

ILLINOIS POLLUTION CONTROL BOARD  
July 16, 1987

IN THE MATTER OF: )  
 )  
PROPOSED AMENDMENTS TO PART ) R86-39  
211 AND 215, LEAKS FROM SYNTHETIC )  
ORGANIC CHEMICAL AND POLYMER )  
MANUFACTURING EQUIPMENT )

PROPOSED RULE. FIRST NOTICE.

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

This matter comes before the Board upon a September 23, 1986 proposal for the adoption of amendments to 35 Ill. Adm. Code 211 and 215 filed on behalf of the Illinois Environmental Protection Agency (Agency). The proposal was accepted and authorized for hearing by order of September 25, 1986. Hearings were held on February 25, 1987 in Springfield and March 11, 1987 in Chicago. The Agency filed an amended proposal on April 13, 1987 and a second amended proposal on May 4, 1987. The Department of Energy and Natural Resources filed a negative declaration on June 1, 1987 and the Economic and Technical Advisory Committee concurred with that declaration on June 10, 1987.

The overriding basis of this proceeding is to correct deficiencies in the Illinois State Implementation Plan (SIP) which have been identified by the United States Environmental Protection Agency (USEPA). Section 172 of the Clean Air Act requires the state to impose the use of reasonably available control technology (RACT) on existing sources in non-attainment areas. On May 19, 1978 USEPA gave notice at 43 Fed. Reg. 21673 that the SIP must include, at least for major urban areas, enforceable regulations reflecting the application of RACT to those stationary sources for which USEPA has published control techniques guidelines (CTGs) since 1978. In August of 1981 a CTG entitled "Control of Volatile Organic Compound Fugitive Emissions for Synthetic Organic Chemical, Polymer and Resin Manufacturing Equipment" was published in draft form and subsequently made final. In 1982 the Agency proposed regulations in R82-14 to the Board which were subsequently adopted in a revised form and submitted to USEPA as a SIP revision.

USEPA reviewed the rules and concluded that the rules regarding leaks needed major revision in that the rules allowed excessive emissions and do not represent a quarterly leak detection and repair program. The present proposal is intended to remedy the cited deficiencies.

No adverse comments or evidence has been presented regarding the bulk of the proposed rules. Issues have, however, risen in five areas: the geographic coverage of the rule, the definition of "Identification," the inconsistency between Section 215.431(d) and 215.432(i) regarding the exemption for ball and plug valves, and the requirement of Section 215.437(c) of closed purge or closed vent systems for sampling connections.

#### GEOGRAPHIC COVERAGE

Mr. Wierdak of Amoco Chemical Company testified that he believed that Will County should not be included within the geographic coverage of these rules because Will County is an ozone attainment area, and that inclusion of Will County is not, therefore, required by the Clean Air Act. (R. 97-99). Further, upon a motion of Stepan Chemical Co. at the March 11, 1987 hearing, the testimony of Mr. Erwin Kauper, a certified consulting meteorologist, which was presented at the April 24, 1987, hearing in R86-18, was incorporated into this record in an apparent attempt to demonstrate that Will County emissions do not contribute to ozone violations. That testimony appears at 1034-1106 of the April 24, 1987 hearing. Mr. Forbes of the Agency, however, testified that Will County should be included since it is part of the SIP area, that emissions from the County impact the ozone air quality of the region, and that the emissions reductions from application of RACT to sources in Will County have been included in previous analyses and are necessary to demonstrate attainment of the National Ambient Air Quality Standards (NAAQS). (R. 15-16).

The Board has considered the geographic applicability of the RACT rules in several recent opinions: R82-14, April 19, 1987 at 4-5; R82-14, April 30, 1987 at 21-22; R85-21(A), May 28, 1987 at 21-22; and R86-12, May 28, 1987 at 4. In each of these, the Board indicated that it would follow the Agency's proposal that the RACT regulations be applied to Cook, DuPage, Kane, Lake, Macoupin, Madison, McHenry, Monroe, St. Clair and Will counties. All except McHenry and Will are presently designated as non-attainment for ozone.

The fullest and most developed analysis of this issue appears in the April 30, 1987 Opinion in R82-14 at pp. 21-22:

Several years ago, when these proceedings were completed and RACT III was proposed, much of the state was designated as non-attainment. When RACT I was initiated, 25 counties in Illinois were non-attainment for ozone. The rationale for statewide applicability was based on the pervasive statewide ozone problem, the atmospheric transport of ozone and ozone precursors from

sources in attainment areas to non-attainment areas, and the need to provide for growth in the SIP (R. 40-63). At present, many areas of the state have achieved attainment for ozone and the major non-attainment areas, with one exception, are concentrated in the Chicago and East St. Louis major urbanized areas (R. 3204-5). Macoupin County is not located in a major urbanized area but continues to experience violations of the NAAQS for ozone.

Recent regulatory proposals have focused on implementing RACT in the nine counties that comprise the Chicago and East St. Louis major urbanized regions and Macoupin County. Eight of these counties are currently designated non-attainment for ozone. Will and McHenry counties are currently designated attainment for ozone but are part of the Chicago urbanized area. The SIP must, in addition to imposing RACT on major stationary sources in non-attainment areas, provide for ultimate attainment of the ozone NAAQS. To that end, sources in Will and McHenry still need to be RACT controlled in order to ensure adequate emission reductions because of the transport of ozone and ozone precursors from these geographically contiguous counties.

During the course of the various ... regulatory proposals for the heatset web offset category, no participant has raised the issue of changing the geographic applicability in light of the current SIP strategy. Consequently, the Board will limit the geographic applicability of RACT controls to the ten counties designated either non-attainment for ozone or that are a part of the Chicago urbanized area.

As noted above, the geographic coverage has been questioned in this proceeding. The only evidence presented in opposition to the Agency's proposal is contained in the Kauper material which has been incorporated by reference. Mr. Kauper concludes:

1. That the EKMA model used to demonstrate approvability of SIP submissions is flawed;
2. That urban traffic sources rather than point sources are responsible for ozone exceedances; and

3. That proper trajectory analysis generally rules out the significance of point sources in Will, Kane, McHenry and DuPage counties as contributors to ozone exceedances.

(R. 86-19, April 24, 1987, R. 1045-1048 and 1059).

While the Board finds Mr. Kauper's analysis to be interesting, the Board is not persuaded of the validity of his conclusions. Mr. Kauper bases his conclusions on the trajectory analysis. A trajectory is constructed by identifying a specific air parcel (i.e. one containing an ozone concentration in excess of the NAAQS for ozone) and tracing the locations of the air parcel backward in time using hourly wind data. Trajectory analysis attempts to determine the source of the emissions that ultimately led to the exceedances. Twenty-nine (29) separate trajectories were presented by Mr. Kauper showing the paths taken by the air parcels that led to ozone violations in Illinois and Wisconsin on 22 days during the 1985 and 1986 ozone seasons. These trajectories do tend to pass through the Chicago metropolitan area. They do not, however, tend to pass through the Chicago urban area during times when heavy traffic would be expected.

Assuming the urban area to be defined on the trajectory maps by the area bounded by Evanston, Des Plaines, ORD (O'Hare), Cicero, Midway, SW Pump, Calumet City and the lake, and assuming that heavy traffic would not be expected prior to 5:30 a.m. CST, only 8 of the 29 trajectories are indicated to have passed through the urban area at relevant times. On the other hand, at least 15 of the air parcels were over Lake Michigan during the time period after 5:30 a.m. On this simplistic basis it appears more reasonable to assume that the problem stems from Lake Michigan emissions rather than urban traffic. That, of course, is not the case, however, and it appears most reasonable to hypothesize that the ozone precursors in most of the cited cases were injected into the atmosphere at some point prior to the last plotted point of most of the trajectories. Thus, the data presented is of limited value in determining the sources of the ozone exceedances studied, and is of even more limited value with respect to the stated generalized conclusions. Furthermore, Mr. Kauper indicated that short of extending a complete analysis farther back in time, the best guess as to the trajectories prior to the last plotted points would be based upon a presumed movement similar to that indicated by the last few plotted points. (id. at 1074). If that is done, at least 20 of the 29 trajectories would be expected to pass near, or through, Will County. It is difficult to understand, then, how the Board could be expected to conclude that Will County sources are not contributing to these ozone violations. Other factors serve to further undercut Mr. Kauper's conclusions. Mr. Kauper admitted that he was not familiar with the location of stationary sources

in the Chicago area and that he simply assumed, based upon his knowledge of other cities, that the Chicago urban area would be dominated by mobile sources. (id. at 1083). Mr. Kauper further admitted that there is some uncertainty involved in plotting air parcel trajectories, particularly over the lake where there are no wind velocity measurements. (id. at 1075-1079). One such uncertainty is the presumption that wind speed increases by 50% when the air parcel moves offshore due to the reduction in surface friction. (id. at 1079-1080). Studies over oceans have shown a 35% factor. (id. at 1080). Over the distances involved, this difference could be significant, since the uncertainties could be additive.

The Board simply cannot conclude that Mr. Kauper's data supports his conclusion regarding ozone exceedances being caused by Chicago urban mobile sources. While the Board is inclined to agree that the EKMA model may have shortcomings as a predictor of ozone exceedances near Lake Michigan and that a substantial majority of the studied exceedances are impacted by lake effect winds, insufficient information has been provided to demonstrate that Will County does not contribute to those exceedances even assuming the accuracy of the plotted trajectories.

The state is required to have an approved SIP for ozone, and it is already late in that effort. On the one hand, the Agency's proposal appears to be federally approvable; on the other hand, there are serious questions as to whether an attainment demonstration could be made if Will County were not to be subject to the proposed rules. As set forth by Steve Rothblatt, Chief, Air and Radiation branch of USEPA, in order to exclude Will County from the proposal, "USEPA would have to be convinced that emissions from [Will County] do not contribute to the emissions which lead to the violations of the ozone standard found in and downwind of the Chicago area. In addition, it would be necessary for the state to prepare, adopt and submit a SIP revision which includes a new EKMA analysis [which] would have to reflect new values for various parameters which would be affected by the reduction in analysis area. (Attachment to Agency comments, Rothblatt letter at 2), Furthermore, if Will County is excluded from coverage, a "completely revised set of input data would be required" and the delay which would be required for such an analysis and review by USEPA may well subject Illinois program "to various additional requirements currently under development by USEPA." (id.) That is, by the time such a reanalysis's could be completed, USEPA may well have revised its procedures for approval, thus requiring additional support.

Finally, ozone levels recorded during the 1987 ozone season appear to demonstrate the prudence of including some attainment counties under the coverage of these rules. Dr. Rao of the Board's Scientific/Technical Staff has introduced two exhibits at a June 30, 1987 hearing in R86-37 containing preliminary details

of the 1987 exceedances of the NAAQS for ozone based upon monitored data. The Board, on its own motion, hereby makes those same documents exhibits in this proceeding.

The first document (Exhibit 10), entitled "1987 Illinois Ozone Excursions Above the NAAQS Level of 120 ppb," consists of a table showing the date and location (city and county) of monitoring sites along with measured values of the ozone concentration. This table was compiled by the Scientific/Technical Section (STS), using the information provided by Bob Swinford and Will Flowers from the Illinois Environmental Protection Agency (Agency). Dr. Rao from the STS has spoken with the Agency personnel on a number of occasions to update the table which includes data up to July 15, 1987.

Bod Swinford provided the second document (Exhibit 11), which is a summary report generated by the Agency using data from the ozone monitoring sites in Illinois. This report, updated June 22, 1987, is similar to the earlier described table, but in addition also shows 1) the number of excursions that have taken place at each location; 2) the date and location of sites with measured ozone concentrations between 120 and 125 ppb which have been labeled unhealthy pollution standard index (PSI) days; and 3) dates and regions where ozone advisories were issued along with the monitor which triggered the event.

It is interesting to note that several of the 1987 exceedances occur in counties that are presently classified as attainment for ozone (Will, McHenry, and Peoria). Obviously, this may have a bearing on whether the Board should be applying RACT controls in counties presently designated as attainment. The Board requests comment on the significance of these exhibits.

Given the Board's findings concerning the sufficiency of the Kauper testimony, the Board concludes that there is no reasonable likelihood of demonstrating attainment based upon reanalysis of the ozone SIP without including Will County. Since the failure to demonstrate attainment would result in disapproval of the SIP and the state is required to have an approved SIP, the Board proposes that these rules be applicable to the ten counties proposed.

#### Definition of Identification

Section 215.431 requires development of an inspection program plan which is to include a description of the methods to be used to identify all components under the plan "such that they are obvious and can be located by both plant personnel performing monitoring and Agency personnel performing inspections." (Section 215.431(d)). Mr. Wierdak of Amoco testified that the proposed wording is unclear and he is apparently concerned that it may be interpreted to require field markings. (R. 99). Mr.

Wierdak proposed language to ensure that a listing of all components and locations, accompanied by appropriate piping flow diagrams showing the components would be acceptable. (id). The Agency responded in its comments that it believes that present wording is sufficiently clear. (Agency Comments at 2).

The Board agrees with the Agency that the proposed language is sufficiently clear. Actual tagging is not required by the proposed rule: any identification system which allows for readily locating any individual component meets the requirement. While Amoco's proposed language would clarify the acceptability of one method of compliance, it could be interpreted to limit other methods. The Board will, therefore, propose the Agency's language.

#### Ball and Plug Valves

Mr. Wierdak also pointed out a conflict between Section 215.431(d) and 215.432(i). (R. 101-102). He correctly notes that the former section states that "ball and plug valves [are] exempted under Section 215.432(i)," whereas the latter section contains no such exemption. He, therefore, recommends that the latter section be revised to be consistent with the former section.

The Agency has amended its proposal to make the two sections consistent in its Second Amended Proposal. It has done so by eliminating the reference to a ball and plug valve exemption in Section 215.431(d) rather than revising 215.432(i). The exemption of ball and plug valves was a cited deficiency of the present rules, and the Agency's revision is consistent with the intent of proposal, while Mr. Wierdak's suggested revision is not. Other than citing the need for consistency, no testimony has been presented in this record in support of retaining a ball and plug valve exemption. The Board will, therefore, propose the Agency's amended language.

#### Sampling Connections

Mr. Wierdak also testified against the adoption of Section 215.437(c) concerning sampling connections. (R. 101-102). He testified that "the difficulty and costs associated with retrofitting existing process sample points with these systems" does not warrant regulation. The Agency disagrees stating that "while it is true that the CTG does not, in fact, contain the requirements included in proposed rule 215.437(c), the Agency believes that 215.437(c) constitutes RACT" in that the cost of compliance is reasonable. (Agency Comments at 3-4).

Using federal background information, the cost of compliance is stated to be \$535/ton in 1980 dollars for new systems and \$869/ton for retrofitting. (Agency Comments at 3-4 and see

Attachments A and B to Agency Comments). Using an inflation adjustment factor of 1.34, the cost effectiveness in 1986 dollars for retrofitting is \$1,165/ton with total reductions in Illinois of 263 tons/year. (Agency Comments at 4 and Ex. 5, Tables 2-1, 2-2 and 4-1). The Agency argues that the cost of control is reasonable and that its proposal should be adopted.

The Board agrees. The only cost figures in this proceeding are those cited by the Agency above. Wierdak's testimony is really nothing more than an argument that since the CTG does not cover sampling connections, the proposed rule should not be adopted. The Board, however, is not constrained to adopt only those regulations contemplated by the CTG. Given the difficulty the state faces in achieving timely compliance with the ozone standard, where, as here, unrebutted testimony is presented showing that significant reductions in VOC's can be obtained at a reasonable cost to the regulated community, the Board would be remiss in not proposing the adoption of such a rule. The Board will, therefore, propose the rule as submitted by the Agency.

#### Compliance Date

Mr. Wierdak's final point is that it may take up to six months after adoption of the proposed rules for Amoco to implement the new requirements to achieve compliance. (R. 103-104). Since the proposed compliance date is December 31, 1987, if final rules are adopted after July 1, 1987, Amoco may not be able to achieve timely compliance. He, therefore, recommends that "some provision be incorporated into [Section 215.438] to account for reasonable progress in complying with the rules by December 31, 1987, despite the fact that full compliance may not yet be demonstrated.

Obviously, final rules will not be adopted before July 1, 1987. In all likelihood it will be near the end of the year before they will be adopted, which will certainly give rise to some difficulties in compliance by December 31. The variance mechanism could be used to remedy this difficulty while retaining the proposed compliance date. However, to rely on that mechanism is to a large extent elevating form over substance in that the likelihood of receiving a variance prior to achieving compliance is rather low. Instead, the Board has considered adding language to proposed Section 215.438 to allow a facility until July 1, 1988 to achieve full compliance as long as reasonable progress toward compliance is being made. While this appears reasonable, the Board is concerned that such an extension may be viewed with disapproval by the USEPA and will not at this time propose such additional language. However, the Board requests comment on this issue.

Thus, the Board proposes for first notice the language contained in the Agency's Second Amended Proposal.



ORDER

The Board hereby proposed for first notice the following proposed 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

Section 211.122 Definitions

"Component": Any piece of petroleum refinery equipment which has the potential to leak volatile organic material including, but not limited to, pump seals, compressor seals, seal oil degassing vents, pipeline valves, pressure relief devices, process drains and open ended pipes. Except for Subpart C, this definition excludes valves which are not externally regulated, flanges and equipment in heavy liquid service.

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

PART 215  
ORGANIC MATERIAL EMISSION STANDARDS AND LIMITATIONS

Section 215.104 Definitions

"Component": Any piece of equipment which has the potential to leak volatile organic material including, but not limited to, pump seals, compressor seals, seal oil degassing vents, pipeline valves, pressure relief devices, process drains and open ended pipes. This definition excludes valves which are not externally regulated, flanges, and equipment in heavy liquid service. For purposes of Subpart Q, this definition also excludes ball and plug valves.

Section 215.4201 General Requirements

The owner or operator of a plant which has more than 1,500 components in gas or light liquid service, which components are

used to manufacture the synthetic organic chemicals or polymers listed in Appendix D, shall conduct leak inspection and repair programs in accordance with this Subpart for that equipment containing more than 10 percent volatile organic material as determined by ASTM method E-20260, E-168, and E-169. A Component shall be considered to be leaking if the volatile organic material concentration exceeds 10,000 ppm when measured at a distance of 0 cm from the component. The provisions of this Subpart are not applicable if the products listed in Appendix D are made from natural fatty acids for the production of hexadecyl alcohol.

Section 215.4212 Inspection Program Plan for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 215.420 shall prepare an inspection program plan which contains, at a minimum:

- a) An identification of all components and the period in which each will be monitored pursuant to Section 215.4223;
- b) The format for the monitoring log required by Section 215.4235;
- c) A description of the monitoring equipment to be used pursuant to Section 215.4223; and
- d) A description of the methods to be used to identify all pipeline valves, pressure relief valves in gaseous service, all leaking components, and the ball and plug valves and pumps exempted under Section 215.4223(h) such that they are obvious and can be located by both plant personnel performing monitoring and Agency personnel performing inspections.

Section 215.4223 Inspection Program for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 215.4201 shall, for the purposes of detecting leaks, conduct a component inspection program consistent with the following provisions.

- a) Test annually those components operated near extreme temperature or pressure such that they would be unsafe to routinely monitor, and those components located more than two meters above or away from permanent worker access structures or surfaces;

- b) Test all other pressure relief valves in gaseous service, pump seals, pipeline valves, process drains and compressor seals not earlier than March 1 or later than June 1 of each year;
- c) If more than 2 percent of the components tested pursuant to subsection (b) are found to leak, again test all pressure relief valves in gaseous service, pipeline valves in gaseous service and compressor seals by methods and procedures approved by the Agency not earlier than June 1 or later than September 1 of each year;
- d) Observe visually all pump seals weekly;
- e) Test immediately any pump seal from which liquids are observed dripping;
- f) Test any relief valve within 24 hours after it has vented to the atmosphere; and
- g) Test immediately after repair any component that was found leaking.
- h) Ball and plug valves, inaccessible valves, storage tank valves, pumps equipped with mechanical seals, pressure relief devices connected to an operating flare header or vapor recovery device are exempt from the monitoring requirements in this Section.

Section 215.4234            Repairing Leaks

All leaking components must be repaired and retested as soon as practicable but no later than 21 days after the leak is found unless the leaking component cannot be repaired until the process unit is shutdown or the repair part is received. Records of repairing and retesting must be maintained in accordance with Sections 215.424 and 215.425.

Section 215.4245            Recordkeeping for Leaks

- a) The owner or operator of a synthetic organic chemical or polymer manufacturing plant shall maintain a leaking components monitoring log which shall contain, at a minimum, the following information:
  - 1) The name of the process unit where the component is located;
  - 2) The type of component (e.g., valve, seal);

- 3) The identification number of the component;
  - 4) The date on which a leaking component is discovered;
  - 5) The date on which a leaking component is repaired;
  - 6) The date and instrument reading of the recheck procedure after a leaking component is repaired;
  - 7) A record of the calibration of the monitoring instrument;
  - 8) The identification number of leaking components which cannot be repaired until process unit shutdown; and
  - 9) The total number of components inspected and the total number of components found leaking during that monitoring period.
- b) Copies of the monitoring log shall be retained by the owner or operator for a minimum of two years after the date on which the record was made or the report prepared.
  - c) Copies of the monitoring log shall be made available to the Agency, upon verbal or written request, at any reasonable time.

Section 215.4256 Report for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 215.4201 shall:

- a) Submit a report to the Agency prior to the 1st day of July and October listing all leaking components identified pursuant to Section 215.4221 but not repaired within 21 days, all leaking components awaiting process unit shutdown, the total number of components inspected and the total number of components found leaking;
- b) Submit a signed statement with the report attesting that all monitoring and repairs were performed as required under Sections 215.4201 through 215.4267.

Section 215.4267 Alternative Program for Leaks

The Agency shall approve an alternative program of monitoring, recordkeeping, and/or reporting to that prescribed in Sections 215.4201 through 215.4256 upon a demonstration by the owner or operator of such plant that the alternative program will provide plant personnel and Agency personnel with an equivalent ability to identify and repair leaking components. The owner or operator utilizing an alternative monitoring program shall submit to the Agency an alternative monitoring program plan consistent with the provisions of Section 215.421.

Section 215.4278 Compliance Dates and Geographical Areas

- a) Except as otherwise stated in subsection (b), every owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Sections 215.4201 through 215.4267 shall comply with the standards and limitations of those Sections beginning October 31, 1985 December 31, 1987.
- b) If a plant is not located in one of the counties listed below, the owner or operator of the plant shall comply with the requirements of Sections 215.420 through 215.426 no later than December 31, 1987:

Bond	Madison
Clinton	McHenry
Cook	Monroe
DeKalb	Montgomery
DuPage	Morgan
Franklin	Pope
Greene	Randolph
Jackson	Saline
Jersey	Sangamon
Johnson	St. Clair
Kane	Union
Lake	Will
Macoupin	Williamson

(Board note: Counties are designated as attainment or nonattainment for ozone by the United States Environmental Protection Agency (USEPA). The USEPA noted in its redesignation rulemaking, that it will publish a rulemaking notice on Williamson County's attainment status. (45 Fed. Reg. 21949, May 16, 1983.) Should Williamson County be redesignated as attainment prior to October 31, 1985, it and the counties contiguous to it will be considered deleted from the above list.)

- e) Notwithstanding subsection (b), if any county is redesignated as nonattainment by the USEPA at any time subsequent to the effective date of this Section, the owner or operator of a plant located in that county who would otherwise be subject to the compliance date in subsection (b) shall comply with the requirements of Sections 215.420 through 215.426 within one year from the date of redesignation but in no case later than December 31, 1987.

Section 215.4289 Compliance Plan

- a) The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 215.4278(a) or (b) shall submit to the Agency a compliance plan, no later than December 31, 1985.
- b) The owner or operator of a plant subject to Section 215.427(c) shall submit a compliance plan within 90 days after the date of redesignation, but in no case later than December 31, 1986.
- e) The owner or operator of a plant subject to Section 215.427(c) shall not be required to submit a compliance plan if redesignation occurs after December 31, 1986.
- db) The plan and schedule shall meet the requirements of 35 Ill. Adm. Code 201.

Section 215.430 General Requirements

The owner or operator of a plant which processes more than 3660 Mg/yr (4033 tons/year) gaseous and/or light liquid volatile organic material, and whose components are used to manufacture the synthetic organic chemicals or polymers listed in Appendix D, shall conduct leak inspection and repair programs for that equipment in accordance with this Subpart. Leak inspection and repair programs shall be conducted for that equipment containing 10 percent or more by weight volatile organic material as determined by ASTM method E-168, E-169 and E-260. A component shall be considered to be leaking if the volatile organic material is equal to, or is greater than 10,000 parts per million by volume (ppmv) as methane or hexane as determined by USEPA Reference Method 21, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed. The provisions of this Subpart are not applicable if the equipment components are used to produce heavy liquid chemicals only from heavy liquid feed or raw materials.

Section 215.431      Inspection Program Plan for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 215.430 shall prepare an inspection program plan which contains, at a minimum:

- a)    An identification of all components and the period in which each will be monitored pursuant to Section 215.432.
- b)    The format for the monitoring log required by Section 215.434.
- c)    A description of the monitoring equipment to be used pursuant to Section 215.432, and
- d)    A description of the methods to be used to identify all pipeline valves, pressure relief valves in gaseous service, all leaking components, and components exempted under Section 215.432(i) such that they are obvious and can be located by both plant personnel performing monitoring and Agency personnel performing inspections.

Section 215.432      Inspection Program for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 215.430 through 215.438, shall for the purposes of detecting leaks, conduct a component inspection program consistent with the following provisions:

- a)    Test annually those components operated near extreme temperature of pressure such that they would be unsafe to routinely monitor, and those components located more than two meters above permanent worker access structures or surfaces;
- b)    Test quarterly all other pressure relief valves in gas service, pumps in light liquid service, valves in light service and in gas service, and compressors.
- c)    If less than or equal to 2 percent of the valves in light liquid service and in gas service tested pursuant to subsection (b) are found not to leak for 5 consecutive quarters, no leak tests shall be required for three consecutive quarters. Thereafter, leak tests shall resume for the next quarter. If that test shows less than or equal to 2 percent of the valves in light liquid service and in gas service are leaking, then no tests are required for the Next 3 quarters. If more than 2 percent are leaking, then tests are required for the next 5 quarters.

- d) Observe visually all pump seals weekly.
- e) Test immediately any pump seal from which liquids are observed dripping.
- f) Test any relief valve within 24 hours after it has vented to the atmosphere.
- g) Test immediately after repair any component that was found leaking.
- h) Within 1 hour of its detection, a weatherproof and readily visible tag bearing an identification number and the date on which the leak was detected must be affixed on the leaking component and remain in place until the leaking component is repaired.
- i) Any component that is in vacuum service, pressure relief devices connected to an operating flare header or vapor recovery devices are exempt from the monitoring requirements in this Section.

Section 215.433      Repairing Leaks

All leaking components must be repaired and retested as soon as practicable but no later than 15 days after the leak is found unless the leaking component cannot be repaired until the process unit is shutdown. Records of repairing and retesting must be maintained in accordance with Section 215.434 and 215.435.

Section 215.434      Recordkeeping for Leaks

- a) the owner or operator of a synthetic organic chemical or polymer manufacturing plant shall maintain a leaking components monitoring log which shall contain, at a minimum, the following information:
  - 1) the name of the process unit where the component is located.
  - 2) The type of component (e.g., valve, seal).
  - 3) The identification number of the component.
  - 4) The date on which a leaking component is discovered.
  - 5) The date on which a leaking component is repaired.
  - 6) The date and instrument reading of the recheck procedure after a leaking component if repaired.



- 7) A record of the calibration of the monitoring instrument.
  - 8) the identification number of leaking components which cannot be repaired until process unit shutdown; and
  - 9) The total number of valves in light liquid service and in gas service inspected, the total number and the percentage of these valves found leaking during the monitoring period.
- b) Copies of the monitoring log shall be retained by the owner or operator for a minimum of two years after the date on which the record was made or the report prepared.
  - c) Copies of the monitoring log shall be made available to the Agency upon verbal or written request, at any reasonable time.

Section 215.435      Report for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 215.430 through 215.384 shall:

- a) Submit a report o the Agency quarterly, including prior to the 1st day of July listing all leaking components identified pursuant to Section 215.432 but not repaired within 115 days, all leaking components awaiting process unit shutdown, the total number of components inspected, the type of components inspected, and the total number of components found leaking, the total number of valves inspected and the number and percentage of valves found leaking.
- b) Submit a signed statement with the report attesting that all monitoring and repairs were preformed as required under Section 215.430 through 215.436.

Section 215.436      Alternative Program for Leaks

The Agency shall approve an alternative program of monitoring, recordkeeping, and/or reporting to that prescribed in Sections 215.430 through 215.438, upon a demonstration by the owner or operator of such plant that the alternative program will provide plant personnel and Agency personnel with an equivalent ability to identify and repair leaking components. The owner or operator utilizing an alternative monitoring program shall submit to the Agency an alternative monitoring program plan consistent with the provisions of Section 215.431.

Section 215.437      Open-Ended Valves

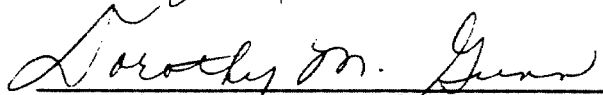
- a) Each open-ended valve shall be equipped with a cap, blind flange, plug, or a second valve, except during operations requiring fluid flow through the open-ended valve.
- b) Each open-ended valve equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
- c) Open-ended valves which serve as a sampling connection shall be equipped with a closed purge system or closed vent system such that:
  - 1) Purged process fluid be returned to the process line with zero VOM emissions to atmosphere, or
  - 2) Purged process fluid be collected and recycled to the process line with zero VOM emissions to atmosphere.

Section 215.438      Compliance Date

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Sections 215.430 through 215.438 shall comply with the standards and limitations of those Sections no later than December 31, 1987.

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 16<sup>th</sup> day of July, 1987 by a vote of 6-0.

  
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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board

1987 Illinois Ozone Excursions  
Above the NAAQS Level of 120 ppb

Date	Monitoring Site (County)	Concentration (ppb)
4/18/87	Lisle, IL (Cook)	139
6/13/87	Chicago - Edgewater (Cook)	156
6/13/87	Chicago - South Water Filtration Plant (Cook)	135
6/13/87	Chicago - Taft High School (Cook)	138
6/13/87	Deerfield, IL (Lake)	130
6/13/87	Waukegan, IL (Lake)	126
6/14/87	Chicago - Edgewater (Cook)	140
6/14/87	Chicago - South-East Police Station (Cook)	144
6/14/87	Chicago - South Water Filtration Plant (Cook)	135
6/14/87	Evanston, IL (Cook)	141
6/14/87	Waukegan, IL (Lake)	140
6/16/87	Waterloo, IL (Monroe)	140
6/17/87	Cary, IL (McHenry)	129
6/17/87	DesPlaines, IL (Cook)	127
6/17/87	Evanston, IL (Cook)	132
6/18/87	Calumet City, IL (Cook)	139
6/18/87	Chicago - Edgewater (Cook)	162
6/18/87	Chicago - South-East Police Station (Cook)	165
6/18/87	Chicago - Taft High School (Cook)	148
6/18/87	Cicero, IL (Cook)	146
6/18/87	Deerfield, IL (Lake)	150
6/18/87	DesPlaines, IL (Cook)	129
6/18/87	Evanston, IL (Cook)	149
6/18/87	Libertyville, IL (Lake)	164
6/18/87	Waukegan, IL (Lake)	178
6/19/87	Evanston, IL (Cook)	133
6/19/87	Libertyville, IL (Cook)	144
6/19/87	Waukegan, IL (Lake)	141
6/20/87	Chicago - Taft High School (Cook)	129
6/23/87	Lemont, IL (Cook)	129
6/23/87	South Lockport (Will)	133
6/24/87	Chicago - Taft High School (Cook)	125
6/24/87	Deerfield, IL (Lake)	177
6/24/87	Evanston, IL (Cook)	127
6/24/87	Libertyville, IL (Lake)	173
6/24/87	Waukegan, IL (Lake)	162
6/24/87	Peoria Heights, IL (Peoria)	126

Ex. 10  
K86-39  
JKC

AAAS EXCURSION OF OZONE NAAQS REPORT

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1987 OZONE EXCURSIONS (DAYS > 125PPB)

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DATE	LOCATION	CONCENTRATION	COMMENTS
Apr 18, 1987	Lisle	139 ppb	*1st Excursion
Jun 13, 1987	Chicago - Edgewater	156 ppb	*1st Excursion
Jun 13, 1987	Chicago - SWFP	135 ppb	*1st Excursion
Jun 13, 1987	Chicago - Taft HS	138 ppb	*1st Excursion
Jun 13, 1987	Deerfield	130 ppb	*1st Excursion
Jun 13, 1987	Waukegan	126 ppb	*1st Excursion
Jun 14, 1987	Chicago - Edgewater	140 ppb	**2nd Excursion
Jun 14, 1987	Chicago - SE Police	144 ppb	*1st Excursion
Jun 14, 1987	Chicago - SWFP	135 ppb	**2nd Excursion
Jun 14, 1987	Evanston	141 ppb	*1st Excursion
Jun 14, 1987	Waukegan	140 ppb	**2nd Excursion
Jun 16, 1987	Waterloo	148 ppb	*1st Excursion
Jun 17, 1987	Cary	129 ppb	*1st Excursion
Jun 17, 1987	Des Plaines	127 ppb	*1st Excursion
Jun 17, 1987	Evanston	132 ppb	**2nd Excursion
Jun 18, 1987	Calumet City	139 ppb	*1st Excursion
Jun 18, 1987	Chicago - Edgewater	162 ppb	***3rd Excursion
Jun 18, 1987	Chicago - SE Police	165 ppb	**2nd Excursion
Jun 18, 1987	Chicago - Taft HS	148 ppb	**2nd Excursion
Jun 18, 1987	Cicero	146 ppb	*1st Excursion
Jun 18, 1987	Deerfield	150 ppb	**2nd Excursion
Jun 18, 1987	Des Plaines	129 ppb	**2nd Excursion
Jun 18, 1987	Evanston	149 ppb	***3rd Excursion
Jun 18, 1987	Libertyville	164 ppb	*1st Excursion
Jun 18, 1987	Waukegan	178 ppb	***3rd Excursion
Jun 19, 1987	Evanston	133 ppb	****4th Excursion
Jun 19, 1987	Libertyville	144 ppb	**2nd Excursion
Jun 19, 1987	Waukegan	141 ppb	****4th Excursion
Jun 20, 1987	Chicago - Taft HS	129 ppb	**3rd Excursion

UNHEALTHFUL PSI DAYS WITHOUT OZONE EXCURSION (120 < value < 125)

May 19, 1987	Edwardsville	121 ppb
Jun 15, 1987	Champaign	123 ppb
Jun 15, 1987	Peoria	122 ppb
Jun 15, 1987	Chicago - SW Pump	121 ppb
Jun 19, 1987	Cary	124 ppb

OZONE ADVISORIES ISSUED

Jun 13, 1987	Chicago - Northside	3pm CDT	Chicago - Taft	136 ppb
Jun 13, 1987	Chicago - Southside	3pm CDT	Chicago - SWFP	126 ppb
Jun 13, 1987	Lake County	3pm CDT	Deerfield	130 ppb
Jun 17, 1987	Chicago-West & South	2pm CDT	Cary	129 ppb
Jun 17, 1987	Chicago - Northside	5pm CDT	Evanston	126 ppb

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UPDATED 6/22/87

FOR FURTHER INFORMATION CONTACT BOB SWINFORD

EX 11  
R86-39  
JRC