

ILLINOIS POLLUTION CONTROL BOARD  
December 3, 1987

IN THE MATTER OF: )  
 )  
VOLATILE ORGANIC MATERIAL ) R82-14  
EMISSIONS FROM STATIONARY )  
SOURCES: RACT III )

OPINION AND ORDER OF THE BOARD (by B. Forcade):

This matter comes before the Board as part of a series of proposed amendments to 35 Ill. Adm. Code Part 215, Organic Material Emission Standards and Limitations, for the mitigation of ozone pollution. All of the proposed amendments address some aspect of the existing regulations controlling Volatile Organic Material ("VOM") emissions from coating operations. The particular proposal that is the subject of today's Opinion and Order is an amendment to Section 215.204 by the Minnesota Mining and Manufacturing Company ("3M") which specifies Reasonably Available Control Technology ("RACT") for its Bedford Park Facility ("BPF"). 3M provided testimony at the merit hearings on the Illinois Environmental Protection Agency ("Agency") proposed amendments to 35 Ill. Adm. Code 215.204 and 215.207, as well as on its own site-specific proposal. The merit hearings relating to the 3M proposal were held on March 21, 1986; August 4, 1986 and September 3, 1986. Hearings were held on May 8 and 21, 1987, to address the Economic Impact Study (EcIS) of amendments to Sections 215.204 and 215.207 and to accept final merit evidence. 3M cross-examined the EcIS contractor at the May 21, 1987, hearing regarding the emission assumptions. 3M has also provided additional documents (Exs. 98, 121, 122, 123, 124 and 153) in support of its proposal.

On July 16, 1987, the Board proposed regulatory amendments to Sections 211.122, 215.204, 215.205 and 215.207 for first notice comment which were published at 11 Ill. Reg. 12811 and 12835 dated August 7, 1987. Public comments and responses to additional questions in the August 27, 1987, hearing officer order were received from the Agency (P.C. 114 and 119) and from 3M (P.C. 118). On October 1, 1987, the Board proposed regulatory language for second notice and review by the Joint Committee on Administrative Rules (JCAR). The Board's second notice also denied 3M's September 22, 1987 request for extension of the 45-day first notice comment period. The Board's decision was based on the Agency's September 29, 1987 motion to deny 3M's request. The Board decided that 3M's request was untimely and its approval would be unfair since it would allow 3M an additional opportunity to comment on both the proposed amendments and the Agency's timely filed comments. The Board's second notice opinion did not address 3M's site-specific proposed amendment. The merits of 3M's proposed amendment limiting VOMs at its BPF will be addressed in the instant Opinion and Order.

On November 23, 1987, 3M filed a letter requesting the Board defer ruling on this matter (P.C. 121). On December 3, 1987, 3M filed a Motion to Redocket Site-Specific proposal, requesting "the Board to redocket the 3M site-specific proposal and incorporate the existing testimony and comments on the 3M cap into the new docket and defer consideration of the proposal until the Board completes its current RACT rulemaking agenda." That motion is denied. The decision on the regulatory language which 3M is proposing is in fact a RACT decision. Section 172 of the Clean Air Act compels that those decisions be made prior to December 31, 1987.

If, after reviewing this decision, 3M chooses to file future requests for site-specific relief, it is free to do so.

3M's BPF primarily manufactures pressure sensitive tapes for industrial use. In addition, a number of other individual types of tape are also manufactured. In testimony, it was stated that the BPF manufactures 77 individual types of tape incorporating the use of over 100 different types of coatings (R. 3608). 3M has been using Section 215.207, which allows volume-based calculations and averaging across coating lines (crossline averaging) to comply with the Board's existing coating rules. The Board's October 1, 1987, second notice opinion and order incorporates the Agency's proposed amendments to Sections 215.204 and 215.207, which require solids-based calculations and are in accordance with USEPA policy. Because 3M's BPF would be affected by these Agency proposed rules when finally adopted by the Board, 3M proposes a site-specific alternative to compliance with the Agency's proposed amendments using a solids-based calculation. 3M claims that its proposed rule would ease scheduling difficulties at the BPF and would result in less emissions than would be allowed under the Agency's proposed rules (P.C. 114).

3M claims it is complying with Section 215.207 (using cross-line averaging and volume-based calculations) on a daily basis by proper scheduling of its coating lines. Some of 3M's lines are controlled while others are not. The BPF is located in Cook County, a non-attainment area for ozone, and is the largest single stationary source of VOM in the entire state with calculated 1985 VOM emissions of over 9,000 tons (P.C. 113, Attachment 5, p. 5). This represents more emissions than several major automobile plants (P.C. 113, Attachment 5, p. 1). Implementation of RACT in ozone non-attainment areas is required as a part of a federally approvable state implementation plan ("SIP") under the federal Clean Air Act ("CAA") (42 U.S.C. 7401 et seq.). Section 172 of the CAA requires that RACT be implemented at existing stationary sources in the non-attainment areas of those states needing an extension from the 1982 deadline until 1987 to achieve the air quality standard for ozone. Illinois is such a state, having requested the extension in its 1979 and 1982 SIPs.

The definition of RACT is contained in 40 CFR 51, along with the requirements for a federally approvable SIP. However, the

specific parameters of what constitutes reasonably available controls, and, therefore, the levels of control which the states must adopt to insure that RACT is implemented, are not contained in federal regulations. Instead, the United States Environmental Protection Agency ("USEPA") publishes a series of documents entitled "Control Technology Guidelines" ("CTGs"). Each CTG deals with a specific industry category and specifies the means and degree of control applicable to that industry category, which the USEPA requires the state to adopt categorically as part of its SIP. Failure to adopt rules identical to those prescribed in the CTG's, or other ones demonstrated by the individual state as comparable, can mean that the state will have an inadequate SIP, which in turn, can trigger the sanction provisions of the CAA found at Sections 110, 113 and 176 (42 U.S.C.A. 7410, 7413, 7506).

Although there is no mandate in the CAA for requiring the adoption of CTGs by a state, federal policy as articulated in the "General Preamble for Proposed Rulemaking and Approval of State Implementation Plan Revisions for Non-attainment Areas" (44 FR 20372) requires it. In addition, USEPA allows the states until the January after one year from the finalization of a CTG to adopt either the "rules" contained therein, or comparable rules, if sources covered by that particular CTG are within a state's non-attainment areas (44 FR 53761; Ex. 16 & Ex. 132). The CTG, which covers 3M's BPF, for the paper coating industry was published in May 1977 and specifies a limitation of 2.9 pounds of VOM/gallon of coating (lb/gal). This is RACT for 3M's BPF.

At the March 21, 1986 hearing in Bolingbrook, Illinois, Mr. Tom Zosel, 3M, testified and presented for the first time, an alternative proposed rule (hereinafter, the initial 3M proposal) that would be applicable to the 3M BPF (Ex. 98). The initial 3M proposal sought to replace the rate based RACT limit of 2.9 lb/gal with a VOM emissions cap, at its BPF, of 9,000 tons per year (T/yr) and 75,000 pounds per day (lb/d) from all coating operations subject to existing rule 215.207 and all new or modified paper coating lines to be added in the future. 3M claims that their proposal represents RACT for the BPF. This proposal was submitted by the Agency to the United States Environmental Protection Agency ("USEPA") for review. USEPA did not view the initial 3M proposal favorably and stated that the emission limitations proposed by 3M would be a relaxation of RACT level control requirements (P.C. 113, Attachment 5). Following USEPA's review of the initial 3M proposal, the Agency and 3M worked together to develop a revised proposal but could not come to an agreement. On July 30, 1987, 3M proposed an amended site-specific rule (P.C. 114) (hereinafter, the amended 3M proposal) for its BPF which limits emissions of VOM from all existing and new paper coating lines to (i) 8,000 T/yr and 33.33 T/d after December 31, 1987, and to (ii) 6,000 T/yr and 25 T/d after December 31, 1988. The amended 3M proposal would also require 3M to submit actual and allowable (under Section 215.207 (a)) annual emissions data and to submit a corrective plan to the Agency in

the event that actual annual emissions exceed 90 percent of the allowable annual emissions.

The only issue involved in considering the merits of the 3M proposal is the determination of whether the amended 3M proposal is equivalent to a 2.9 lb/gal RACT limitation. The following discussion addresses this issue, as well as the implications for the State of Illinois if the Board should approve a non-RACT rule for controlling VOM in a non-attainment area for ozone.

#### Determination of Equivalence

The initial and amended 3M proposals use the concept of caps on VOM emissions from the BPF. This is a unique approach in that it sets the maximum amount of VOM emissions completely independent of the level of production. Emission limits ("Caps") have been proposed for any one day period, as well as a one year period. This is conceptually different from the rate-based approach to VOM emissions control, which simply specifies the maximum amount of VOM that is allowed in the coatings used. The specification of RACT for coating operations has generally meant the use of the rate-based approach, which specifies the VOM level which must not be exceeded. The RACT level may be met by the use of either compliant coatings or add-on controls which reduce emissions to a level at or below the emissions that would result from the use of compliant coatings. In the rate-based approach, the maximum allowable emissions of VOM are a function of the volume or quantity of coatings used, which in turn, is dependent on types and quantities of each product manufactured.

In order to determine if the amended 3M proposal is equivalent to RACT, as specified by the 2.9 lb/gal rate-based limitation, it is necessary to be able to specify the following:

1. Annual and Daily Caps: The specification in the amended 3M proposal is 6,000 T/yr and 25 T/d beginning December 31, 1988. Higher caps of 8000 T/yr and 33.33 T/d would be allowed during 1988 (P.C. 114). The initial 3M proposal had caps of 9,000 T/yr and 75,000 lb/d (Ex. 98).
2. Production and Emission Control Data: This includes the types and quantities of each coating used to manufacture all products and the VOM capture and control efficiencies of any add-on control equipment on any coating line at the affected facility during the reference period used for showing equivalency. This type of information is generally available as historical data, but will have to be estimated for future years, since production levels vary from year to

year. The data provided by 3M and the Agency contains some of this information (Ex. 98; Attachment 5, P.C. 113)

3. Application of the Rate-Based Limitation to Obtain Baseline Emissions for Comparison with the Cap: Differences of opinion exist with regard to the application of the rate-based limitation to 3M's BPF. One method of applying the rate-based limitation is to require the use of the Agency proposed Section 215.204 and require compliance on a line-by-line basis. A second method is to allow crossline averaging and require compliance in accordance with the Agency proposed Section 215.207. With the second method, it is also necessary to know which coating lines, if any, are not allowed to be included in the crossline averaging procedure.

If none of the coating lines had been equipped with controls, the application of these two methods would require an equal amount of emissions reduction. But, in practice the application of 215.204 on a line-by-line basis will result in greater emissions reductions than the application of 215.207. Section 215.204 would impose controls on all of the uncontrolled lines but will not allow the level of control on overcontrolled lines to be reduced. This represents USEPA's view with regard to application of Section 215.204 in non-attainment areas lacking a SIP demonstration (NALD) (P.C. 113). In addition, the degree of control imposed on the uncontrolled lines can also affect the emissions reductions.

In order to better understand how differences in the method of application affects the emissions at 3M's BPF and the difficulties of comparing them with the emissions cap proposed by 3M, Table 1 is presented below. This table is based on the table prepared by USEPA during their review of the initial 3M proposal (P.C. 113, Attachment 5, page 10). The data used to develop the table comes from 3M and the Agency. 3M estimated their 1985 emissions at 9,081 T/y. Because a carbon adsorber was put into place in 1986 on one of the lines, the Agency's adjusted estimate for actual emissions of 7,405 T/y for the period May 1985 to April 1986 is used in the table. A total of 11 coating lines were considered. Three of these lines do not have any add-on controls.

Table 1

| Conditions  | Emissions (T/y) |             |
|---|-----------------|-------------|
|   | Estimated       | Reductions* |
| 1. Actual for period 5/85-4/86  | 7,405           | --          |
| 2. If 3 uncontrolled lines minimally complied with 215.204, controls on remaining lines were not relaxed, and level of production is the same as for period from 5/85 to 4/86 | 4,112           | 3,293       |
| 3. If 3 uncontrolled lines receive 90% control, controls on remaining line are not relaxed, and level of production is the same as for period from 5/85 to 4/86               | 3,222           | 4,183       |
| 4. If minimally complying with 215.207 using crossline averaging and a mass rate of 2.9 lb/gal, and level of production is the same as for period from 5/85 to 4/86           | 8,329           | - 924       |
| 5. Initial 3M proposal with no specification on level of production   | 9,000           | - 1,595     |
| 6. Amended 3M proposal for 1988 with no specification on level of production  | 8,000           | - 595       |
| 7. Amended 3M proposal after 1988 with no specification on level of production  | 6,000           | 1,405       |

\*Reductions are the amounts below the actual of 7,405 T/yr. Negative reductions are the amounts above the actual.

Conditions 1, 2, 3 and 4 are the possible emissions baselines against which the 3M proposals might be compared. However, these conditions are directly linked with the level of production. Any increase or decrease in production would increase or decrease, respectively, the amounts of coatings used. This in turn, would increase or decrease, respectively, the estimated emissions listed in the table. Thus, depending on the choice of baseline condition and a specified level of production, the 3M caps (conditions 6 and 7) may or may not be equivalent to RACT.

For the reference period (5/85 to 4/86) considered in the

above table, the emissions allowed under the Agency's proposed 215.207 (with crossline averaging) of 8,323 T/y (i.e. Condition 4 in Table 1) is higher than the 3M proposed caps of 8,000 T/y in 1988 and 6,000 T/y after 1988. However, decreases in production or changes in coating lines subject to crossline averaging could result in baseline emissions under proposed Section 215.207 that are below the level of the 3M proposed annual caps.

The application of Section 215.207 to 3M's BPF requires that compliance be shown based on a daily average (R. 5343). Section 172 of the CAA requires that RACT be implemented in non-attainment areas by December 31, 1987. USEPA's interpretation of this requirement is reflected in its policy that also requires compliance with RACT on the basis of a 24-hour averaging period (Ex. 99). 3M's amended proposal provides a daily cap of 33.33 T/d in 1988 and 25 T/d after 1988. In order to calculate baseline emissions for comparison with these proposed daily caps, the level of production and determination of the coating lines subject to crossline averaging is required. Since 3M has not provided sufficient information to calculate baseline emissions on a daily basis, the Board cannot determine if the daily caps are better than RACT.

Thus it becomes clear that the concept of an emissions cap, without being linked with a specific production level, as presented by 3M, cannot be evaluated on a comparative basis with a RACT level which is based on the rate based concept. It is analogous to comparing apples with oranges. Thus, the 3M proposed caps would have to be viewed as having been made arbitrarily just to provide them with the flexibility needed to accommodate the scheduling difficulties that they face. The Board must conclude that the amended 3M proposal is not RACT.

The Board's conclusion is supported in the record by the following statements made by USEPA regarding the 3M proposal:

1. "If production will in fact rise at the plant, Illinois could place a cap on the company in addition to retaining the 2.9 lbs/gal rate limit. There are no assurances there will be such growth and any company should (sic) use this same logic when requesting a bubble or SIP relaxation. If approved, EPA would be perceived as granting 'emission rights.'" (P.C. 113, Att. 5, p. 2)
2. "All of EPA's past SIP policy has been that emission limits should be on a rate basis. SIP's do not normally regulate production. If production goes up, sources are allowed to emit more. If production goes down, the source must emit less. This eliminates any credit

for downtime or reduced capacity. The EPA's control technique guidelines generally specify limits in terms of a rate or percent reduction. If production does (sic) down, a source cannot turn off control equipment such as an afterburner or carbon adsorber nor can the source increase its pounds of VOC in each gallon of paint coating, or ink if it paints less. 3M's proposal is not RACT because three lines are not controlled." (P.C. 113, Att. 5, p. 9)

An additional concern with 3M's amended proposal with regard to the annual caps is that USEPA's policy prohibits averaging periods longer than 30 days (Ex. 99(b)). "Extended averaging" is defined by USEPA as greater than 24-hour averaging (Ex. 99(b)). Extended averaging is prohibited by USEPA policy "unless it can be shown that compliance on a daily basis is not technically or economically feasible" (Ex. 99(a)). No such showing has been made in this case (P.C. 113, Att. 5, p. 9). In addition, USEPA's policy "prohibits extended averaging in areas lacking approved SIP's until the SIP has been revised demonstrating ambient standards attainment and maintenance of reasonable further progress (reflecting the maximum daily emissions from the source)" (Ex. 99(a)). As already noted, the 3M plant is located in an area which lacks an approved 1982 ozone SIP.

Although 3M's amended proposal contains caps on a daily basis, the Board has several additional concerns with the proposed daily caps. One concern is that the daily caps are not equivalent to the respective annual caps. The daily cap in the amended 3M proposal is 33.33 T/d for 1988. The annual cap for 1988 is 8,000 T/yr. The plant is in operation a minimum of 360 days per year (Tr. 5311). Therefore, based on the annual cap, which is considered to be RACT by 3M, and 360 days of operation, the "daily cap equivalent of RACT" is 22.22 T/d. It appears that the proposed daily cap of 33.33 T/d exceeds the "daily cap equivalent of RACT" by 50%.

Another concern regarding the proposed daily caps is that 3M has never focused on whether these caps would be RACT. In fact, it appears that the intent of 3M's proposal is for the yearly, and not the daily, caps to be consistent with RACT (Ex. 99(a)). 3M has never argued that use of the daily caps would improve the environment.

Since Section 172 of the CAA requires implementation of RACT by December 31, 1987, the Board would have to conclude that RACT for the 3M BPF is 33.33 tons per day under all operational levels in order to approve the site-specific rule. There is no evidence in the record to support a 33.33 ton per day limit as constituting RACT for 3M at all operational levels.



In addition, no showing has been made that the use of control equipment and/or compliant coatings is technically infeasible or economically unreasonable (P.C. 113, Att. 5., p. 9). The record is void of such arguments. In fact, 3M has indicated through its agents that it would comply with the Agency's proposed Section 215.207 (Tr. 5339; Tr. 5340; P.C. 114; & P.C. 118). Generally, the Board grants site-specific relief from the requirements of general regulations only upon a showing that it is not technically feasible or economically reasonable to comply with the general regulations. A recent appellate court decision has upheld this standard.

In Central Illinois Light Company v. Illinois Pollution Control Board, No. 3-86-0841 (3d Dist. July 24, 1987), the Third District affirmed the Board's denial of a site-specific rule-making proposal of Central Illinois Light Company (CILCO).<sup>1</sup> CILCO argued on appeal that the Board did not properly apply the statutory criteria in its evaluation of the record. The Third District rejected this position and stated:

After a thorough review of the evidence presented at the hearing in this case, we conclude the Board's determination that CILCO failed to demonstrate compliance is technically infeasible and economically unreasonable are amply supported by the record. As the Board pointed out in denying a motion by CILCO for a rehearing, these determinations regarding technical feasibility and economic reasonableness alone are sufficient to support the decision of the Board.

(Id. slip op. at 10).

The Board believes the rationale for the CILCO decision is equally applicable here. Since 3M has not demonstrated that compliance with the Agency's proposed amendments to 35 Ill. Adm. Code Part 215 is technically infeasible or economically unreasonable, the request for site-specific standards will be denied.

The Board also recognizes that the December 31, 1987, deadline for ozone non-attainment areas is fast approaching and failure to meet the Clean Air Act's requirements for ozone attainment could have serious consequences for Illinois. Some of these potential consequences are as follows:

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<sup>1</sup>The Board notes that CILCO has filed a Petition for Leave to Appeal the Third District's decision with the Supreme Court of Illinois. That petition is currently pending under Supreme Court Docket No. 65777.

1. In accordance with Section 110 of the CAA, the USEPA Administrator may prepare and publish proposed regulations setting forth an implementation plan for ozone in Illinois' non-attainment areas;
2. In accordance with Section 113 of the CAA, the USEPA may assume federal enforcement of its implementation plan in Illinois;
3. In accordance with Section 176 of the CAA, the administrator may decide not to approve any projects or award any grants authorized by the CAA for the state of Illinois; and
4. In accordance with Section 176 of the CAA, the Secretary of Transportation may decide not to approve any projects or award any grants for Illinois under Title 23 other than for safety, mass transit, or transportation improvement projects related to air quality improvement or maintenance.

The Board has given serious consideration to the amended 3M proposal and acknowledges that the proposal has benefits, but only under certain conditions. Should production increase, a cap on emissions is likely to increase the benefits to the environment. However, the amended 3M proposal completely uncouples emissions limitations from production levels in order to have flexibility in production scheduling. Unfortunately, 3M has not presented sufficient information to convince the Board (1) that compliance with the Agency's proposal is technically infeasible or economically unreasonable or (2) that their proposed site-specific rule is equivalent to or superior to RACT. Therefore, the Board denies 3M's amended site-specific proposal.

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1985, ch. 111-1/2, par. 1041, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements.

IT IS SO ORDERED

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 3<sup>rd</sup> day of December, 1987, by a vote of 7-0.



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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board