

ILLINOIS POLLUTION CONTROL BOARD  
February 19, 1987

GENERAL MOTORS CORPORATION )  
(ELECTRO-MOTIVE DIVISION), )  
 )  
Petitioner, )  
 )  
v. ) PCB 86-195  
 )  
ILLINOIS ENVIRONMENTAL )  
PROTECTION AGENCY, )  
 )  
Respondent. )

OPINION AND ORDER OF THE BOARD (by R. C. Flemal):

This matter comes before the Board on the November 5, 1986, petition for variance and December 8, 1986, amended petition for variance filed by General Motors Corporation, Electro-Motive Division ("EMD").

Petitioner seeks variance from the requirements of 35 Ill. Adm. Code 215.204(k) as these apply to its High Temperature Aluminum top coating ("Hi-Temp Aluminum") operation at its La Grange, Illinois, facility. Section 215.204(k) presently limits emissions of volatile organic compounds ("VOC") from all top coating operations of manufacturers of heavy off-highway vehicle products to 4.3 pounds VOC per gallon of coating. Variance is requested until the earlier of December 31, 1987, or until a final determination has been made with respect EMD's proposed modification of 215.204(k) (see below).

On January 22, 1987, the Illinois Environmental Protection Agency ("Agency") filed its Recommendation ("Rec.") in this matter. At that time the Agency recommended granting of the requested relief, conditioned upon verification of several points of information presented in the petition and amended petition.

Hearing was held on February 4, 1987, in Chicago, Illinois. At hearing the Agency, having received the requested verification to its satisfaction, affirmed its recommendation that the variance be granted. The Agency bases its recommendation on three principal points (R. at 13): the variance is of short-term; there would be little environmental harm for the pendency of the variance; there is presently before the Board a proceeding in which consideration is being given to VOC limitations as they apply to heavy off-highway vehicle products.

On February 5, 1987, EMD filed a motion for expedited decision. The motion is granted.

### BACKGROUND

EMD produces locomotives and miscellaneous power products for oil drilling and marine propulsion at two plants, its Chicago and La Grange<sup>1</sup> facilities. The Chicago facility has been sold and is scheduled for closure on February 28, 1987. Thereafter, EMD will conduct operations only at its La Grange facility.

One of the operations presently conducted at the EMD-Chicago facility is the hi-temp aluminum coating of two components of locomotive engine exhaust systems. Hi-temp aluminum coating material is not a compliant coating, as it contains 6.01 pounds VOC per gallon of coating material. However, the Chicago facility is exempt from the limitations of 215.204(k) pursuant to 215.206(a), because the plant's total VOC emissions are less than 25 tons/year.

Following closure of EMD's Chicago facility, EMD will no longer be able to conduct the hi-temp aluminum coating operation there, and accordingly desires to reestablish<sup>2</sup> the operation at the La Grange plant. Coating operations at the La Grange facility are subject to 215.204(k) limitations, because the La Grange facility does not qualify for the 215.206 exemptions.

The engine components which require hi-temp aluminum coatings, according to EMD, are a turbo exhaust duct (R. at 19; Ex. 2) and an engine exhaust adaptor (R. at 19; Ex. 3). The surface areas of the exhaust duct is approximately 15 square feet, and requires 10 ounces of hi-temp aluminum coating (R. at 19). The surface area of the exhaust adaptor is approximately 6 square feet, and requires 4 ounces of hi-temp aluminum coating (Id.). Production of engines is such that in 1986 EMD utilized a total of 65 gallons of hi-temp aluminum coating (R. at 21); estimated production levels for 1987 would require approximately 40 gallons of coating (R. at 33).

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<sup>1</sup> Although actually located in McCook, Illinois, this facility is generally referred to in the record as the EMD-La Grange facility, and is identified thereby herein.

<sup>2</sup> Prior to December 31, 1986, EMD conducted hi-temp aluminum coating operations at both Illinois plants. However, as of that date EMD transferred all hi-temp aluminum operations to the Chicago plant due to the compliance problems associated with continuing operations at the La Grange plant (R. at 18).

COMPLIANCE EFFORTS AND HARDSHIP

EMD has explored two avenues of compliance: substitution of an alternative, compliant coating; and, changes in control technology. With respect to using only compliant coatings, EMD has been able to identify compliant coatings for all coatings used or contemplated for use at its La Grange facility with the exception of the hi-temp aluminum coating (Ex. 4, p. 3). Difficulties encountered with identifying an alternative to the hi-temp aluminum coating are associated with the demanding requirements of the coating and the small quantities used.

After the locomotive is fully assembled, the exhaust duct and adaptor are located inside the locomotive hood where they are exposed to operating temperatures up to 1,000 degrees Fahrenheit (R. at 19-20). Therefore, the coating is required to be able to withstand unusually high temperatures. Additionally, the coating must resist rust and corrosion (R. at 20).

EMD contends that no product other than that currently used is able to meet these performance standards while simultaneously meeting the VOC limit of 4.3 lbs/gal. EMD notes that it has tested one possible alternative, which has a VOC content of 4.7 lbs/gal and represents the lowest VOC hi-temp coating provided by EMD's principal supplier (R. at 25). However, in addition to the problem that this alternative is itself not a compliant coating, the test showed the alternative to be too thick to allow spray application. As a possible remedy, the supplier suggested thinning of the alternative coating with solvents before application. This, however, would further increase the VOC content of the alternative and eliminate most or all of the advantage the alternative might afford (Id.).

EMD has also explored possible alternative coatings marketed by other suppliers. Of three possibilities offered, two have VOC contents above 6 lbs/gal and the third cannot withstand temperatures above 300 F. (Id.). Thus, none of the three constitutes a viable alternative.

EMD additionally contends that there has been little incentive for suppliers to formulate alternative coatings given the small market (R. at 24). For this reason, EMD believes that a compliant hi-temp coating is not likely to be forthcoming (R. at 26).

Three changes in control technology which EMD has explored are: improvements in coating transfer efficiency; carbon adsorption-incineration; and, the use of emission reduction credits.

Several alternative application methods have been tested by EMD in an attempt to improve transfer efficiency. However, EMD contends that no alternative method has yet shown itself to be more efficient than the conventional air spray currently utilized (R. at 27).

Carbon adsorption/incineration is considered by EMD to be technically infeasible, environmentally unsound, and economically unreasonable. VOC concentrations in the paint booth during hi-temp coating operations are asserted to be less than 1 part per million, which is below the level at which carbon adsorption can effectively remove VOCs (R. at 28-9). Thus, carbon adsorption is not a technically feasible control process. The incineration portion of the carbon adsorption/incineration process would also require a gas or coal burner, which would produce greater quantities of emissions (admittedly of pollutants other than VOC) than it would eliminate (R. at 29-30). Lastly, EMD contends that carbon adsorption would be excessively costly. EMD estimates the capital and operating costs over a ten-year period to be \$3.5 million (R. at 30). Over this same period EMD estimates that a carbon adsorption system would be capable of removing only about one ton of VOC, at a total cost thusly of \$3.5 million per ton (R. at 30).

The third control technology option, that of using emission reduction credits, is contended by EMD to be unworkable given the particular method of operation of the hi-temp aluminum coating activity. EMD contends that it cannot meet the requirement that emission reduction credits be enforceable. This is because the hi-temp coating occurs on an irregular schedule as needs arise. EMD therefore concludes that "it would be difficult for us to demonstrate compliance using offsets on a daily, weekly basis, et cetera. Expected production cutbacks this year will make enforceability even less realistic" (R. at 31).

Lastly, EMD has considered its alternatives under the assumption that its requested relief would be denied. It would be impossible to produce the locomotive engines without the coated ducts and adaptors. Thus, it would be necessary for EMD to job out the coating operations. In addition to problems with quality control and service that this action would entail, EMD contends that a small private coating facility which is not subject to VOC limitations might well produce greater emissions for the same operations that would EMD. Thus, EMD contends that there might be a net negative environmental consequence (R. at 36-43).

Based on the above considerations, EMD concludes, and the Agency agrees, that Petitioner would suffer arbitrary or unreasonable hardship if denied the requested relief.

### ENVIRONMENTAL IMPACT

Total VOC emissions related to EMD's hi-temp aluminum coating operation in 1986 was 0.195 tons or 391 pounds (65 gal x 6.01 lbs/gal). 1987 production estimates, in which 40 gallons of hi-temp aluminum coating are forecast for use, would produce 0.12 tons or 240 pounds of emissions. These figures contrast with the 401.8 tons/year allowable VOC emissions for the entire La Grange facility. An additional perspective is that the hi-temp aluminum coating at the La Grange facility represents about one-tenth of one percent of the total coatings used (R. at 34). For these reasons, EMD contends, and the Agency concurs, that environmental impact over the period of the requested variance would be small.

### RULEMAKING ACTIVITY

As noted above, there are currently two proposals before the Board, under docket R86-36, to amend Section 215.204(k) in manners which would alter the emissions limit at issue here. One proposal, as offered by the Agency, would decrease the maximum allowable VOC content for top coating of heavy off-highway vehicle products from the present 4.3 lbs/gal to 3.5 lbs/gal, pursuant to a United States Environmental Protection Agency proposal to disapprove the present 4.3 lbs/gal limitation. The second proposal, offered by EMD, would provide an exception for hi-temp aluminum coatings and set a hi-temp aluminum limit of 6.0 lbs/gal.

The Board wishes to emphasize, as noted by the Agency (R. at 14), that the instant matter is an action separate from that of the rulemaking, and that the conclusions based on the record herein do not necessarily reflect on the conclusions which might follow from the record in the rulemaking. Furthermore, the Board believes that it is appropriate to reiterate that the prospect of future rulemaking does not constitute grounds for reaching a determination of arbitrary or unreasonable hardship:

If the speculative prospect of future changes in the law were to constitute an arbitrary and unreasonable hardship, then the law itself would be emasculated with variances, as there is always the prospect for future change. Citizens Utilities Company of Illinois v. Pollution Control Board, 134 Ill. App. 3d 111, 115 (3rd Dist. 1985).

### CONCLUSION

The Board finds that EMD would incur an arbitrary or unreasonable hardship if required to comply immediately with the regulation in question. This, in combination with the limited

duration of the requested relief and the minimal environmental impact expected over the duration of the variance, persuade the Board that the requested relief should be granted.

The Board takes this action in spite of a question regarding the presence of a compliance plan. In the normal consideration of variances, it is incumbent upon Petitioner to provide a specific compliance schedule, upon completion of which Petitioner can reasonably be expected to be in compliance with the regulation(s) in question. Such is absent here. Nevertheless, the Board believes that it is reasonable to make the rare exception here given the limited duration of the variance, the minimal environmental impact, and EMD's good faith efforts to remain in compliance.

Neither EMD nor the Agency has proposed any conditions associated with the granting of the variance, other than the term and termination conditions. However, the Board believes that it is appropriate to condition the variance upon EMD's sole use of a hi-temp coating which has a VOC content not significantly higher than that presently used. The Board will add such condition.

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

#### ORDER

General Motors Corporation, Electro-Motive Division, is hereby granted variance from 35 Ill. Adm. Code 215.204(k), effective this date, for its High Temperature Aluminum top coating operation conducted at its EMD-La Grange facility, subject to the following conditions:

1. Variance shall terminate on December 31, 1987, or upon issuance by the Board of a Final Order in R86-36, whichever occurs first.
2. During the pendency of the variance Petitioner shall use no coating in the operation in question which has a VOC content greater than 6.1 pounds per gallon.
3. Within forty-five (45) days after the date of variance order, Petitioner shall execute a certification of acceptance of this variance by which it agrees to be bound by its terms and conditions. Such certification shall be sent to the Agency's attorney of record. This forty-five (45) day period shall be held in abeyance for any period during which this matter is appealed. The form of the certification shall be substantially as follows:

CERTIFICATION

General Motors Corporation hereby accepts and agrees to be bound by all terms and conditions of the Order of the Illinois Pollution Control Board in PCB 86-195 dated February 19, 1987.

General Motors Corporation

By: \_\_\_\_\_  
Authorized Agent

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

IT IS SO ORDERED.

Board Member Bill Forcade concurred.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 19<sup>th</sup> day of February, 1987, by a vote of 6-0.

Dorothy M. Gunn  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board