ILLINOIS POLLUTION CONTROL BOARD
February 5, 1987

TRILLA STEEL DRUM CORPORATION, Petitioner,	)	
v.	)	PCB 86-9
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, Respondent.	)	

MR. RICHARD W. COSBY APPEARED ON BEHALF OF THE PETITIONER.

MR. WILLIAM INGERSOLL APPEARED ON BEHALF OF THE RESPONDENT.

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

This matter comes before the Board on a Petition for Variance filed by Trilla Steel Drum Corporation (Trilla) on January 16, 1986. Specifically, Trilla is seeking variance from 35 Ill. Adm. Code 215.212, Compliance Plan, 215.211, Compliance Dates and Geographical Areas, and 215.204(j), Emission Limitations for Manufacturing Plants, Miscellaneous Metal Parts and Products Coating. These regulations concern volatile organic material emissions. Trilla is requesting that the variance be granted until December 31, 1987. The Illinois Environmental Protection Agency (Agency) filed an Agency Recommendation (Ag. Rec.) on March 24, 1986. In its recommendation, the Agency requested that the Board deny Trilla's variance request. A hearing in this matter was held in Chicago, Illinois on October 27, 1986; no members of the public were present. Trilla filed its post-hearing brief (Pet. Brief) and reply brief (Pet. Reply) on December 8, 1986 and January 2, 1987 respectively. The Agency filed its post-hearing brief (Ag. Brief) on December 24, 1986.

Trilla owns and operates a facility which manufactures 55 gallon steel industrial shipping containers. The plant, located at 2959 West 47th Street in Chicago, employs approximately 50 people. (Pet. p. 1,4). Trilla emits volatile organic compounds (VOC) from its coating operations. The shipping containers, or drums, are coated on the exterior as well as the interior. The drums are made to the order of Trilla's customers. Consequently, the customers specify the type and color of coating to be used. (Pet. p. 21). Under the emission limitations of 35 Ill. Adm. Code 215.204(j), the interior coating used by Trilla should not exceed the emission of 4.3 pounds of volatile organic material per gallon of coating. The same subsection also provides that the exterior coating should not emit more than 3.5 pounds of volatile organic material per gallon of coating applied.

Trilla's interior coating lines consist of four spray paint booths and one curing oven. The exterior line has one spray booth and one curing oven. (R. 89). Data concerning the amount of coating used by Trilla, the average VOC content of the coating, and the calculated amount of VOC emitted from the coating is as follows:

	11/1/81 to 10/31/82	11/1/82 to 10/31/83	11/1/83 to 10/31/84	11/1/84 to 10/31/8
Interior Line Total Coating Used (gal)	14,876	15,368	20,957	15,706
Avg. VOC content of Coating (lb/gal)	5.24	5.24	5.24	5.24
Total VOC Emissions from Coating (tons)	38.9	40.2	54.9	41.1
Exterior Line Total Coating Used (gal)	33,352	31,486	30,896	28,176
Avg. VOC Content of Coating (lb/gal)	4.33	4.33	4.33	4.33
Total VOC Emissions from Coating (tons)	72.3	68.2	69.9	61.0

(Pet. p. 4-6)

In 1983, Trilla made improvements to both its interior and exterior coating lines in an effort to increase the transfer efficiency of the coating application process. An increase in transfer efficiency would mean that Trilla could reduce the amount of coating used per drum. (Pet. p. 6). Improvements common to both coating lines include:

1. The installation of new paint spraying tips which allow for more precise spraying reduces overspray.

2. The installation of pressure regulators which allow for a reduction of pressure in the paint lines reduces overspray and bounce back of the coating.

3. Increased drum rotation speed as the drums pass through the spray paint booth reduces overspray.

4. The installation of large agitators in the paint storage barrels reduces the need for solvents to break up the build up of solids in the storage barrels.

On the interior coating line, Trilla has installed an electrostatic spraying system for applying coating to the interior of the detached heads and bottom of a drum. The electrostatic spray system is highly efficient due to the lack of overspray and bounce back. Trilla states that the technology of this system does not lend itself to be used on either the interior of the body of the drum or the exterior of the drum. With regard to exterior coating line, Trilla has made improvements to its drum washing procedures so that the drum's surface is better prepared to receive the coating. This improved surface preparation allows for the use of higher solids coatings and a thinner application of the coating. Trilla asserts that the above improvements have increased coating transfer efficiency such that in 1984, 23.31 drums could be coated with one gallon of exterior coating. Trilla's figures indicate that in 1982, prior to the improvements, it could only coat 18.43 drums per gallon of exterior coating. (R. 91; Pet. p. 6-9).

During the 1970's, Trilla modified its curing ovens in an effort to save on fuel costs. The intent behind the modifications was to minimize the amount of fresh air entering the oven and utilize the hot air, containing combustibles, to generate more heat. (R. 124-25). The drums enter and exit one side of the oven, so the opening on the turn-around end of the oven was closed to help keep the oven's hot air from escaping. (R. 127). In addition, two of three stacks from each oven were closed off. Hot air from the oven is now drawn through ducts into the fire box, located on top of the oven. The air passes over the gas burners in the firebox and is then recirculated back into the oven. A certain amount of fresh air is still allowed to enter the oven system. It is Trilla's position that a significant percentage of the VOC's contained in the hot air, ducted from the oven, are combusted by this recirculation process. (R. 112, 115, 129-30, 134).

Trilla retained Clear Air Engineering, Inc. (CAE) to conduct stack tests in order to determine the amount of VOC's emitted by Trilla during the coating process. These stack tests were conducted on January 16 and 17, 1984. (Pet. Exh. #3). On August 19, 1986, CAE also conducted a study on Trilla's exterior coating line to determine the VOC loss at various points during the process. CAE concluded from this study that 49.04% of the VOC loss from the coating occurs prior to when the drum enters the curing oven. (Pet. Exh. #4, p. 1-1). Combining this conclusion with the results from the stack tests, Trilla asserts that the destruction efficiency of the interior coating line cure oven is 26.8 percent and the destruction efficiency of the exterior coating line cure oven is 49 percent. (Pet. Brief, p. 10). Trilla claims that if these destruction efficiency rates are figured into the emission data presented by the Agency in the Agency Recommendation, one can conclude that the interior coating line is in compliance. That is, according to Trilla, when the destruction efficiency rate is taken into account, the data shows that the emissions from the interior coating line are below that

which would exist if Trilla was applying a coating with the proper VOC/gal content and was not employing any VOC controls. Trilla states that the interior coating line emissions even give a credit of 2.41 tons of VOC per year which could be applied to offset the exterior coating line emissions. Hence, Trilla concludes that in 1985 it emitted only 2.44 tons in excess of the VOC limits. (Pet. Brief, p. 11).

The Agency counters that the interior coating line is not in compliance with emission limitations. The Agency questions the reliability of Trilla's conclusions. Specifically, the Agency points out that the transfer efficiency test, conducted by CAE on August 19, 1986 (See Pet. Exh. #5) and the VOC loss test, referred to above, were conducted on the exterior coating line. Therefore, according to the Agency, those results cannot be used in determining the emissions of the interior coating line. (Ag. Brief, p. 2). In addition, the Agency asserts that the results of the stack tests conducted by CAE in 1984 are not valid, because CAE measured emission rates in carbon per hour, not pounds of VOC. (Ag. Brief, p. 3). The Agency concludes that Trilla has not presented sufficient information to prove that the modifications on the curing ovens cause the destruction of VOC's (Ag. Brief, p. 3). According to the Agency, Trilla annually emits more than 40 tons of VOC in excess of the allowable limit. (Ag. Rec. p. 6, 11).

Trilla claims that interior coatings which meet the 4.3 lb VOC/gal limitation simply do not exist. (Pet. p. 21). As a consequence, Trilla concentrated its efforts on finding exterior coatings with a VOC content sufficiently less than the exterior coating limitation of 3.5 lb VOC/gal so as to offset the internal coating line exceedance. From late 1983 through 1985, Trilla tested various exterior coatings supplied by 5 different firms. All of these test coatings proved unsatisfactory and unuseable. The primary problems with the experimental coatings included failure to cover the surface properly, failure to dry properly -- leaving a tacky finish, uneven drying, and the emission of odors. (R. 101; Pet., p. 11-16).

Compliance Plan

Trilla asserts that its interior coating line is in compliance, so Trilla concludes that it will no longer need to find an exterior coating with a sufficiently low VOC/gal content to offset the interior coating line. Consequently, Trilla claims that it will fare better in a search for an exterior coating due to the fact that the coating VOC/gal content need not be as low as previously thought. Trilla proposes to seek an exterior coating with a VOC content of 3.3 to 3.5 pounds per gallon. (Pet. Brief, p. 16).

The Agency states that since Trilla has been unsuccessful in years past in trying to find exterior coatings which will bring it into compliance, it is unlikely that Trilla will discover such

coatings before December 31, 1987. (Ag. Brief, p. 5). The Agency notes that Chicago, as a nonattainment area, must achieve compliance with RACT regulations by that date pursuant to Section 172 of the Clear Air Act. The Agency believes that the plan proposed by Trilla is inadequate to achieve such compliance. (Ag. Brief, p. 4).

Trilla asserts that there are no compliance alternatives other than the proposed plan, which are both technically feasible and economically reasonable. Control alternatives such as carbon absorption, electrostatic spraying (other than Trilla's present limited use), and powder coatings are not technically feasible according to Trilla. While stack incineration is technically feasible, Trilla claims that the cost of such afterburner systems is economically unreasonable. (Pet. p. 20). It is Trilla's position that if it were required to install and operate a thermal afterburner, Trilla would suffer an end of year loss of $75,000. (R. 15). If a catalytic afterburner with heat recovery was utilized, Trilla's annualized loss would be calculated at $20,000. (R. 21). Also, Trilla states that due to the tight market conditions of the steel container industry, it would lose its market share if it raised its prices to pay for an afterburner system. In fact, Trilla notes that its unit price has dropped in the past three years to a point where Trilla is now charging prices that are approximately the same as it charged ten years ago. (R. 75).

Environmental Harm

Trilla states that the two ozone monitoring stations closest to Trilla have shown a downward trend in the number of days during the year in which the ozone air quality standard was exceeded. It also claims that Trilla contributes an "extremely small percentage" of the total hydrocarbon emissions of Chicago when considering the destruction efficiency of its curing ovens. Consequently, Trilla concludes that its emissions would not interfere with Chicago's progress in attaining ambient air quality standards. (Pet. Brief, p. 19, 20).

It is the Agency's position that Trilla cannot properly claim a destruction efficiency from its curing ovens. (Ag. Brief, p. 3). Therefore, the Agency figures Trilla's excess emissions to be ten times greater than what Trilla calculates. (Pet. Brief, p. 19). The Agency concludes that Trilla, like all other regulated sources in Chicago, should be expected to comply with limitations so that Chicago may achieve attainment. According to the Agency, Trilla has not adequately shown that its excess emissions are "inconsequential". (Ag. Brief, p. 4).

Findings

The Board notes that Trilla has not been in compliance with the coating limitations of 35 Ill. Adm. Code 215.204(j) since the regulations became effective on December 31, 1983. Trilla's last

coating line permit expired on December 31, 1983. Trilla has been operating without a permit since that date. (Ag. Brief, p. 9). Trilla has made a significant effort to increase the transfer efficiency of its coating lines; Trilla claims that it is now using less coating for each drum. The transfer efficiency improvements were made in 1983. Data supplied by Trilla indicates that Trilla used approximately nine percent less coating during the period from November 1, 1984 to October 31, 1985 than was used during the period of November 1, 1981 to October 31, 1982. There is no evidence to show that this nine percent decline is solely attributable to improved transfer efficiency. However, even assuming that is the case, the transfer efficiency improvements have not had a great impact upon the amount of coating used by Trilla. This is important to note because the amount of coating used by Trilla is directly proportional to the amount of VOC's emitted by the facility.

Trilla claims that modification to its curing ovens have resulted in the control of VOC's emitted from the drums while in the ovens. Trilla claims that the interior and exterior line curing ovens have a destruction efficiency of 49 and 26.8 percent respectively. The Agency, along with the Board, questions this conclusion. There is not enough evidence in the record to convince the Board that the modified curing ovens are acting as control technologies having the destruction efficiencies as asserted by Trilla. Trilla calculated the destruction efficiencies in part from data of stack tests. These stack tests were conducted for only two days in 1984, without Agency personnel present. Results from a VOC loss test were also used by Trilla in calculating the destruction efficiencies. The VOC loss test was performed on only one exterior coating for one day in 1986. In addition, no data was presented concerning the temperature within the firebox, the place where the VOC's are allegedly destroyed. The modifications on the curing ovens were designed for the purpose of fuel conservation not VOC destruction. These modifications were implemented in the 1970's years before the present coating limitations became effective. Trilla has not presented enough information to show that the ovens are effective in destroying VOC's.

However, this determination does not preclude Trilla from conducting further tests in order to show that the curing ovens provide a control efficiency such that Trilla is in compliance with VOC emission limitations. Such tests, including stack tests, should utilize methods and procedures in consultation with the Agency. In addition, Agency monitoring of the testing would serve to lessen any controversy that may exist concerning the tests' results and conclusions.

Since the Board cannot rely upon Trilla's assertion that the curing ovens control VOC's, the Board must conclude that Trilla emits all the VOC's contained in the coating it applies. In other words, VOC emissions can be calculated by simply multiplying the amount of coating applied by the VOC content of

the coating. Such data, presented earlier in this opinion, shows that Trilla emitted 102.1 tons of VOC for the period from November 1, 1984 to October 31, 1985. The Agency states that this amounts to an excess of 40 tons over the allowable amount of emissions. Such an amount cannot be ignored when considering the nonattainment status of areas of Illinois.

Under the Clean Air Act, Illinois' nonattainment areas must achieve attainment by December 31, 1987. Trilla's compliance plan consists solely of the further testing of coatings with sufficiently low VOC content. For over two years, Trilla has unsuccessfully attempted to find low VOC coatings which it could utilize. It is unlikely, that this compliance method alone will result in Trilla's achieving compliance by the end of the year. Trilla claims that it will likely find an exterior coating with sufficient VOC content because it no longer needs to offset the interior coating line. Trilla reaches this conclusion since it believes that the interior coating line is in compliance due the destruction efficiency of the interior curing oven. However, the Board cannot conclude from the record that the interior coating line is in compliance. Therefore, if Trilla is left to come into compliance by merely finding low VOC content coatings, it would have to discover an interior coating with a sufficiently low VOC content to offset the interior coating line exceedance. Such a search by Trilla has previously been fruitless.

Given the circumstances, the Board finds that if this variance was denied, thereby requiring Trilla to come into immediate compliance, Trilla would suffer an arbitrary or unreasonable hardship. However, the proposed compliance plan is inadequate to ensure that Trilla will achieve compliance by December 31, 1987. The Board has previously addressed the issue of VOC emissions from steel drum coating operations. In Van Leer Containers, Inc. v. Illinois Environmental Protection Agency, PCB 85-227 (January 8, 1987) as well as Nesco Steel Barrel Company v. Illinois Environmental Protection Agency, PCB 84-81 (January 22, 1987), the Board granted variances for the coating line operations. However, in both instances the Board gave the firms only a limited amount of time, during each variance, to investigate the possibility of utilizing low VOC content coatings or other methods for achieving compliance. The conditions on the variances further provided that if such methods did not appear to be successful during the allotted time, then an afterburner system would have to be installed and ready to operate prior to the expiration date of the variance. The Board finds that a similar form of relief is appropriate for Trilla.

The Board will grant Trilla a variance from 35 Ill. Adm. Code 215.204(j), 215.211 and 215.212 until December 31, 1987. However, this variance is subject to various conditions. First, Trilla must immediately begin an engineering study for add-on control equipment. This will enable quick implementation of such equipment if found to be needed later in the variance period. Trilla may continue its search for compliant coatings. However,

by July 1, 1987, Trilla should begin the installation of add-on control equipment unless it determines, with reasonable certainty, that such controls are unnecessary in order to achieve compliance by December 31, 1987. The Agency shall be immediately notified of any such determination made by Trilla. If Trilla determines that it must utilize add-on controls in order to achieve compliance, these controls should be installed and operational by December 31, 1987. This scheduled compliance plan will allow Trilla to continue its pursuit of low VOC coatings for five more months, yet it will also require that Trilla achieves compliance by the Clean Air Act deadline.

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

ORDER

Trilla Steel Drum Corporation (Trilla) is hereby granted variance from 35 Ill. Adm. Code 215.204(j), 215.211, and 215.212 until December 31, 1987, subject to the following conditions:

1. Trilla shall immediately commence an engineering project study for add-on control equipment.

2. By July 1, 1987, Trilla shall commence the installation of add-on control equipment unelss it determines, with reasonable certainty, that such controls are unnecessary in order to achieve compliance with 35 Ill. Adm. Code 215.204(j) by December 31, 1987. Should Trilla determine that the installation of add-on controls is necessary to achieve compliance, such controls shall be installed and operational by December 31, 1987. The Agency shall be immediately notified of any determination made by Trilla.

3. By March 5, 1987 and every month thereafter, Trilla shall submit to the Agency written reports detailing all progress made in achieving compliance with Section 215.204(j). Said reports shall include information compiled on a monthly basis on coating materials usage; amount of reformulated coating in use; actual and allowable VOM emissions; the quantity of VOM reductions during the reporting period; and actual operating hours. Such reports shall also describe in detail the progress made during the reporting period in the implementation of the elements of its compliance program; shall describe in detail the progress made by Trilla in developing and testing reformulated interior coatings, including product quality and customer acceptance; and shall include any other information which may be requested by the Agency. The reports shall be sent to the following addresses:

Environmental Protection Agency
Division of Air Pollution Control
Control Programs Coordinator
2200 Churchill Road
Springfield, Illinois 62706

Environmental Protection Agency
Division of Air Pollution Control
Region 1, Field Operations Section
1701 South First Avenue
Suite 600
Maywood, Illinois 60153

4. Trilla shall timely apply to the Agency for all the necessary permits consistent with this Order.

5. Within 45 days of the date of this Order, Trilla shall execute a Certification of Acceptance and Agreement to be bound to all terms and conditions of the variance. Said Certification shall be submitted to both the Agency at the addresses specified in Condition 3, above. The 45-day period shall be held in abeyance during any period that this matter is being appealed. The form of said Certification shall be as follows:

CERTIFICATION

_____ (Petitioner), hereby accepts and agrees to be bound by all terms and conditions of the Order of the Pollution Control Board in PCB 86-9, dated February 5, 1987.

_____
Petitioner

_____
Authorized Agent

_____
Title

_____
Date

IT IS SO ORDERED.

J.D. Dumelle concurred. B. Forcade dissented.

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 February, 1987, by a vote of 5-1.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board