

ILLINOIS POLLUTION CONTROL BOARD
August 5, 1993

IN THE MATTER OF:)
)
PETITION OF DART CONTAINER) AS 91-6
CORPORATION OF ILLINOIS) (Adjusted Standard)
FOR ADJUSTED STANDARD FROM)
35 ILL. ADM. CODE 218.986(a))

JOSEPH V. KARAGANIS AND JAMES D. BRUSSLAR, KARAGANIS AND WHITE LTD. APPEARED ON BEHALF OF DART CONTAINER CORPORATION;

JULIE K. ARMITAGE AND JULIA M. GENTILE APPEARED ON BEHALF OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

OPINION AND ORDER OF THE BOARD (by C. A. Manning):

This matter is before the Board on a July 19, 1991, filing of a petition for adjusted standard by Dart Container Corporation of Illinois (Dart or Petitioner) pursuant to Section 28.1 of the Environmental Protection Act (Act). (415 ILCS 5/28.1 (1992).) On October 11, 1991, Dart filed an amended petition for an adjusted standard from 35 Ill. Adm. Code, Subpart TT, §218.986(a). 218.986(a)¹ would require Dart to achieve an overall reduction in non-fugitive volatile organic material (VOM) emissions of at least 81 percent. Dart proposes an adjusted standard from 218.986(a), which if granted, may result in a revision to the State Implementation Plan (SIP).

¹The Board notes that in both the petition and amended petition, Dart asks for an adjusted standard from Section 218.980. However, in the reply brief, Dart asks for relief from Section 218.986(a). At hearing, Ms. Armitage, an assistant attorney on behalf of the Illinois Environmental Protection Agency, stated she had no objection to the technical merits of Dart's proposal for an adjusted standard from Section 218.986(a). (Tr. at 5.) Additionally, the Hearing Officer noted the caption on the stipulation submitted by the Agency and Dart stated Dart was seeking an adjusted standard from 35 Ill. Adm. Code 218.986(a). (Tr. at 7 and Stip. at 1.) Section 218.980 is the applicability section for the Subpart while Section 218.986 contains the control requirements. Thus, Section 218.986 is the correct section.

BACKGROUND

Dart operates a polystyrene foam packaging facility adjacent to the Illinois East-West Tollway in North Aurora, in Kane County, Illinois. Dart manufactures drinking cups and other food containers from expandable polystyrene (EPS) beads. Dart's production process involves volatile organic materials (VOM) emissions of the EPS blowing agent, pentane, in excess of 100 tons per year. The facility is a non-Control Technique Guideline emissions source that is addressed by the June 29, 1990, Chicago area Federal Implementation Plan (FIP) promulgated by the United States Environmental Protection Agency (USEPA) (40 CFR 52.741) and the related Illinois Reasonably Available Control Technology (RACT) Rules found at 35 Ill. Adm. Code Part 218.

PROCEDURAL HISTORY

On August 7, 1991, the Illinois Environmental Protection Agency (Agency) filed a motion to dismiss Dart's petition seeking an adjusted standard. Dart responded to the Agency motion to dismiss on August 19, 1991. On November 13, 1991, the Agency filed a response to Dart's petition recommending that the Board deny Dart's petition.

On February 14, 1992, Dart and the Agency filed a joint status report stating they were in the process of negotiating and that Dart required additional time to file a reply to the Agency's response. A second status report was filed by the Agency on May 4, 1992 indicating negotiations were on-going between the Agency and Dart. On May 29, 1992, Dart filed a reply in further support of the petition for an adjusted standard. The Board notes the reply is significantly larger and provides more technical information than the original petition.

On July 24, 1992, the Agency filed a response to Dart's May 29th reply (Resp.). The response withdrew the Agency's earlier recommendation of denial of Dart's petition and stated the Agency had no objections to the technical merits of Dart's petition. However, the recommendation was contingent upon Dart providing further information to the Agency. On August 10, 1992, the Agency filed an amendment to its July 24, 1992, response removing the contingencies of the July 24, 1992, response (Am. Resp.).

On August 6, 1992, a hearing was conducted in Geneva, Illinois. At hearing, the Agency and Dart filed a stipulated agreement. The agreement set forth the Agency's recommendation for granting the adjusted standard as an alternative control plan subject to several conditions.

PROPOSED ADJUSTED STANDARD

In its amended petition, Petitioner proposed the following

adjusted standard and rationale:

Dart Container of Illinois shall comply with Subpart TT of Section 218.986(c) by reducing plant emissions by 45% from the baseline value of 207 tons per year. (Am. Pet. at 31.)

In summary, Dart requests that an adjusted standard of 45% reduction in VOC emissions be approved by the Board as an adjusted standard and by the Agency as an alternative control plan and SIP revision. Dart hopes that these levels will allow it to meet the regulations of 218.980 by limiting emissions to 55% of the baseline emissions or 114 tons of emissions per year in the processing of 7810 tons of EPS into containers. (Am. Pet. at 31.)

However, the agreement between Dart and the Agency contains standards more stringent than those originally proposed in the amended petition. It establishes testing and reporting requirements for the Dart facility (Stip. at 3-6.) and requires Dart's emissions capture and control systems to achieve an overall reduction in uncontrolled VOM emissions from the pre-expanders, blenders, and holding tanks of at least 81 percent. (Stip. at 3.) Additionally, the agreement requires each capture system to achieve at least 85 percent capture of all the VOM emissions from the pre-expanders, blenders, and holding tanks. (Stip. at 3.) The agreement also asks that the boilers be operated and maintained so as to achieve at least 95 percent destruction of VOM from the pre-expanders, blenders, and holding tanks. (Stip. at 3.)

ADJUSTED STANDARD JUSTIFICATION

Section 28.1 of the Act allows the Board to grant an "adjusted standard" modifying the effect of general rules in specific cases. 35 Ill. Adm. Code 106 Subpart G contains procedures to be followed in adjusted standard matters. Where the Board specifies a "level of justification" at the time it adopts the rule of general applicability, then that level of justification controls any adjusted standards filed pursuant to the rule. Absent a specified level of justification, the level of justification is found in Section 28.1(c) of the Act.

Dart seeks an adjusted standard from the following regulation:

Subpart TT of SubTitle B Air Pollution

35 Ill. Adm. Code 218.986

Every owner or operator of an emissions

source subject to this Subpart shall comply with the requirements of subsection (a), (b), or (c) below.

- a) Emission capture and control equipment which achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent, or

- c) An alternative control plan which has been approved by the Agency and approved by the USEPA as a SIP revision.

Dart is governed by 35 Ill. Adm. Code Part 218 instead of 35 Ill. Adm. Code Part 215 because it is within the Chicago area FIP.² However, Dart notes in its reply that although the facility is governed by Part 218, only Part 215 contains a procedure for issuance of adjusted RACT emission-limitation standards by the Board. Dart argues the Board should utilize the adjusted standard justification in Part 215 since none exists in Part 218 and grant its adjusted standard since the technology Dart proposes constitutes RACT.

However, since 35 Ill. Adm. Code 218.986(a) does not list a specific level of justification for an adjusted standard, an adjusted standard from this part must meet the criteria found in Section 28.1 of the Act rather than Part 215. Section 28.1(c) states:

- c) If a regulation of general applicability does not specify a level of justification required of a petitioner to qualify for an adjusted standard, the Board may grant individual adjusted standards whenever the Board determines, upon adequate proof by petitioner, that:
 - 1. factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to

²35 Ill. Adm. Code Part 215 contains the standards and limitations for emissions of organic material from stationary sources other than the Chicago area counties of Cook, DuPage, Kane, Lake, McHenry and Will, and the Metro East area counties of Madison, Monroe and St. Clair. 35 Ill. Adm. Code Part 218 governs the standards and limitations for the Chicago area. 35 Ill. Adm. Code Part 219 applies to the Metro East area.

- the petitioner;
2. the existence of those factors justifies an adjusted standard;
 3. the requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and
 4. the adjusted standard is consistent with any applicable federal law.

The Board notes that compliance with 35 Ill. Adm. Code 218.986(c) requires the petitioner to submit any alternative control plan approved by the Board in granting an adjusted standard, to the USEPA for approval as a SIP revision. Subsection 218.986(c) further requires the Agency to approve an alternative control plan as a SIP revision. However, such approval has already been rendered as part of the stipulated agreement between the parties (Stip. at 1).

Section 28(c)(1) and (2) Existence of Substantially and Significantly Different Factors

Under Section 28.1(c)(1) of the Act, the petitioner must show that factors relating to it are substantially and significantly different from the factors relied upon by the Board in adopting the rule of general applicability at 35 Ill. Adm. 218.986. Under Section 28.1(c)(2), the petitioner must show that the existence of the Section 28.1(c)(1) factors justifies an adjusted standard.

In order to address these factors, Dart relies upon the argument that in formulating Subpart TT of Section 218, the Board and USEPA realized a "high probable cost" existed for controlling VOM from the main process and storage areas of polystyrene facilities. (Reply at 13.) Dart argues that in creating the Chicago-area FIP, the USEPA reviewed the Board's opinion and order in In re Organic Material Emission Standard and Limitations: Organic Emission Generic Rule, R86-18, _____ PCB _____ (April 7, 1988), in which the Board adopted Part 215 Subpart PP, Miscellaneous Fabricated Product Manufacturing Processes. (Reply at 12 & 13.)

In R86-18, the Board adopted the Agency's recommendation to exclude Mobil Chemical Company, a polystyrene foam packaging plant, from Part 215, Subpart PP. (Reply at 12.) Dart's view is the exclusion was granted because the cost effectiveness of

compliance did not constitute RACT. Dart cites the Agency's Final Comments on R86-18 at page 32 as support for this proposition. (Reply at 12.) Additionally, Dart states that based on the Board's opinion and order in R86-18, USEPA realized the costs of compliance for polystyrene foam-packaging plants probably would be high. (Reply at 13.)

Dart suggests it sits in a position similar to that of Mobil and this Board has already recognized that a polystyrene facility such as Mobil is entitled to an exclusion from Part 215. Dart argues, it is equally unable to comply with the onerous requirements of Part 218, and should be entitled to an adjusted standard. As evidence of the compliance problems Dart faces, Dart states in its reply that it has implemented process modifications which have eliminated 44 tons of emissions per year. (Reply at 5.) However, to reduce non-fugitive VOM emissions by 81 percent as required by Section 218.986(a), Dart would have to eliminate an additional 123 tons of pentane from its manufacturing process. (Reply at 6.) To achieve an 81 percent reduction, Dart would have to enclose the molding area and implement the pre-expander system with existing modifications. Dart estimates this cost at approximately \$3,450,000. (Reply at 7.) Dart believes the pre-expander system is the only cost-effective way to destroy an acceptable volume of VOM emissions. It is Dart's position that a pre-expander system plus the process modifications it now has in place constitute RACT. (Reply at 8 and 9.)

Dart's claim that it is justified in seeking an adjusted standard since it is differently situated than those facilities the Board envisioned in devising the rule of general applicability is supported by the Agency's July 24, 1992, response. In the response, the Agency states that compliance with 218.896(a) has not been shown to be technically feasible for Dart's plant and compliance may cause the plant to shut down. (Resp. at 3.) Additionally, the Agency states it is satisfied Dart's proposed method of control is the only system which appears to be utilized by plants of Dart's type. (Resp. at 3.)

The Board finds, based upon the record, the factors relating to Dart are substantially and significantly different from the factors relied upon by the Board when adopting the rule of general applicability. Therefore, Dart is justified in seeking an adjusted standard.

The Board notes that although Dart has provided evidence adequate to justify seeking an adjusted standard, not all polystyrene plants in the Chicago area FIP are substantially and significantly different from the factors relied upon by the Board when adopting Section 218.986. In the future, a petitioner seeking an adjusted standard from Section 218.986 will be required to introduce evidence sufficient to justify an adjusted

standard for the individual facility.

Section 28.1(c)(3) Environmental and Health Effects

Under 28.1(c)(3), petitioner must show that if granted, the adjusted standard will not result in significantly and substantially more adverse health or environmental effects than those considered by the Board in adopting the rule of general applicability.

The Environmental Impact Affidavit (EIA) submitted by Dart at the request of the Agency explores the possible effects which could occur in the event the adjusted standard is granted. The EIA focuses mainly on the effect on air quality of the pentane blowing agent used for manufacturing cups.

The study used for the EIA was based upon a model which approximated the dispersion, exposure, and effects of pentane emitted from Dart. (EIA at 2.) The EIA states the study was designed to examine the impact of pentane on the most exposed local individual in the urban areas of Chicago where the highest ozone readings are found. (EIA at 4.) The EIA also states that the ozone analysis is "extremely conservative" in that it assumes that all pentane avoids depletion, deposition, or removal on its way to the lakefront. The study also makes the assumption all pentane immediately reacts to contribute to ozone formation upon arriving at the lakefront. (EIA at 4.)

The EIA concludes the additional amount of pentane which would be emitted by Dart if the adjusted standard were granted would not significantly contribute to ozone formation in the Chicago Metropolitan Area. (EIA at 6.) The EIA also concludes the additional pentane release should not present a hazard to residents living near the Dart facility. (EIA at 4.)

The Agency's amended response states the Agency reviewed the information provided by Dart pertaining to the impact of pentane on the environment in light of an adjusted standard. The Agency concluded the small amount of pentane which would be released pursuant to the adjusted standard should not result in an adverse effect on human health. (Am. Resp. at 2.) The Agency also determined that if the Board grants the adjusted standard, the standard will neither result in a decrease or significant increase in VOM emissions. (Am. Resp. at 2.)

Based upon the EIA and the Agency's amended response, the Board finds that if granted, the adjusted standard will not result in significantly and substantially more adverse health or environmental effects than those considered by the Board in adopting Section 218.986.

Section 28(c)(1)(4) Consistency with Federal Law

Finally, under Section 28.1(c)(4) the petitioner must show the proposed adjusted standard is consistent with any applicable federal law. In order to fulfill state law requirements, Dart must obtain an adjusted standard from the state rules. An adjusted standard from Section 218.986(a) is consistent with Federal law if the proposed alternative control plan is approved by both the Agency and the USEPA. The Agency, in its amended response, states that it accepts Dart's proposal for an adjusted standard as an alternative control plan. (Resp. at 3.)

The Board finds that Dart's petition for an adjusted standard is consistent with state law, and so grants the adjusted standard. However, the Board notes that in order to fully comply with 40 CFR 52.741(x)(v)(3)(iii) and 35 Ill. Adm. Code 218.986(c), Dart must seek approval from USEPA for a SIP revision.

COMPLIANCE WITH 35 ILL.ADM.CODE
106.705 REQUIREMENTS

The adjusted standard procedures found at 35 Ill. Adm. Code 106 Subtitle G were adopted by this Board on July 10, 1989. The Board has reviewed the Dart amended petition for adherence to the petition content requirements of 35 Ill. Adm. Code 106.705. Although the amended petition does not in the strictest sense, comport with 106.705,³ this Board concludes that Dart has provided sufficient information to substantially satisfy 35 Ill. Adm. Code 106.705.

CONCLUSION

Section 28.1 of the Act allows for an adjusted standard from a rule when certain conditions have been met upon adequate proof by the petitioner. Following a careful review of the record, the Board hereby grants Dart's request for an adjusted standard from 35 Ill. Adm. Code 218.986(a). The Board accepts the adjusted

standard as set out in the stipulated agreement between Dart and the Agency as an Agency-approved alternative control plan required by 35 Ill. Adm. Code 218.986(c). (Stip. at 1.) The final order accompanying this opinion includes several compliance deadlines which have passed; the Board will retain these dates as they appear in the stipulated agreement between the parties.

³35 Ill. Adm. Code 106.705(g) requires quantitative and qualitative impact analysis of a variety of factors. While this information was not originally a part of the amended petition, Dart provided an Environmental Impact Affidavit (EIA) in a subsequent filing. The EIA considered together with the amended petition satisfies the information requirements of 106.705(g).

This opinion constitutes the Board's findings of fact and conclusions of law in this matter.

ORDER

The Board grants Dart an adjusted standard from 35 Ill. Adm. Code 218.986 for its expandable polystyrene product plant located at 310 South Evergreen Drive, North Aurora, Kane County, Illinois (Plant), subject to the following conditions:

1. The current permitted production capacity of the Plant is 7,810 tons of expanded polystyrene (EPS) beads per year. Increases in production beyond 7,810 tons per year would require a modified operating permit pursuant to 35 Ill. Adm. Code Part 201. Modifications to the Plant would require a construction permit pursuant to 35 Ill. Adm. Code Part 201.
2. The pentane (or any other volatile organic material (VOM) expansion agent) content of the expandable polystyrene beads shall not exceed 6.0% by weight as received by the plant.
3. The Plant shall capture VOM emissions from the pre-expanders, blenders and holding tanks and control these emissions by ducting them to the boiler at all times except when the following maintenance activities are being performed:
 - a) flame arrestor maintenance
 - b) VOM (pentane) sensor calibration
 - c) filter maintenance
 - d) VOM (pentane) sensor replacement
4. The specified maintenance activities shall be performed so as to minimize to the extent reasonably possible the period of time during which VOM emissions are uncontrolled.
5. In no event shall the duration of the specified maintenance activities exceed the following:

- a) Six (6) hours per month for flame arrestor maintenance
 - b) Eighteen (18) hours per month for pentane sensor calibration and filter maintenance
 - c) One (1) hour per month for pentane sensor replacement
6. Maintenance of the flame arrestors shall be performed on Saturdays, Sundays or holidays except during emergency.
7. Maintenance activities (other than of the flame arrestors) shall be performed so that the maximum period of time during which VOM emissions are uncontrolled on a particular day shall not exceed two (2) hours.
8. The capture system including hooding and exhaust fans on individual emissions units shall be designed and operated so that essentially all loss of VOM occurs through forced draft openings. All natural draft openings in emission units shall be designed to preclude the loss of VOM by minimizing the size and number of openings to the amount necessary for safe and proper equipment operation and by maintaining at least an average face velocity of one hundred (100) feet per minute across each opening, except for the pentane dilution air vent and the bead transfer air inlet on the pre-expanders/hoppers, each of which shall have an average face velocity of at least fifty (50) feet per minute.
9. During operation of an emission unit, any access port and hatches in the capture system shall be tightly closed except as production, inspection, sampling, and maintenance procedures require access.
10. The Plant's emissions capture and control systems shall achieve an overall reduction in uncontrolled VOM emissions from the pre-expanders, blenders, and holding tanks of at least eighty-one (81) percent. Each capture

system shall achieve eighty-five (85) percent capture of the VOM emissions from the pre-expanders, blenders, and holding tanks. Boilers shall be operated and maintained to achieve at least ninety-five (95) percent destruction of VOM from the pre-expanders, blenders, and holding tanks.

11. The Plant shall implement good management and housekeeping practices to minimize fugitive VOM emissions from any operation prior to introduction of EPS beads to the molding process.
12. The Plant shall not cause or allow visible emissions from its processes except water vapor.
13. The Plant shall perform testing to establish the capture efficiency of the hoods which collect the VOM from pre-expanders, blenders, and holding tanks, and the destruction efficiency of the boilers.
14. Determinations of capture efficiency shall be made by measurement of the VOM in each forced draft opening using the appropriate gas phase test methods and procedures specified in 35 Ill. Adm. Code 218.105. Determination of destruction efficiency shall be made by measurement of the VOM using the appropriate methods and procedures specified in 35 Ill. Adm. Code 218.105. Representative equipment shall be tested.
15. The Plant shall install, operate, and maintain in good working order a continuous monitoring and recording system for direct-to-the-atmosphere bypass vents.
16. The Plant shall install, operate, and maintain in good working order a continuous monitoring and recording system for air flow of the capture systems.
17. The Plant shall install, operate, and maintain in good working order a continuous monitoring and recording system for the VOM content of the gas stream in the capture system relative to the Lower Explosive Limit.
18. All continuous monitoring and recording

instruments shall be properly installed, calibrated, and operated.

19. Not later than April 1, 1993, the following must occur: Installation and operation of the capture and control systems; installation and operation of monitoring and recording devices; demonstration of capture and destruction efficiencies as specified herein; and implementation of all record keeping.
20. Prior to testing, a test protocol shall be submitted to the Agency for approval.
21. The Agency shall be notified in writing not less than thirty (30) days prior to testing.
22. Copies of the final test report(s) shall be submitted to the Agency within fourteen (14) days after the test results are completed and finalized. The final test report(s) shall include at a minimum:
 - a) a summary of results
 - b) general information
 - c) description of test method(s)
 - d) description of test conditions
23. The Plant shall maintain monthly usage records of all materials containing VOM. These records shall include the name and identification number of each material, the total weight of each material, and the VOM content of each material.
24. The Plant shall maintain records of each occurrence when access ports and hatches in the capture system are opened for production, inspection, sampling, and maintenance procedures, including the date, time, duration, and a detailed explanation for opening.
25. The Plant shall maintain records of the operating status for the capture system, control system, monitoring and recording devices, and the pre-expanders, blenders, and holding tanks.
26. The Plant shall maintain records of each

occurrence when one of the conditions of this Stipulation was not met, including, the date, time, duration, and a detailed explanation for each occurrence.

27. The Plant shall maintain records of the VOM content of each shipment of EPS beads as received at the Plant, as determined by representative sampling and laboratory analysis. This requirement may be satisfied by records of analysis performed by the manufacturer for each batch of EPS beads prior to shipment, provided that VOM losses prior to receipt of the beads by the Plant can be adequately accounted for. No changes in the adjustment factor used to account for such losses shall be made without the prior approval of the Agency. In the event of an inconsistency between the manufacturer's data and the Plant's data for shipment, the Plant's data shall govern.
28. The Plant shall maintain records for all monitoring systems.
29. The Plant shall maintain records for the capture system, control systems, and monitoring equipment detailing all maintenance performed including the date, time, duration, and a detailed explanation of each outage. The Plant may use its chart recorder(s) to satisfy this record keeping requirement to the extent applicable.
30. The Plant shall submit to the Agency an annual report of VOM emissions with supporting calculations and a summary of maintenance activities for the capture and control systems.
31. The Plant will continue to investigate methods to reduce VOM emissions. Annual progress reports detailing such efforts shall be submitted to the Agency beginning April 1, 1993.
32. Submittal of information including but not limited to the test protocol, notice of testing, final testing report and annual report shall be sent to:

Illinois Environmental Protection Agency
Permit Section
P.O. Box 19276
Springfield, IL 62794-9276

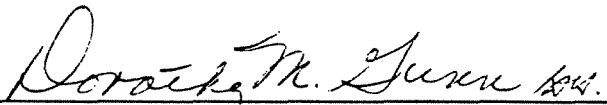
and

Illinois Environmental Protection Agency
Field Operations Service
1701 First Avenue
Maywood, IL 60153

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1992)) provides for appeal of final orders of the Board within 35 days. The rules of the Supreme Court of Illinois establish filing requirements. (See also 35 Ill. Adm. Code 101.246, Motions for Reconsideration.)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 5th day of August, 1993, by a vote of 6-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board