

ILLINOIS POLLUTION CONTROL BOARD  
September 27, 1974

DEERE AND COMPANY	)	
Plow and Planter Works,	)	
	)	
Petitioner,	)	
	)	
vs.	)	PCB 74-249
	)	
ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
Respondent.	)	

OPINION AND ORDER OF THE BOARD (by Mr. Seaman):

On July 2, 1974, Deere and Company filed its Petition For Variance, seeking therein a one-year variance from the provisions of Rule 204(f)(2) of the Board's Air Pollution Regulations. Petitioner operates a modern farm equipment assembly facility in Moline, Rock Island County, Illinois, and employs approximately 3,000 persons. Petitioner's facility is located in a primarily industrial area with residences approximately 300 feet to the south.

The subject of this Petition For Variance is a sulfuric acid dip tank, part of a nickel chrome plating system presently being constructed by Petitioner. Petitioner is requesting a one-year Variance from Rule 204(f)(2) as applied to the installation of control equipment for this nickel chrome plating system.

Petitioner's assembly facility includes the following major emissions sources: 2 cupolas, sand handling equipment, metal grinding operations, sand blasting operations, cleaning and plating operations, and surface coating and dipping operations. Petitioner has operating permits for the above-mentioned sources. The application for a construction permit for the nickel chrome plating line in question was denied on June 19, 1974. The new plating line, including the sulfuric acid dip operation, consists of 14 tanks, 3 scrubbers for control, associated ducting and other equipment.

Raw material usage for the sulfuric acid dip operation is 1500 gallons of 21% H<sub>2</sub>SO<sub>4</sub> for six weeks of operation. Only water is added to the tank to maintain levels during the six week period. At the end of six weeks the tank will be dumped and fresh acid added. The spent acid will be disposed of at a landfill. The emissions from sulfuric acid dip operations in plating lines are in the form of a sulfuric acid mist composed of vapors and small droplets. Agency calculations indicate acid mist emissions from the scrubber stack will be 5.0 lb/Ton (average) and 6.7 lb/Ton (maximum). This exceeds the allowable of .15 lb/Ton specified by Rule 204(f)(2).

The Petitioner does not question the action of the Agency in denying its permit application, but does question the appropriateness of the involved regulation. Petitioner submits that this position is supported by the fact that the Agency has submitted a proposal for amending the regulation now pending as PCB R73-17. Petitioner's proposed control system for this installation will limit its acid mist emissions to below 0.1 lb./hr., which Petitioner believes will not have any measurable affect on the environment in the Quad City area.

Petitioner believes that there is no method yet developed to meet Rule 204(f)(2) as now written. This is because Petitioner is attempting to reduce acid use and total acid emissions by plastic tube tank covers to minimize the escape of acid mist into the collector, so that the use of acid is very small and essentially all that is used goes to the collector. However, to comply with the current regulation, the acid mist collection efficiency would have to be:

$$\left[ 1 - \left( \frac{0.15 \text{ lb. acid discharged}}{2000 \text{ lbs. acid used}} \right) \right] (100) = 99.9925\%$$

Petitioner states that acid mist collectors do not operate in this efficiency range, leaving the Petitioner without remedy. Petitioner alleges that it needs this installation in order to plate parts such as those used in hydraulic systems on Petitioner's agricultural and industrial equipment products.

This plating system will give Petitioner capacity to plate long hydraulic cylinder rods which must now be sent to an outside concern. Under current procedures, Petitioner machines and hardens the rods, which must then be hauled under very carefully controlled conditions, to prevent rust and damage, to an outside plater. The rods are then returned to Petitioner and fed back into the manufacturing process.

Petitioner has experienced considerable difficulty with the quality control of outside platers and has been unable to find platers with adequate capacity to handle its requirements. Petitioner alleges that if it is unable to operate the proposed installation and still continues to use its outside vendor, Petitioner will not be able to meet its minimum needs of plated hydraulic cylinder rods after December, 1974.

Petitioner states that it has searched unsuccessfully for Iowa platers capable of picking up this plating load and that to go further than Iowa or Illinois would not only result in considerable increase in hauling expense, but also would use extra energy to complete the transportation process and use extra resources to compensate for the cylinder rods inadequately protected against weathering while in transit.

Petitioner states that the proposed installation represents the highest level of air pollution control that can be achieved under present technology. At-source control is provided by the use of bath covers, and a scrubber is used to reduce sulfuric acid emissions. Scrubber efficiency is improved by also including fume control of the NaOH bath to approach a neutral pH condition in the scrubber and achieve a higher efficiency than if only the sulfuric acid tank emission were controlled.

We are disposed to grant the variance requested until March 31, 1975, or until thirty days from the date the Board takes final action on R 73-17, whichever first occurs. Thereafter, the Board will be in a better position to assess Petitioner's problem if such still exists. However, we will, during the period of this variance, require that Petitioner limit its emissions of acid mist not to exceed 0.1 lbs/hr.

This Opinion constitutes the findings of fact and conclusions of law of the Board.

IT IS THE ORDER of the Pollution Control Board that Deere and Company be granted a variance from the provisions of Rule 204(f)(2) of the Air Pollution Regulations until March 31, 1975, or until thirty days from the date that this Board takes final action on R 73-17, whichever first occurs, subject to the condition that Petitioner shall limit its emissions of acid mist to less than 0.1 lbs/hr. for the period of this variance.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, certify that the above Opinion and Order was adopted on this 27<sup>th</sup> day of September, 1974 by a vote of 5-0.

  
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