

ILLINOIS POLLUTION CONTROL BOARD  
November 8, 1990

IN THE MATTER OF: )  
 )  
LIMITS TO THE VOLATILITY ) R88-30(B)  
OF GASOLINE ) (Rulemaking)  
 )

PROPOSED RULE. SECOND NOTICE

OPINION AND ORDER OF THE BOARD (by J.D. Dumelle):

On July 19, 1990 the Board proposed for First Notice a rulemaking to limit the volatility of gasoline sold in Illinois. The R88-30 subdocket (B) proposal would limit gasoline sold in Illinois during the summer (i.e., June 1 to September 15) to 9.0 pounds per square inch (psi) Reid Vapor Pressure (RVP). The Board ordered that an Economic Impact Study (EcIS) be undertaken by the Department of Energy and Natural Resources (DENR). The EcIS was delivered to the Board by DENR on June 27, 1990. The Board today adopts the subdocket (B) proposal, with modifications noted below, for Second Notice and directs its submission to the Joint Committee on Administrative Rules (JCAR).

The subdocket (B) proposal was published in the Illinois Register on August 10, 1990, 14 Ill. Reg. 12697, thereby beginning a forty-five (45) day public comment period. Public hearing was scheduled for September 17, 1990. Four (4) public comments were submitted prior to hearing. Hearing was conducted on September 17, 1990 at which four (4) organizations presented testimony. Four (4) post-hearing comments were submitted.

PROCEDURAL HISTORY

The Board first notes that regulations pertaining to gasoline volatility were introduced in December of 1988. The proposal was subsequently split into two dockets [(A) and (B)]. While docket (A) did proceed to Final Adoption, the Board was forced to undertake an emergency rulemaking effective only for the July and August of 1990 due to some late-filed language from the USEPA, the acceptance of which was necessary for federal approval. That is, docket (A) as a finalized version was unenforceable because the language contained in the regulation did not comport with federal requirements and therefore could not be adopted as a revision to the State Implementation Plan (SIP). Consequently, an emergency rule was promulgated. This rule adopted the necessary federal language and therefore regulated the gasoline volatility requirements in Illinois for the summer of 1990.

Since the inception of the Board proposal in January of 1989, Federal rules regarding gasoline volatility have been

finalized. These provisions mandate that as of June 1, 1992, gasoline sold at retail in Illinois will be limited to a volatility standard of 9.0 psi. These provisions are applicable from June 1 to September 15 for 1992 and each year thereafter.

As a result, the State of Illinois is in a position whereby gasoline volatility in the summer of 1991 is currently left unregulated with the exception of the Phase I standard of 10.5 psi. In large measure, this is why the Board went to First Notice prior to any merit hearings. As the First Notice Order stated:

The Board initiates this proposal at this time to begin the rulemaking process pursuant to the Administrative Procedure Act as well as to allow the potentially affected parties sufficient time to argue substantive issues and possibly adjust to new standards.

(R88-30(B), Board Order, July 19, 1990, Pg. 1)

In short, the Board was concerned that a rule be in place for the summer of 1991. Further, the Board desired to formulate a rulemaking in which all of the participants would have an opportunity to voice their concerns and recommendations. Finally, the Board initiated this rule on July 19, 1990 so that industry would be allowed sufficient lead time in order to comply with the prospect of new regulations should they be adopted.

#### HEALTH EFFECTS

At the outset the Board notes that it adopts those determinations made regarding health and environmental effects in docket (A) as well as the emergency rule. Put another way, it remains the Board's determination that ozone pollution is one of the nation's most serious and complex air pollution problems. Ozone is a photochemical oxidant and the major component of smog. Unlike other pollutants, ozone is not emitted directly into the atmosphere but is formed through chemical reactions among precursor emissions (volatile organic compounds or VOCs, nitrogen oxides, carbon monoxide and other compounds) in the presence of sunlight. The rate of ozone production is increased when atmospheric temperatures are warmer.

Scientific data has demonstrated the effect high levels of ozone have on the general public. Ozone severely affects individuals with chronic heart, lung, and circulatory system diseases. Otherwise healthy individuals who exercise while ozone levels are high can experience reduced functioning of the lungs, leading to chest pains, coughing, wheezing, and pulmonary congestion. In addition to the health effects, ozone has been estimated to cause two to three billion dollars worth of crop

damage nationally each year. Also, because the Chicago area has exceeded the ozone standard repeatedly, USEPA has imposed a construction ban on the Chicago non-attainment area which prohibits the construction or modification of major air pollution sources and thus restricts the economic development of the Chicagoland area.

#### ECONOMIC IMPACT STUDY (EcIS)

As mentioned above, DENR submitted its EcIS on June 27, 1990. The main purpose of the EcIS was to explore whether a 9.0 psi standard in Illinois would be economically or technically unreasonable, or pose an economic hardship in terms of supplying gasoline to Illinois. DENR concluded that a reduction from 9.5 psi to 9.0 psi would result in a statewide reduction of approximately fifty-six (56) tons per day (TPD) of volatile organic compounds (VOC). DENR estimated the cost of this reduction to be approximately 1.5 cents per gallon. At hearing these figures were undisputed by any participant.

#### ISSUES PRESENTED AT HEARING

The first presentation came from Cheryl Newton, a representative from the USEPA. The USEPA was supportive of both the industry and the Board in their efforts to reduce VOC emissions in order to achieve the national ozone ambient air quality standard. In spite of the fact that the emergency rule promulgated by the Board was only enforceable from August 17 to the 31st in 1990, evidence gathered by federal samplers indicated that the petroleum industry had adhered to the regulation throughout the control period. According to USEPA, the majority of samples not only met the state's 9.5 psi standard, but much of the fuel tested was below 9.0 psi as well. Only two violations were detected and both were traced to a distributor who had violated the federal RVP limit before. (R. at 12-13).

Primarily due to the health benefits associated with the reduction of VOC compounds, the USEPA recommended that the Board adopt a future control period of May 1 to September 15. Yet USEPA also stated - both in oral testimony and in public comment form - that enforcement regarding retail outlets and other end users should be delayed until June 1st. Not only would this make the state and federal rules consistent, but it will reduce any undue burden on the end-users. Finally the USEPA recommended that the Board should adopt the 0.3 psi testing tolerance which was included in phase two of the federal rule.

Next to testify was Maggie Robbins, representing the proponent of this rulemaking, the Chicago Lung Association (CLA). In its brief testimony the CLA encouraged the Board to move ahead with this proposal. The CLA also submitted a gasoline industry newsletter (P.C. #69) which indicates that several

petroleum companies nationwide are currently marketing reformulated gasolines which are low in volatility in very tight markets (R. at 17). The CLA pointed out that these marketing strategies do not conform to ASTM distribution areas nor do they correlate to pipeline distribution areas. In retort, the representatives from the petroleum companies pointed out that these were special marketing strategies which were not required by law. As such, if spot shortages or other unforeseen events occurred, those companies participating in those marketing strategies could alter their course without the fear of any enforcement action.

The last to testify were Daniel Moenter and David Sykuta, representing the Illinois Petroleum Council (IPC). IPC is concerned that a 9.0 psi standard would pose a series of distribution problems for petroleum companies. They are not as concerned about the 9.0 psi standard per se; rather, their worries stem from the fact that neighboring states - under phase I of the federal rule - will have psi rates of 10.5 and 9.5. (R. at 35). Missouri, for instance, will be set at 9.5 psi whereas states such as Michigan and Wisconsin will be at a 10.5 psi rate during the control period proposed for Illinois in the summer of 1991. Should the proposal be adopted, then, Illinois would have a lower psi standard than all of the adjacent states.

The IPC points out that because the reductions that have already taken place constitute an 80% reduction in VOC emissions (this analysis assumes a 9.5 psi standard), to place such an imposition on them to further reduce in light of the incremental gain is not warranted. That is, "the vast majority of the air quality benefits have already been achieved under the current Docket A and 9.5 standard". (R. at p. 29).

The IPC further stated that if the Board disagrees and adopts the 9.0 psi standard, then it should only apply to the months of July and August. While insisting that the distribution problems would remain, IPC maintained that the shorter control period would reduce their burden. For example, the IPC stated that in order to prepare for a two month control period at the retail level, preparations would have to be made beforehand and a trailing effect would occur. Thus higher volume outlets would be selling lower volatility fuel earlier than July 1st while those markets which did not turn over their product as rapidly would still be selling lower volatility gasoline after the regulatory timeframe had expired. The IPC came to the conclusion that this essentially creates a three and a half month program under the current regulation [docket (A)]. (R. at 28-29).

In addition, IPC requested some alterations in section 215.585(g). Essentially this language would serve as a catalyst for adopting new tests to measure gasoline volatility without the burden of going through an entire rulemaking process. The

testing methods currently in place are the so-called "dry tests". Under these tests, the volatility measurements are subject to variations of up to 0.5 and testing must be undertaken in laboratory settings. The IPC, upon information and belief, has been led to believe that the USEPA will be adopting a new test called the "Granbner" test. This measurement is not only accurate, but can be done in the field and is thus more convenient as well as cheaper.

At hearing the representative from USEPA committed to screening this concept through headquarters. As a result, the USEPA submitted a public comment endorsing the use of this language (P.C. #73). Accordingly the Board has inserted this provision in docket (B).

#### POST-HEARING COMMENTS

While the Illinois Environmental Protection Agency (Agency) did not participate at hearing, it did submit a public comment. (P.C. #76). The Agency determined that the projections of the CLA as well as the DENR in regards to VOC reductions were underestimated. The Agency correctly points out that the DENR's study analyzed the reductions that a 9.0 psi standard [Docket (B)] would achieve relative to a 9.5 psi standard [Docket (A)]. Yet that 9.5 psi standard as articulated in the emergency rule has since expired and docket (A) is federally unacceptable as a SIP revision, leaving only the Phase I federal rule of 10.5 psi. As such, the correct barometer would be any savings against the federal standard. The Agency estimates this reduction to be 303 TPD. (P.C. #76).

The Agency found DENR's estimated cost of 1.5 cents per gallon to be within reason. It noted that the USEPA estimate contained in the June 11 Federal Register under the Phase II RVP rules was 1.1 cents per gallon. Also noteworthy was the fact that the USEPA had determined two economic benefits to lower RVP fuel: "fuels economy credit" and "evaporative recovery credit". The former occurs because lowering RVP requires refiners to substitute components for butane which have greater energy density and thus allow the consumer to purchase fewer gallons of gasoline for the same amount of travel. The latter occurs when a portion of the lower RVP fuel does not evaporate and therefore allows consumers to purchase less. (P.C. #76 at 19).

Finally, the Agency requests that the Board's proposal in docket (B) be limited to 1991 only. The Agency documents the cost of enforcing such a program and notes that the federal program will be in place as of 1992. In short the Agency submits that docket (B) should be adopted as a one-year rule, thereby maximizing the reduction in VOC emissions and minimizing the State's long term efforts of enforcing duplicative regulation with no additional emission reduction benefit.

## DISCUSSION

Given all of the evidence, the Board finds that implementation of the federal standard (9.0 psi) for the period of June 1st to September 15th in 1991 is economically reasonable and technically feasible. Equally significant, it is environmentally desirable.

There is little doubt that such a rule will impact petroleum distributors and refineries. Yet the same can be said of the Emergency Rule in 1990 as well as the Federal Phase II plan. Indeed, the industry stated that they were sending 9.0 psi gasoline in order to meet the 9.5 psi goal of docket (A).

In terms of control period, the three and a half month version put forth in docket (B) is directly related to the time period in which evaporation from gasoline sources occur. The Chicago area has had ozone violations in June and September as well as July and August. The federal Phase II program is a codification of this knowledge. Moreover, it will be the consumer who ultimately pays the cost. (R. at 64-65).

But there exist many differences between docket (A) and docket (B). Unlike docket (A), (B) will contain a test tolerance of 0.3 psi. The industry, therefore, will not have to ship a product which measures 8.5 psi in order to meet the articulated standard. In other words, the Board accepts the notion that variations exist when attempts are made to measure fuel volatility. And given the good faith exhibited by the petroleum industry throughout the course of this proceeding, they should be given the benefit of the doubt. In order to meet the enforceability standard of 9.3 then, the industry would have to ship gasoline with volatility between 8.8 psi and 9.0 psi. Since much of the gasoline tested in the summer of 1990 was in fact under 9.0 psi, the Board does not foresee this to be an undue burden.

Another aspect of docket (B) is the seemingly staggering cost of compliance. The DENR accepted the IPC's estimate that it would have to spend \$65 million in order to comply with docket (B). This amount includes money that must be spent in any event in order to comply with the federal regulations effective in 1992. Regardless of these transitional costs, however, there is no doubt that the consumer ultimately incurs the cost. (R. at 13-14). USEPA and DENR estimate this cost to be between 1.1 and 1.5 cents per gallon.

Because we are dealing with thousands of tons of VOC emissions over the course of a summer, the Board disagrees with IPC's assessment that going from 9.5 psi to 9.0 psi increases costs with only "incremental" benefits. The Agency estimates

that without a Board rule in place the average daily VOC emissions would be 1430 TPD. But with a 9.0 psi standard, daily emissions would be reduced to 1130 TPD. Over the course of the regulatory period (June 1 through September 15), this represents a total of 32,421 tons of VOC emissions. Even by the standards estimated by DENR, the difference would represent over 30,000 tons of VOC emissions. In short, the Board does not view this as incremental or minor, especially in light of the two non-attainment areas located in this state. Finally, the USEPA's determination to limit RVP to 9.0 psi in addition to the test results obtained over the regulatory period in 1990 convince the Board that docket (B) is both economically reasonable and technically feasible for the proposed control period.

ORDER

The proposed amendments are hereby adopted for Second Notice and the Clerk is directed to submit the proposal to the Joint Committee on Administrative Rules.

TITLE 35: ENVIRONMENTAL PROTECTION  
SUBTITLE B: AIR POLLUTION  
CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER c: EMISSION STANDARDS AND LIMITATIONS FOR  
STATIONARY SOURCES

PART 211  
DEFINITIONS AND GENERAL PROVISIONS

SUBPART B: DEFINITIONS

Section  
211.121 Other Definitions  
211.122 Definitions

Section 211.122 Definitions

"Transfer Efficiency": ratio of the amount of coating solids deposited onto a part or product to the total amount of coating solids used.

PART 215  
ORGANIC MATERIAL EMISSION STANDARDS AND LIMITATIONS

SUBPART Y: GASOLINE DISTRIBUTION

Section  
215.581 Bulk Gasoline Plants  
215.582 Bulk Gasoline Terminals  
215.583 Gasoline Dispensing Facilities  
215.584 Gasoline Delivery Vessels  
215.585 Gasoline Volatility Standards

Section 215.585 Gasoline Volatility Standards

- a) No person shall sell, offer for sale, dispense, supply, offer for supply, or transport for use in Illinois gasoline whose Reid vapor pressure exceeds the applicable limitations set forth in subsections (b) and (c) during the regulatory control periods, which shall be ~~July 1 to June 1~~ to ~~August 31~~ September 15 for retail outlets, wholesale purchaser-consumer facilities, and all other facilities.
- b) The Reid vapor pressure of gasoline, a measure of its volatility, shall not exceed ~~9.5~~ 9.0 psi (~~65.5~~ 62.1 kPa) during the regulatory control period in 1990~~1~~ and each year thereafter only.
- c) The Reid vapor pressure of ethanol blend gasolines shall not exceed the limitations for gasoline set forth in subsection (b) by more than 1.0 psi (6.9 kPa). Notwithstanding this limitation, blenders of ethanol blend gasolines whose Reid vapor pressure is less than 1.0 psi above the base stock gasoline immediately after blending with ethanol are prohibited from adding butane or any product that will increase the Reid vapor pressure of the blended gasoline.
- d) All sampling of gasoline required pursuant to the provisions of this Section shall be conducted by one or more of the following approved methods or procedures which are incorporated by reference in Section 215.105.
  - 1) For manual sampling, ASTM D4057;
  - 2) For automatic sampling, ASTM D4177;
  - 3) Sampling procedures for Fuel Volatility, 40 CFR 80 Appendix D.
- e) The Reid vapor pressure of gasoline shall be measured in accordance with ~~either test method ASTM D323 or a modification of ASTM D323 known as the "dry method" as set forth in 40 CFR 80, Appendix E, incorporated by reference in Section 215.105. For gasoline - oxygenate blends which contain water-extractable oxygenates, the Reid vapor pressure shall be measured using the dry method test~~ For purposes of enforcement of the Reid vapor pressure limitations set forth in subsections (b) and (c), no enforcement action shall be initiated unless the Reid vapor pressure measured by the Agency is more than 0.3 psi (2.1 kPa) greater than the applicable standard.



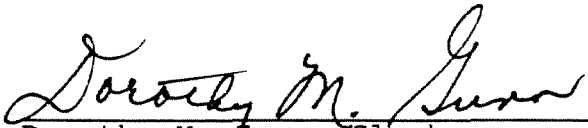
- f) The ethanol content of ethanol blend gasolines shall be determined by use of one of the approved testing methodologies specified in 40 CFR 80, Appendix F, incorporated by reference in Section 215.105.
- g) Any alternate to the sampling or testing methods or procedures contained in subsections (d), (e), and (f) must be approved by the Agency, which shall consider data comparing the performance of the proposed alternative to the performance of one or more approved test methods or procedures. Such data shall accompany any request for Agency approval of any alternate test procedure. If the Agency determines that such data demonstrates that the proposed alternative will achieve results equivalent to the approved test methods or will achieve results equivalent to the approved test methods or procedures, the Agency shall approve the proposed alternative. Upon approval of the alternate sampling or test methods or procedures contained in subsections (d), (e), and (f), the Agency will submit the methods or procedures to the United States Environmental Protection Agency (USEPA) as a revision to the State plan. Alternate methods or procedures become effective only upon approval of the incorporation of the alternate method or procedure in the State plan by USEPA, unless such alternate method or procedure has previously been approved by USEPA for use in conjunction with a federally-promulgated gasoline volatility regulation, in which case the alternate method or procedure becomes effective immediately upon approval by the Agency.
- h) Each refiner or supplier that distributes gasoline or ethanol blends shall:
- 1) During the regulatory control period, state that the Reid vapor pressure of all gasoline or ethanol blends leaving the refinery or distribution facility for use in Illinois complies with the Reid vapor pressure limitations set forth in Section 215.585(b) and (c). Any facility receiving this gasoline shall be provided with a copy of an invoice, bill of lading, or other documentation used in normal business practice stating that the Reid vapor pressure of the gasoline complies with the State Reid vapor pressure standard.
  - 2) Maintain records for a period of one year on the Reid vapor pressure, quantity shipped and date of delivery of any gasoline or ethanol blends leaving the refinery or distribution facility for use in Illinois. The Agency shall be provided with copies of such records if requested.

- i) Each retail outlet and each facility operated by a wholesale purchaser-consumer shall, during the regulatory control period, maintain records regarding each delivery of gasoline, which shall include documentation of compliance with the Reid vapor pressure, limitations set forth in Section 215.585 (b) and (c), quantity received and date received. The Agency shall be provided with copies of such records, if requested.
- j) This Section is effective for 1991 only.

IT IS SO ORDERED.

J. Anderson and J.C. Marlin concurred.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 8<sup>th</sup> day of November, 1990 by a vote of 7-0.

  
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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board