheless, Hibbing must adhere to the control technology identified as representing BACT in its BACT analysis. Review is denied on this issue.

Issue 7: Preconstruction Monitoring

Region V argues that the data used by Hibbing do not meet the preconstruction monitoring requirements of 40 CFR 52.21(m) and EPA's Guidelines on Ambient Monitoring. Section 52.21(m)(1)(iii) of the rules requires applicants to submit continuous air quality monitoring data to determine if emissions of a pollutant would cause or contribute to a violation of a NAAQS or an increment. The data must be gathered over a period of at least a year and must represent at least the year preceding receipt of the application. EPA allows substitution of existing representative air quality data in lieu of having the source generate its own preconstruction monitoring data, provided these data meet the criteria in the "Ambient Monitoring Guidelines for Prevention of Significant Deterioration" (July, 1980).

The guidelines require existing monitoring data to be representative of areas of (1) maximum existing pollutant concentrations, (2) maximum concentration increases from the proposed source or modification, and (3) maximum combined impact from existing and proposed sources. If there are no existing monitors in such areas the guidelines allow monitors located elsewhere to be used on a case-by-case basis. The guidelines provide examples of cases in which it would be appropriate to use existing monitors that are located outside the three areas listed above. Id. at 6-8. In one example, the proposed source is in an

area that is generally free from the impact of other point sources. Id. at 6. The guideline states that representative data may be obtained from a "regional" site, a site that is characteristic of air quality across a broad region. Id. The use of regional sites should be limited to relatively remote areas and should not be used in areas of multisource emissions or areas of complex terrain. Id.

Hibbing maintains that it properly used representative data from a monitoring site that fits the description in this example. Both Hibbing and the monitoring site are located in an area that is generally flat, sparsely populated, and contains one plant (the Clay Boswell plant) that accounts for 70% to 81% of the total SO₂ emissions. Hibbing contends that because this monitoring site is closer to the Clay Boswell plant than is the Hibbing property, it probably has higher pollutant concentrations than the Hibbing property. Nevertheless, the Region asserts that it is "not convinced that Hibbing qualifies for the use of regional monitoring data." The Region maintains that there are eleven SO sources within 65 kilometers of Hibbing, and thus it is a "multisource" area. The Region also contends that because the Clay Boswell plant has two very tall stacks, it is not expected to cause high ground-level concentrations, and thus the monitoring data may not reflect pollutant levels as high as those in the area closer to the Hibbing plant.

In my view, the Region has not met its burden of showing that MPCA committed clear legal error in interpreting or applying example number one of the guidelines. The guidelines are very broad and leave much to the discretion of the permitting authority. Moreover, the examples provided in the guidelines are not intended to be an exhaustive listing of every conceivable situation in which the use of representative data is appropriate. The Region is not able to point to any specific misinterpretation or misapplication of the guidelines. The mere existence of some other sources in the area and the Clay Boswell plant's tall stacks, without more, is not sufficient to show that MPCA's characterization of the area as non-multisource was clearly erroneous.

Moreover, the Region has not shown that MPCA committed a factual error in evaluating the conditions in the vicinity of the Hibbing site and monitoring site. Region V has not contested Hibbing's factual assertions that the Clay Boswell plant accounts for the majority of SO₂ emissions in the area or that the other plants in the area account for very small percentages (no source accounting for more than 3.6%) of overall emissions. In sum, far from demonstrating that MPCA committed clear error by allowing Hibbing to use the regional data, Region V has shown nothing more than it is "not convinced" that Hibbing's use of the regional monitoring data was appropriate. Review is denied on this issue.

Conclusion

The deficiencies in the BACT analysis leave two courses of action open at this juncture of the proceedings. One is to grant review of the permit and enter into the briefing phase contemplated by 40 CFR 124.19(c). However, the deficiencies in the record cannot be rectified through the submission of briefs, and any ensuing decision would likely conclude that the permit should be denied (because of the deficiencies) or that it should be remanded to the permit-issuing authority to allow the applicant to supplement the BACT analysis. Considerations of time favor remanding the permit in the first instance. Therefore, rather than receiving additional briefs on appeal, I am remanding the case to MPCA to: include in the permit an emission limitation for SO₂ based on BACT, for the life of the permit; to provide a detailed economic analysis sufficient to justify rejection of the natural gas alternative; to identify the control technology that the SO₂ limitation is based on and demonstrate that such technology will enable Hibbing to meet the prescribed permit limitation; and to either set the BACT limitation for PM at 0.01 gr/dscf or explain why it rejected this limitation. On remand, MPCA must also determine whether public access is effectively precluded from the four locations identified in this order, and

if not, MPCA must either impose conditions in the permit that would require Hibbing to erect appropriate barriers at these locations or identify a smaller area of its property from which public access is effectively precluded.

MPCA's determination on remand will be subject to review under 40 CFR 124.19, and appeal of its decision on remand will be required to exhaust administrative remedies under se 124.19(f)(1)(iii). So Ordered.

Dated: [July 19, 1989] William K. Reilly
Administrator

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Order on Petition for Review in the matter of Hibbing Taconite Company, PSD Appeal No. 87-3, were sent by First Class Mail to the following persons:

David Kee
Director, Air & Radiation
Services Division
U.S. EPA, Region V
230 South Dearborn Street
Chicago, IL 60604

Sebastian Patti
U.S. EPA, Region V
230 South Dearborn Street
Chicago, IL 60604

Gerald L. Willet, Commissioner
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155

Thomas J. Kalitowski, Executive Director
Minnesota Pollution Control Agency
520 Lafayette Road.
St. Paul, MN 55155

Charles B. Hoffman, Esq.
Pickands Mather & Co.
200 W. Superior St. - Suite 811
Duluth, MN 55803

William Pedersen, Jr., Esq.
Perkins Coie
1110 Vermont Ave, NW
Washington, DC 20005

Dated: Brenda H. Selden, Secretary
to the Chief Judicial Officer