

ILLINOIS POLLUTION CONTROL BOARD  
May 22, 1986

S & C ELECTRIC COMPANY, )  
 )  
 Petitioner, )  
 )  
 v. ) PCB 85-17  
 )  
 ILLINOIS ENVIRONMENTAL )  
 PROTECTION AGENCY, )  
 )  
 Respondent. )

MR. DONALD W. RUPERT, KIRKLAND AND ELLIS, APPEARED ON BEHALF OF  
S & C ELECTRIC COMPANY;

MR. JOSEPH R. PODLEWSKI, ATTORNEY, APPEARED ON BEHALF OF THE  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

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

This matter comes before the Board upon a January 31, 1985, petition for variance filed on behalf of the S & C Electric Company (S & C) requesting variance from 35 Ill. Adm. Code 215.204(j)(3) and 215.205. In response to a February 7, 1985, order for more information S & C filed an amended petition on February 14, 1985. S & C filed a second amended petition for variance on July 1, 1986. The Illinois Environmental Protection Agency (Agency) filed its recommendation that variance be granted subject to certain conditions on August 21, 1985, to which S & C responded on October 15, 1985. Hearing was held on February 11, 1986.

S & C, located at 6601 N. Ridge Blvd. in Chicago, manufactures and sells high voltage protective equipment. As part of its process it operates two coating lines for the purpose of applying extreme performance coatings to metal housings for fuses and switches; both consist of a manually operated spray painting booth, bake oven and afterburner. They are designated as Booth 1 and Booth 2. (Pet. at 2). In both booths parts which are to be coated are conveyed to the painting area on overhead conveyor lines where paint is delivered to the part from spray applicators. Paint overspray is directed downward by a down-draft exhaust system through floor grates and collected in a water wash.

In Booth 1, a zinc-rich corrosion primer is first applied to the part to be painted. After a short air drying period, an intermediate primer is applied and allowed to air dry. Finally, a top coat is applied and the part is conveyed to a bake oven for

final drying. In Booth 2, after the corrosion primer and intermediate primer are applied, the part is conveyed to a bake oven where the primers are dried. Following drying, the parts return to the painting area and the top coat is applied. The top coat is then dried in the bake oven. (Pet. at 4). Air from the two baking ovens is drawn by exhaust fans to afterburners which combust the air at temperatures approaching 1250 F. (Pet. at 4). Air from the afterburners is vented to the atmosphere.

There are, three compliance mechanisms available to S & C. The first is to meet the limitation of 35 Ill. Adm. Code 215.204(j)(3) of 3.5 pounds per gallon of volatile organic material (VOM) delivered to the coating applicator. The second is to comply with the alternative emission limitation of 35 Ill. Adm. Code 215.205, and the third is to qualify for an exemption from the emission limitations of Sections 215.204(j)(3) and 215.205 pursuant to Section 215.206.

S & C states that it does not presently meet the 3.5 lbs/gal limitation of Section 215.204(j)(3) in that its coatings contain an average of 4.42 lbs/gal. (Pet. at 8). Furthermore, S & C included the affidavit of Walter Roberts, a chemist employed by S & C who has the responsibility for reviewing coating specifications, examining proposed coating material, and performing research and development on existing and new coating materials, as Exhibit 5 to the variance petition, to establish that "extreme performance coatings having VOC levels of 3.5 lbs. per gallon or less which could be used by S & C are not commercially available today and ... it does not appear that such coatings will be available in the foreseeable future." He bases this on his experience and the fact that he has investigated about 35 coatings in the last 4 1/2 years, none of which has been found to be satisfactory. The Agency does not disagree with these statements. Therefore, S & C apparently cannot comply with Section 215.204(j)(3). S & C does, however, contend that the 3.5 lbs/gal VOM limitation of Section 215.204(j)(3) "assumes that coating suppliers actually manufacture and sell a coating meeting the VOC requirement and further assumes that any such coating would provide acceptable performance characteristics." S & C argues that since that is not the case, the rule should not be held applicable to it.

The Board does not agree. When it adopted the RACT rules (including Section 215.204(j)(3)), the Board realized that those rules were technology-forcing. To now hold these rules to be inapplicable simply because there are no acceptable compliance coatings at present would be to counteract this technology-forcing aspect. A variance, however, is an appropriate mechanism for relief from that provision.

In order to demonstrate compliance with Section 215.205(a) S & C may demonstrate that it has an afterburner which oxidizes

75 percent of the emissions from the coating line and 90 percent of the nonmethane VOM which enters the afterburner to carbon dioxide or water. Alternatively, compliance with 215.205(b) can be demonstrated by showing that some other system is in place which has a control efficiency equivalent to or greater than that provided by Section 215.204(j)(3).

Based upon an hourly usage of 4.5 gallons of paint, S & C estimated that in 1983, the last full year for which such data was available, its uncontrolled VOM emissions attributable to its painting operations were 79,560 lbs or 38.78 tons. (Pet. at 8). Of these emissions 0.46 lbs/gal of VOM are destroyed by the afterburners. (Pet. at 8). Thus, the afterburners destroy only slightly more than 10% of the total uncontrolled emissions, far less than the 75% required by Section 215.205(a).

If the emission reduction of the afterburners is combined with the emission reduction attributable to the water wash in order to establish a system equivalent to Section 215.204(j)(3) pursuant to Section 215.205(b), based upon a water wash capture of 0.64 lbs/gal of VOM, S & C states that in 1983 19,854 lbs. of VOM were controlled. Consequently, S & C's actual emissions for 1983 were 59,706 lbs or 29.83 tons. (Pet. at 9). In order to determine whether this level of reduction is equivalent, it must be compared to the allowable emission pursuant to Section 215.204(j)(3). Assuming a solvent density of 7.3 lbs/gal, S & C's allowable 1983 VOM emissions, based upon an hourly usage of 4.5 gallons (18,000 gallons a year), were 47,745 lbs, or 23.87 tons. Consequently, in 1983 S & C's actual VOM emissions of 29.83 tons exceeded the allowable of 23.87 tons by 5.96 tons. (Rec. at 4).\* Therefore, compliance with Section 215.205(b) has not been demonstrated.

S & C argues that the 6 ton per year exceedance is essentially de minimus. It alleges that its exceedance constitutes only 0.05% of the total reported emissions in Cook County and that "to require S & C to expend substantial amounts of money to decrease by an imperceptible level its VOC [VOM] emissions would be arbitrary and unreasonable." (Pet. at 18). The Board does not agree that a 6 ton per year exceedance is de

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\* The emission figures presented by the Agency and S & C differ slightly, apparently due to somewhat different assumptions and minor errors in conversion. However, the differences are minor and for purposes of discussion, the Board will simply round the figures to 30 tons/yr actual emissions and 24 tons/yr allowable. Further, S & C states that it does not agree with the Agency's method of calculating allowable emissions. (Pet. at 14). S & C does not, however, present alternative calculations or support for any other method of calculation. Therefore, the Board will accept these figures.

minimus, especially when compared to the total emissions of less than 30 tons per year, which is approximately 20% of S & C's total emissions.

The third compliance mechanism is to demonstrate qualification for an exemption pursuant to Section 215.206. The only applicable provision, subsection (a), exempts coating plants whose VOM emissions are less than 25 tons per year. Since S & C emits nearly 30 tons per year, it does not qualify for this exemption.

Immediate compliance is, therefore, impossible short of curtailment of manufacture. Further, S & C indicated that compliance coatings are unlikely in the foreseeable future. The installation of new control equipment capable of removing additional amounts of VOM, principally from the spray booths, would cost about \$2,500,000 to \$5,000,000 per year for operation. Using the lower, and hence more conservative, number and assuming a ten-year lifetime, the annualized cost for acquiring and operating such equipment would be about \$750,000, which would be incurred solely to remove 6 tons of VOM. In other words, based upon Mr. Roberts' estimates, full compliance with Section 214.205 would require the annual additional expenditure of about \$125,000 per ton of VOM removed.

This cost must be balanced against the environmental harm which may be caused by the granting of variance in order to determine whether an arbitrary or unreasonable hardship exists. S & C is located in Chicago which is a nonattainment area for ozone for which the ambient air quality standard is 0.12 ppm. In both 1983 and 1984 the closest ozone monitor, located 8 miles south of the plant, recorded a single exceedance of that standard. (Rec. p. 12). The Agency admits that "it is difficult to determine S & C's contribution to those exceedances in light of the effect of other sources, including motor vehicle emissions." (Pet. at 12). The Agency concludes, however, and the Board agrees, that given S & C's "relatively small contribution to overall organic materials emissions in Cook County, ... there will be no significant adverse air quality impact associated with the granting of the variance."

The Board, therefore, finds that S & C has established that the denial of variance would result in an arbitrary and unreasonable hardship upon it due to the high cost of control and the lack of significant adverse environmental impact. Consequently, the Board will grant the variance from Section 215.204(j)(3) subject to conditions. The Board will not, however, grant variance from Section 215.205 since such relief is unnecessary. Section 215.205 simply allows an alternative mechanism for demonstrating compliance which is of no concern once variance from Section 215.204(j)(3) is obtained.

Variance will be granted only until December 31, 1987. In accordance with the provisions of Section 35 of the Illinois Environmental Protection Act, the Board can only grant variance to the extent that it is consistent with the provisions of the Clean Air Act. Because Section 215.204(j) has not yet been approved by the United States Environmental Protection Agency (USEPA) as part of the State Implementation Plan (SIP), the Agency does not believe that the variance requested, if granted, would have to be submitted to the USEPA as a SIP revision. The Agency has, however, reviewed the petitions for variance, the applicable air quality standards, the most recent Illinois Air Quality Report and all other information which would normally be necessary to obtain approval of a revision to the SIP by USEPA. In addition, the Agency has discussed the approvability of variances containing a post-1987 compliance date as revisions of the Illinois SIP with USEPA. Because of the status of Cook County as a nonattainment area for ozone, it appears highly unlikely that, should the Board's RACT II rules be approved, USEPA will approve any variance allowing compliance to be delayed until after 1987 as a revision to the Illinois SIP. (See Section 172(a) of the Clean Air Act (42 U.S.C. par. 7502(a)). However, the Agency believes that a variance to December 31, 1987 would be approvable as a SIP revision should the USEPA approve the Board's RACT II rules. S & C has indicated the acceptability of that termination date and the Board will grant variance until then. (See R. 4, Response to Agency Rec. dated October 15, 1985 and Letter to the Clerk of the Board filed March 19, 1986).

In its Second Amended Petition for Variance, S & C indicates that it intends to achieve compliance by the end of 1989. However, S & C apparently believes that its compliance schedule can be compressed to meet a December 31, 1987, deadline. Presumably, the same actions will be taken as proposed in the Second Amended Petition. These include replacing Booth 2 with a new coating system consisting of an epoxy powder primer and a high transfer efficiency topcoat, eliminating topcoat paint on all internal switchgear parts and redesigning cabinets now painted in Booth 1 such that they can be painted with epoxy powder coating. (Second Amended Pet. at 4). S & C estimates that these changes will achieve an overall VOM emission reduction of 60% without utilization of any control equipment. As a result, VOM emissions at the end of the variance period will be below 25 tons per year and, therefore, will be exempt pursuant to Section 215.206.

The previously submitted compliance schedule, which must now be revised, is as follows:

<u>Beginning</u>	<u>Completion</u>	<u>Activity</u>
6/01/85	6/01/86	Engineering studies of the new powder coating system and building
6/30/85	6/30/86	Architectural design of building
7/01/85	11/30/87	Building construction
12/01/87	9/30/88	Rearrangement of plant process area to make room for powder coating line
	12/01/87	Purchase orders for powder coating line to be let
10/01/88	4/30/89	Installation of new powder coating line
5/01/89	9/30/89	Shake down of powder coating line equipment
10/01/89	12/31/89	Operation compliance and verification studies

S & C's schedule for redesigning parts so as to be compatible to its proposed powder coating system, which must also be revised, is as follows.

<u>Beginning</u>	<u>Completion</u>	<u>Activity</u>
1/01/85	7/31/85	Design studies
8/01/85	12/31/85	Mock up of new cabinet units
1/01/86	7/31/86	Redesign and modification of new cabinets
8/01/86	11/30/87	Final design and manufacturing
12/01/87	7/31/88	Tooling, equipment manufacturing outline for resigned cabinets

<u>Beginning</u>	<u>Completion</u>	<u>Activity</u>
1/01/89	9/30/89	Modification based on pilot run
10/01/89	12/31/89	Begin production

Other variance conditions, also agreed to by S & C, include a limit on emissions during the variance period and the continued use of existing control systems.

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

ORDER

S & C Electric Company is hereby granted variance from 35 Ill. Adm. Code 215.204(j)(3) until December 31, 1987, subject to the following conditions:

1. Within 30 days of the date of this Order S & C shall submit to the Agency revised compliance schedules for installing a powder coating system and redesigning certain parts to be compatible with that system by December 31, 1987. S & C shall also submit progress reports to the Agency which reasonably informs it of the progress S & C is making in achieving compliance by the end of the variance period. The first progress report shall be due 180 days from the date of this Order and a report shall be due every six months thereafter to the end of the variance period.
2. During the term of the variance S & C shall continue to control VOM emissions from its coating lines through the water wash sludge/afterburner control system so as to minimize VOM emissions to the atmosphere.
3. S & C's annual total coating usage shall not exceed 25,000 gallons during the term of the variance, and S & C shall not utilize coatings with a greater VOC content than the coatings currently in use.
4. Prior to construction of its powder coating system, S & C shall submit to the Agency an application for a construction permit in accordance with 35 Ill. Adm. Code 201.142. S & C shall not operate that system without first obtaining an Agency operating permit in accordance with 35 Ill. Adm. Code 201.143.

- 5. Within forty-five (45) days after the date of this Order, S & C shall execute and send to:

Mr. Joseph R. Podlewski, Jr.  
 Enforcement Attorney  
 Illinois Environmental Protection Agency  
 1701 S. First Avenue - Suite 600  
 Maywood, IL 60153

a certification of acceptance of this variance by which it agrees to be bound by its terms and conditions.

This forty-five (45) day period shall be held in abeyance for any period which this matter is appealed. The form of the certification shall be as follows:

CERTIFICATION

I, (We) S & C Electric , hereby accept and agree to be bound by all terms and conditions of the Order of the Pollution Control Board in PCB 85-17, May 22, 1986.

\_\_\_\_\_  
 Petitioner

\_\_\_\_\_  
 BY: Authorized Agent

\_\_\_\_\_  
 Title

\_\_\_\_\_  
 Date

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 22 day of May, 1986, by a vote of 7-0.

  
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 Dorothy M. Gunn, Clerk  
 Illinois Pollution Control Board