

ILLINOIS POLLUTION CONTROL BOARD

August 30, 1973

DEERE & COMPANY,)
(VERMILION DIVISION),)
)
Petitioner,)
)
vs.) PCB 73-88
)
ENVIRONMENTAL PROTECTION AGENCY,)
)
Respondent.)

OPINION AND ORDER OF THE BOARD (by Mr. Henss)

Deere & Company requests variance until December 31, 1973 from the particulate emission standards of the Rules and Regulations Governing the Control of Air Pollution issued by the Illinois Air Pollution Control Board and from Rules 103 and 104 (permits and compliance programs) of Chapter 2, Air Pollution Control Regulations. The variance will be limited to the operation of two air furnaces which are used in the manufacture of malleable iron products at Deere's Vermilion Division in Hoopston, Illinois.

Deere's Vermilion Division is a 60 year old foundry which uses floor molding and two air furnaces for melting. It employs 200 persons and produces about 3800 tons of castings per year. Each batch fed into one of the furnaces includes 22,800 lbs. of malleable scrap, 14,000 lbs. of pig iron, 3,200 lbs. of steel scrap and 26,000 lbs. of coal. The melt cycle takes about 10 hours. Therefore, Deere calculates that the process weight rate is 6,600 lbs. per hour per furnace.

On August 31, 1972 Deere applied for operating permits using standard emission factors from AP-42, Compilation of Air Pollutant Emission Factors. Deere estimated that its total particulate emissions from the two furnaces combined came to 17.6 lbs. per hour which was under the 18.2 lbs. per hour allowed in Chapter III, Table 1 of the Rules.

The Agency denied the permit request, at least in part, because of the Agency belief that the standard emission factors were not valid for these furnaces. Petitioner resubmitted the

permit applications along with an explanation for its use of the emission factors. The Agency denied the second permit request. Discussions between the two parties resulted in a stalemate.

Petitioner's operating permit application filed in August 1972 was accompanied by a Compliance Plan and Project Completion Schedule. These documents reflected Petitioner's belief that the new air pollution control regulations will, on December 31, 1973, reduce allowable emissions from 18.2 lbs. per hour to 14.2 lbs. per hour, or about 25% below Petitioner's estimated emission rate of 17.6 lbs. per hour. Petitioner's Compliance Plan essentially was to replace pulverized coal burners with low-sulfur oil burners before December 31, 1973. According to Petitioner, this would reduce particulate emissions to 9.0 lbs. per hour, as compared to a rate of 10.1 lbs. per hour allowed for oil fired operations. In formulating the Compliance Plan, Deere proceeded under the belief that the furnaces were in compliance with current emission standards.

It was the Agency's position that Deere was in violation of applicable Standards on the date of adoption of the new Regulations and therefore, under Rule 203(c) is required to meet the more stringent requirements of Rule 203(a), the standard for "New" Process Emission Sources. Using several calculations, the Agency estimated that particulate emissions from each air furnace were 53 to 74 lbs. per hour. Some of the EPA calculations involved use of emission factors, although the Agency later said "No adequate emission factor is available for emissions from air furnaces" (Agency Amended Recommendation).

The EPA also contended that when using oil Petitioner's combined process weight rate would be about 4 tons per hour and that Deere's particulate emissions of 9.0 lbs. per hour while burning oil would exceed the allowable rate of 5.33 lbs. per hour. Accordingly, the Agency rejected the Compliance Plan and Project Completion Schedule and recommended that Deere petition for variance. Without conceding the validity of the Agency calculations, Deere agreed to petition for a variance.

Initially the Agency recommended denial of the variance. The Agency stated that Deere's program would not bring the Company into compliance with the Standards established in Rule 203(a). The Agency also said that citizens in the area complained of soot, sandy particulates and a dead fish odor allegedly coming from the foundry. The Agency recommended use of distillate fuel oil instead of residual fuel oil and further investigation of methods to achieve compliance.

Subsequently Deere filed an Amended Petition for Variance reflecting major changes in accordance with the Agency Recommendation. Deere advised that it had stopped using the two furnaces simultaneously and now plans to use only one furnace at a time. This modification will change the allowable particulate emission rate to 3.7 lbs. per hour [Rule 203(a)]. Using distillate fuel oil (#2 fuel oil) in place of pulverized coal or residual fuel oil as first proposed, Deere estimated that particulate emissions would be reduced to 3.4 lbs. per hour. Deere also proposed to install an after burner on each furnace which it estimated would further reduce particulate emissions to 2.28 lbs. per hour. Petitioner estimated that conversion of the first furnace would be completed by August 6, 1973 and the second furnace by December 31, 1973.

Deere said the odors mentioned by the Agency "do not relate to the air furnaces. Rather, we suspect this odor is due to the catalyst (DMEA) used in making special cores at Vermilion.... The problem appears to arise when the scrubbant of the core machines bubbling column gelatinizes and becomes ineffective due to over-gassing the core machine with DMEA." The Company said it would install a more reliable metering device to control the amount of catalyst used in the operation. Deere believes that the improved metering will eliminate this odor.

Equipment and installation costs to convert both furnaces will be about \$66,600. Other types of control would be far more expensive (high energy scrubber - \$260,000, electrostatic precipitator - \$200,000). From an economic viewpoint the method of compliance proposed by Deere is certainly to be preferred.

Deere concluded that all points at issue between Petitioner and the Agency except past emission levels had been resolved and asked the Agency to reconsider its Recommendation. The Agency did so and now recommends grant of the variance subject to: use of only one furnace at a time, conversion to #2 low sulfur fuel oil, stack testing, and ultimate compliance with Rule 203(a).

It is our belief that the record in this case is sufficient to allow Petitioner a variance until December 31, 1973 without further proceedings. We grant a variance from the particulate standards (Rule 3-3.111) of the Rules and Regulations Governing the Control of Air Pollution, if a variance is needed. Neither party has been entirely convincing in establishing emission levels from past operations of the air furnaces. No stack tests have been submitted and the calculations by the Agency and by the Company appear to involve a bit of speculation and conjecture regarding emission factors. Fortunately, the case may be decided without resolving the dispute over past emissions. The stack test will provide the information necessary to show future compliance.

It appears that Deere has now adopted a program which will be completed prior to the December 31, 1973 deadline and will probably bring the Company into compliance with the emission standards of Rule 203(a). Both the Company and the Agency appear satisfied that the Compliance Program will work satisfactorily. Under those circumstances we would expect the Agency to approve the Compliance Program and issue an operating permit. No further variance beyond the variance from Rule 3-3.111 should be needed since the Company will be in compliance by the effective date of Rule 203(a). However, we will remove all doubt by also allowing the variance from Rules 103 and 104 as requested. The EPA has twice denied an operating permit and the grant of variance from Rule 103 and 104 will eliminate the need to debate that issue a third time during the term of this variance. We commend both parties for their cooperation and the practical way they have gone about resolving their differences.

ORDER

It is the order of the Board that:

1. Deere and Company is granted a variance from January 1, 1973 until December 31, 1973 from Rule 3-3.111 of the Rules and Regulations Governing the Control of Air Pollution and from Rules 103 and 104 of Chapter 2 Air Pollution Control Regulations for the purpose of modifying two air furnaces at the Vermilion Foundry as described in this Opinion.
2. During the period of the variance Deere shall operate only one of the two furnaces at a time.
3. By September 15, 1973 Petitioner shall convert one air furnace to #2 fuel oil and shall install a suitable after burner.
4. By September 30, 1973 Petitioner shall perform a stack test on the converted furnace. Agency personnel shall be given 5 days notice of the stack test and shall be allowed to observe the test. Results of the test shall be submitted to the Agency within 30 days after it is conducted.
5. If the stack test shows compliance with Rule 203(a), Petitioner shall complete conversion of its second air furnace by December 31, 1973.

6. If the stack test results do not show compliance with Rule 203(a), Petitioner shall apply for a variance indicating what control methods will be used and the time schedule for bringing the air furnaces into compliance.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order was adopted this 30th day of August, 1973 by a vote of 3 to 0.

Christan L. Moffett

