

ILLINOIS POLLUTION CONTROL BOARD
August 21, 1985

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

RESOLUTION IN RESPONSE TO JCAR OBJECTION

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

This resolution and order constitutes the Pollution Control Board's ("Board") formal refusal to modify the RACT-III, Subpart Q rules in response to the objection of the Joint Committee on Administrative Rules ("JCAR") dated July 25, 1985. This response is made in accordance with Section 7.07 of the Illinois Administrative Procedures Act ("APA"). A notice of refusal to modify will be timely filed with the Secretary of State for publication in the **Illinois Register**.

The JCAR objection of July 25, 1985, reads, in pertinent part, as follows:

The Joint Committee objects to the imposition of the requirements of Subpart Q of the Pollution Control Board's rules entitled "Organic Material Emission Standards and Limitations" (35 Ill. Adm. Code 215) on those plants located outside of "nonattainment" counties was accomplished without the Board taking into account the economic reasonableness of measuring and reducing "Organic Material" emissions, because the rule violates Section 27(a) of the Environmental Protection Act. [sic]

The rationale for the objection is summarized as follows:

1. The federal Clean Air Act (CAA) only requires the application of RACT-III in nonattainment areas;
2. The costs and benefits of the application of RACT-III in nonattainment areas versus statewide application was not addressed in the Economic Impact Statement (EIS);
3. The promulgation of Subpart Q violates Section 27(a) of the Act which requires the Board to consider the "economic reasonableness" of regulations. Because the anticipated air quality improvement do "not appear to be significant", the record shows no "economic benefits"

received by the State by imposing RACT-III beyond nonattainment areas;

4. The cost estimates of the Board are seriously questioned by the industry which believes that they are understated by a magnitude of five times; and
5. The Board could not have analyzed "economic reasonableness" of the rules since the exact number of plants regulated under the rules is not precisely known and emissions data are not known from individual plants in the state.

To state that Section 172 of the CAA only requires application of RACT in nonattainment areas, thus restricting the Board's focus on this aspect of Section 172, misses the main purpose of Part D; to achieve attainment for ozone in all areas of a state through an approved State Implementation Plan (SIP). Section 172 requires that "reasonably available control technology" (RACT) be implemented at existing stationary sources in the nonattainment areas of those states needing an extension from the 1982 deadline until 1987 to achieve the air quality standards for ozone. Illinois is such a state, having requested the extension in its 1979 and 1982 SIP, and as of the date of writing, having nine counties designated as nonattainment areas for ozone.

As a precondition for the construction or modification of any stationary source in any nonattainment area, Section 172 requires that the SIP must provide for the achievement of "reasonable further progress" towards attainment. "Reasonable further progress" is defined in Section 171 as:

"annual incremental reductions in emissions of the applicable air pollutant (including substantial reductions in the early years following approval or promulgation of plan provisions under this Part and Section 110(a)(2)(I) and regular reductions thereafter) which are sufficient in the judgment of the Administrator, to provide for attainment of the applicable national ambient air quality standard by the date required in Section 172(a)."

Exhibit 16 from R82-14, RACT-III, outlines the United States Environmental Protection Agency's (USEPA) criteria for an approvable SIP. They are as follows:

"The plan must show attainment of the national ambient air quality standards (NAAQS) by 1987, the plan must include an approvable inspection/maintenance (I/M) program for all urban areas over 200,000 population, the plan

must show reasonable further progress (RFP) toward attainment, and the plan must include schedules for the adoption and implementation of any incomplete SIP elements."

The reductions necessary for a showing of attainment by 1987 and of "reasonable further progress" are not limited to nonattainment area sources because of the transport of ozone and ozone precursors from one area to another. The USEPA, IEPA, the Board and even industrial representatives recognize the reality of ozone and precursor transport and, therefore, any plan for achievement of attainment must take into account this concept.

The Board has conducted three RACT proceedings, over the years, to comply with the requirements of the CAA and to achieve attainment for ozone throughout the state. The rules promulgated in these proceedings are incorporated into Illinois' 1979 and 1982 SIP and subsequent revisions. Any program or strategy for achieving ozone attainment must take into account the state's full regulatory history in this area. The Board takes official notice of the records, opinions and orders of its previous proceedings, RACT-I (R78-2,3) and RACT-II (R80-5), in promulgating rules in the RACT-III proceeding. Clearly the new RACT-III rules will be analyzed by the USEPA in the context of existing rules for the control of volatile organic material (VOM), and in the context of the state's complete strategy for achieving ozone attainment by 1987. Therefore, it is appropriate and necessary to analyze the Board's proposed RACT-III rules in light of RACT-I and II.

On July 12, 1979, the Board adopted RACT-I on a statewide basis. In the RACT-I Opinion, the Board explained at some length the photochemical reaction process by which hazardous and other oxidants interact with volatile organic material to form ozone, the importance of meteorological factors in this process, and the complex phenomena of urban scale, mesoscale, and synoptic scale ozone transport. (R78-3,4 Opinion; pp. 4-10.) The Board at that time concluded that the transport phenomena, the necessity of accommodating future growth, the equitable application of the rule, the interaction of RACT-I rules with other regulations (e.g., "offsets" between sources 100 miles apart), and the general inaccuracy of modeling and prediction techniques all supported a decision that RACT-I be applied to stationary sources throughout the state. (Ibid., pp. 3-10.)

On December 30, 1982, the Board adopted RACT-II utilizing a phased approach, with ultimate statewide application. The RACT-II Opinion addressed in detail the issue of transport, the implication of Illinois nonattainment sources contributing to ozone violations in Wisconsin, the contribution of contiguous attainment county sources to violations in nonattainment counties, and the need for statewide application of RACT controls. On November 6, 1980, Mr. Steve Tamplin, Manager of IEPA Air Quality Planning Section, provided testimony on the

transport of hydrocarbon emissions from rural and small urban attainment areas into nonattainment areas; the existence of high ozone levels in many rural, small town and small urban areas themselves; the desirability of retaining a margin for growth of new industries rather than allowing existing emission sources to emit up to the maximum limit; the avoidance of shifting regulatory requirements; the equitable treatment of industries across the state; and the conservation of petroleum resources (RACT-II, R. 837-949).

On August 9, 1982, Mr. Tamplin provided essentially the same testimony in the RACT-III proceeding regarding air quality monitoring, modeling, and ozone and hydrocarbon transport, Illinois' contribution to Wisconsin nonattainment, isolated rural ozone violations, the need to provide room for growth in the SIP, and contiguous county contributions to nonattainment (R. 40-63).

The precise dynamics of hydrocarbon transport and ozone formation are not fully understood even by experts in this field. Thus, it is difficult to say with precision how much and how far ozone or precursors are transported. Nonetheless, it is obvious that county lines do not create "pollution barriers." This is especially true for a pollutant such as ozone which is formed in a mixing zone far above the emission source and may travel anywhere from 5 to 1,000 miles. Despite the admitted difficulty in quantifying the impact of transported hydrocarbons, ozone transport is an observed and documented phenomena in Illinois. (See R. 57; Opinion of the Board R78-3/4, pp. 6-8; 1982 SIP for Ozone and Carbon Monoxide, pp. III-16; 1981 Annual Air Quality Report.) For example, rural Macoupin County has few industrial VOC sources, and yet five violations of the 0.12 ppm primary health standard were monitored in Macoupin County in 1981. It is generally accepted that these violations are the result of emissions generated in the St. Louis Metropolitan Area and transported 30 to 80 miles to the Nilwood monitoring station. (See 1982 SIP Revision for Ozone and Carbon Monoxide, pp. III-16, 17.)

Macoupin County is an example of transport from an urban nonattainment area to a rural area. However, Illinois also has examples of transport from rural attainment areas to suburban small town nonattainment areas. Notably, emissions from Will County are implicated in the nonattainment problems experienced in DuPage County. Will County is designated as attainment although it contains five synthetic organic chemical and polymer manufacturing (SOCPM) plants which would be controlled through application of Subpart C regulations. On the other hand, neighboring DuPage County, which, at times, is directly downwind from Will County, is designated nonattainment and has only three potential SOCPM plant sources. Clearly, transport of some scope is implicated in nonattainment problems in Illinois. From the location of the emission sources in these examples, there is also an indication that emissions generated in counties surrounding nonattainment areas are the most likely to contribute to

nonattainment areas' problems. Thus, minimally, an effective ozone strategy must obtain emission reductions in the counties immediately surrounding nonattainment counties, as well as in nonattainment counties themselves.

The Board, during the cumulative course of all three RACT proceedings, has been persuaded that a long-term ozone strategy must address major RACT sources all over the state. Originally, 22 counties were designated as nonattainment for ozone. Illinois experienced significant ozone violations in the late 1970's and in 1980 (Exhibit 6). Data from 1981 and 1982 showed improvements which resulted in redesignation of a number of counties. Presently, nine counties are designated nonattainment for ozone. However, in 1983 Illinois experienced an increase in ozone violations (Exhibit 67). Clearly, the ozone situation in Illinois is highly variable and difficult to predict. The relatively low number of violations in the early 1980's has been attributed to a number of possible factors including a slump in Illinois industrial activity, meteorological conditions not conducive to ozone production and implementation of RACT controls. Despite these vagaries, the State's ozone strategy, as proposed to USEPA, has been based on statewide application of RACT controls. This is consistent with the observed transport phenomenon, the necessity to provide room for industrial growth in the SIP, and the need for a comprehensive approach to achieving and maintaining ozone attainment by 1987.

Given the fact that major VOM emission sources are scattered across the state and are in many instances located directly upwind from areas that have in the past and are likely in the future to experience ozone violations, the Board finds that a prudent long-term ozone strategy must include statewide application of RACT-III controls.

The Board would like to point out that many of the ozone control options, other than RACT-III, are, for various reasons, not available to the State to show "reasonable further progress" or to achieve statewide attainment by 1987. While there has, after great deliberation, been a state commitment to inspection and maintenance, actual implementation of the program may not actually occur until June of 1986. The IEPA is currently preparing a regulatory proposal for the Board. Stage II vapor recovery, which was docketed as a rulemaking before the Board, was disallowed until there is a federal mandate, as a control option by recent legislation and consequently dismissed. Finally, the Board chose not to adopt the IEPA's "Generic Rule" in its proposed form, thereby leaving non-CTG major stationary sources presently uncontrolled. The Board merely wishes JCAR to view the RACT-III rules in the broader context that the state and federal regulatory agencies must view them.

Finally, it is apparent that the USEPA recognizes the reality of transport of hydrocarbon and ozone and will take that into account in evaluating SIP revisions. This position is

illustrated by the USEPA's notice of proposed rulemaking, dated February 3, 1983, regarding "Compliance with the Statutory Provisions of Part D of the Clean Air Act" (48 Fed. Reg. 4972). These proposed rules outline a procedure for exempting a nonattainment area from sanctions, if there is: 1) a demonstration of compliance with all requirements for the 1979 implementation plan for attainment; and 2) a demonstration that the area would attain the primary NAAQS level except for the effect of transported ozone air pollution in excess of NAAQS (48 Fed. Reg. 4975). Another clear indication of federal recognition of ozone transport is the February 3, 1983 Notice of Proposed Rulemaking on Approval and Promulgation of Implementation Plans; Illinois 1982 Ozone and Carbon Monoxide Attainment Plan (48 Fed. Reg. 5110), which cites, as a major deficiency and basis for disapproval of the Illinois 1982 Ozone SIP revision, the failure to demonstrate attainment in Southeast Wisconsin (Kenosha and Racine counties). While Illinois refutes the responsibility for demonstrating attainment for these areas, it does not contest the fact that emission from Northeastern Illinois sources contribute significantly to the ozone levels in Southeast Wisconsin (Exhibit 61, Attachment 6).

JCAR's objection is based on the misconception that costs of compliance with Subpart Q vary depending on whether a facility is located in an attainment or nonattainment area. Industrial representatives have argued that it is less cost-efficient or reasonable to control emissions in clean areas than it is to control in dirty areas. This approach attempts to compare the cost of control measures to the environmental benefit or air quality improvement. While in some circumstances it may be desirable to attempt to quantify the costs and benefits that may result from adoption of a particular rule, in this case such a comparison can be made only in a simplistic and ultimately unrealistic fashion. To do so one must assume that emission reductions only benefit the county or immediate vicinity in which the emissions are generated. Under this type of analysis, it is self-evident that it will be difficult to measure the health or welfare improvement resulting from reduced ozone in attainment areas, since by definition these areas do not have acute or measured ozone problems even with RACT-III. The obvious flaw in this analysis is that it attributes no "benefit" to controls applied in attainment counties for reductions in ozone which occur in neighboring or even distant counties.

The fact is that experts in the field agree that the data does not exist at this time which will enable us to quantify the impact and thus the benefit of hydrocarbon reductions generated in one county on another county. However, as stated earlier, it is clear that the impact in some instances is quite significant. A realistic cost-benefit analysis of RACT-III based on air quality improvement would have to account for the "real world" complexity of ozone transport and formation. Unfortunately, at this time this type of analysis is impossible to make.

In the absence of the data necessary to perform a useful air quality cost-benefit analysis for RACT-III, the next best approach is to analyze the cost-benefit of RACT-III controls on a dollar-per-ton of reduction basis. This is the basic approach taken in RACT-I and II and the EcIS in RACT-III. On a dollar-per-ton basis, the cost of controls within a given category is generally the same regardless of where the source is located. Using the dollar-per-ton basis, the cost of Subpart Q is, on the average, \$334/ton. This cost per ton compares favorably with other RACT-III categories, as well as the generally less expensive RACT-II controls.

The Board believes that it is inappropriate to segment the economic reasonableness analysis into attainment and nonattainment contexts. As previously stated, costs of compliance do not change from one area to another. The scope and burden in a general rulemaking is not individualized. Compliance costs and emissions data from each plant impacted by a general rule cannot always be taken in account. The Environmental Protection Act (Act) and Board regulations provide mechanisms of relief for facilities that are in unique positions of hardship through variances and site-specific regulation. These options are always available. JCAR may disagree with the Board's findings of economic reasonableness but it is inaccurate to say that we have failed to analyze the economic reasonableness of the rules contained in Subpart Q. The Board, therefore, refuses to modify the rule in accordance with JCAR's objection because it goes to the substantive and technical merits of the rule in question.

The public comment of Northern Petrochemical (P.C. 59) claims that Subpart Q compliance costs were understated by a factor of five times. JCAR relies on this statement as a basis for objecting to the Subpart Q rules. However, testimony in the record by a private inspection service (and not the IEPA) indicates that they would charge \$1.00 to \$1.50 per component for such an inspection (R. 1977). The estimate presented in Public Comment 59 does not provide enough information to adequately evaluate the factors that went into the estimate. Additionally, the estimate is directly refuted by sworn testimony in the record by a private consultant engaged in this type of inspection service. JCAR's reliance on this comment as a basis for its objection appears to be a reweighing of the evidence by the Committee. The Board refuses to modify the rule in accordance with JCAR's objection because it goes to the substantive and technical merits of the rule in question.

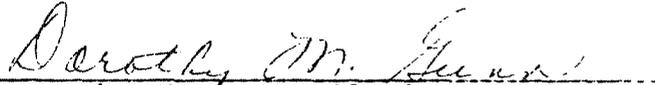
As a final note regarding the quantification of costs and benefits, such analyses are inherently biased against the benefits of pollution control. As stated in the Opinion of the DENR Economic and Technical Advisory Committee (ETAC) which was extensively relied on by JCAR in its objection, only one "benefit" parameter was subject to "monetization." This was the projected improvement in Illinois' crop yields resulting from a

projected reduction in ozone concentrations. However, this was not the only tangible benefit from the regulation recognized in the ETAC Opinion. Beneficial effects in human health and vegetation, as well as the additional safety factor of insuring against possible future increases in ozone concentrations and possible adverse health impacts were considered tangible, but unquantifiable given the scope of the EcIS. Costs of compliance are more readily quantified in economic terms. This bias, in combination with the nonrecognition of transport of ozone (and transport of benefits through ozone reduction) from one county to another, skew the EcIS analysis. JCAR has chosen to view the regulatory record in an extremely narrow perspective. The Board believes that this constitutes an inappropriate reweighing of substantive evidence and, therefore, will proceed to final notice with the Subpart Q rules as proposed.

Board Members Walter Nega and J. Theodore Meyer dissented.

IT IS SO ORDERED

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Resolution and Order was adopted on the 21st day of August, 1985, by a vote of 5-2.


Dorothy M. Gunn, Clerk
Illinois Pollution Control Board