ILLINOIS POLLUTION CONTROL BOARD

June 27, 1974

DEERE AND COMPANY,	)	
	)	
Petitioner,	)	
	)	
vs.	)	PCB 74-119
	)	
ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
Respondent.	)	

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

Deere and Company requests variance for a period of one year from Rules 103 (permits), 104 (compliance programs) and 203(a) (particulate emissions) of the Illinois Air Pollution Control Regulations for operation of its malleable iron foundry at Hoopeston, Illinois. The facility in question is a 60 year old foundry which uses two air furnaces for melting. In PCB 73-88 Petitioner was granted a variance until December 31, 1973 for the purpose of modifying the two furnaces so as to achieve compliance with the particulate regulations. In that proceeding the Board ordered that: "a) Petitioner shall operate only one of the two furnaces at a time; b) one furnace shall be converted to utilize #2 fuel oil and be equipped with an afterburner by September 15, 1973; c) a stack test shall be conducted on the converted furnace by September 30, 1973; d) if the stack test proves compliance with Rule 203(a) Petitioner shall convert the second furnace to oil firing by December 31, 1973. If the stack test fails to prove compliance Petitioner shall apply for a variance indicating what control methods will be used and the time schedule for bringing the air furnaces into compliance".

Petitioner converted one furnace to oil and then performed two stack tests on the furnace during the same batch cycle. The tests showed emission rates of 4.69 lbs./hr. and 1.59 lbs./hr. Deere submitted the stack test results to the Agency, believing they would be averaged to show emissions of 3.14 lbs./hr., comfortably under the allowable emission rate of 3.7 lbs./hr. Conversion of the second furnace was then scheduled so as to be completed by December 31, 1973.

The Agency denied an operating permit for the first converted furnace on the ground that the first test (4.69 lbs./hr.) failed

to demonstrate compliance with the Regulations. Deere resubmitted its application for permit in February 1974 arguing that the Agency had made an error in calculating the allowable emission rate. The operating permit was again denied and this variance proceeding followed.

The Agency asserts that the issues raised in this variance proceeding can only be adjudicated in an appeal from permit denial "if at all". For the purpose of deciding this variance case, the Agency states, "the Board must accept the Agency's interpretation regarding the stack tests and the computation of the applicable emission rate".

We do not accept the Agency's limited view of our function. Petitioner has raised two important issues in conformance with Rule 401(a)(v) of the Procedural Rules. We shall decide those issues. A determination of the allowable emission rate and the actual rate of emission is a basic part of a variance proceeding, as it is a permit proceeding. In filing a petition for variance, rather than an appeal from permit denial, Deere states that regardless of its dispute with the Agency over the averaging of stack tests and determining the cycle time of the process, the matters "can be resolved more expeditiously by further control efforts than by litigating the permit denial".

Operation of an air furnace on a batch cycle requires that the furnace be charged with raw materials which are melted, adjusted for metallurgical content and then discharged from the furnace. The Agency contends and the stack tests clearly show that particulate emissions from the batch cycle are heaviest during the earlier stages of the melt cycle. For this reason the Agency proposes that Petitioner be required to conduct one test run of the stack test during "the first hour of the cycle, excluding any warm up period during which no metal is in the furnace".

On the record provided, the Board finds that stack tests conducted at different stages of a cyclical process, where emission rates are known to differ during the process, cannot be averaged in determining whether compliance has been achieved with applicable regulations. If results of one test exceed the applicable emission rate standard then the cyclical process is being operated in violation of that standard regardless of what the other tests may show. Where such excessive emissions occur during a process start-up, the start-up emissions may be permitted under the provisions of Rule 105 of the Regulations.

The Agency, in its Response to Board Request for Supplemental Information, states that the parties are in agreement on the

following facts: a) the charge rate is 64,000 lbs. per cycle; b) the melt cycle time of 16 hours yields a process weight rate of 4,000 lbs./hr.; c) the allowable particulate emission rate is 3.7 lbs./hr. These figures and rates are in substantial agreement with the information provided by Deere in its Comment filed June 7, 1974. It appears, therefore, that the dispute over the method of computing the allowable emission rate can be resolved, and the rate of 3.7 lbs./hr. coincides with our findings in PCB 73-88.

Because of the delay in bringing the first furnace into compliance, conversion of the second furnace to oil firing has not occurred. Petitioner ceased operating the second furnace on coal and this forced the converted furnace to be in constant operation. This has taken its toll on the converted furnace and Petitioner must either proceed with conversion of the second furnace or periodically shut down the converted furnace for repairs. Petitioner contends that the degree of particulate control demonstrated in the first furnace should be convincing enough to justify conversion of the second furnace pending experimental modifications on the first furnace.

Experimental modifications contemplated by Deere to further reduce its emissions include the placing of an inverted brick bung behind the choke bung and a wall of brick on the stack floor at one end of the arch area. It is believed that some variation in arrangement of these baffles will cause particle impingement to the degree necessary to reduce emissions by an additional 20%, the reduction required to achieve compliance. Cost of the entire experimental project is not expected to exceed $10,000. The Agency believes that the untested control scheme might work, in view of the small degree of control required to achieve compliance, and would effect a substantial economic savings to Deere.

Petitioner requests that it be permitted to convert the second air furnace to #2 fuel oil, install an afterburner and then operate the second converted furnace for "one week periods only when the first air furnace is undergoing repairs and maintenance or when the baffles are being installed or modified". All equipment and parts are on site and conversion of the second furnace will be completed within one month after receipt of our Order allowing the conversion. Petitioner has argued convincingly that considerable heat loss would occur if #2 furnace were operated for less than a full week at a time. The Agency no longer objects to the company's proposed schedule for operating the furnaces.

The EPA recommends that Deere be required to submit a new variance petition, including a compliance plan and project

completion schedule, in the event new stack tests fail to prove compliance. The Agency says such compliance plan should specify control equipment which "has a generally accepted percentage of efficiency, and which is acceptable to the Agency". Deere argues that this condition might jeopardize the Company's "rights and remedies", such as appeal of any permit denial, a variance petition for different relief, or a shut down of the facility.

However, the Agency contends that such condition is the essence of Part 6 of our prior Order. In addition the Agency points out that Petitioner is requesting a license to pollute while conducting experimental tests and therefore it is not unreasonable to require Petitioner to go to proven technology if the experiments fail. Finally, the Agency takes the position that the condition would not prevent Petitioner from seeking other remedies available under the Act. We concur with the Agency's view on this matter.

The final dispute is over length of variance. Petitioner seeks a December 31, 1974 expiration date, contending that its stack testing firm currently has a sixty day backlog and cannot possibly perform the required stack test before August 1, 1974. The Agency, on the other hand, recommends a four month variance. The issue does not relate to actual construction or arrangement of the baffles but to the availability of a test firm for testing of emissions for each baffle configuration. Petitioner claims that "at most, two or three modifications could be achieved and tested within four months". The Agency presently has a list of 37 approved independent testing firms qualified to conduct stack tests and seeks to have Petitioner schedule at least one test prior to July 7, 1974. The plant will shut down for 20 day vacation on that date.

We cannot require that a stack test be conducted prior to July 7, because Petitioner would have only a few days to make the necessary arrangements after receipt of our Order in this case. However, we suggest that Deere contact other stack testers if that becomes necessary to avoid delay in the program.

Deere and Company has satisfactorily shown its need for variance from Rule 203(a) and we shall grant the variance until December 31, 1974. We think the longer period will be needed in order to modify the second furnace following the various experiments. With the grant of variance from 203(a) the Agency may now address the application for permit on the two furnaces. We will grant variance from Rules 103 and 104 for the baffle system in order to avoid a continuous shuffling of permit papers during the experimental period.

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

ORDER

It is the Order of the Pollution Control Board that Deere and Company be granted variance from Rule 203(a) of the Air Pollution Control Regulations until December 31, 1974 for the operation of two air furnaces at its Hoppeston foundry and from Rules 103 and 104 of the Air Pollution Control Regulations until December 31, 1974 for the purpose of installing and testing furnace baffles designed to bring compliance with Rule 203(a). The variance is subject to the following conditions:

1. Petitioner shall convert the second air furnace to #2 fuel oil and install an afterburner on it within 45 days after receipt of this Order.

2. Petitioner shall, after converting the second furnace, operate said furnace for periods not in excess of one week, but only when the first furnace is down for maintenance or repair or baffle modification.

3. Petitioner shall make every reasonable effort to avoid delay in its stack testing program and shall make use of the list of stack testing firms described in these proceedings if it becomes necessary to avoid delay in the program.

4. Petitioner shall notify the Agency in advance of stack tests and allow Agency personnel to observe such tests if they so desire. As far as possible the testing shall be conducted during the same period of the batch cycle as those tests conducted on September 25, 1973.

5. On or before October 31, 1974 Petitioner shall submit to the Agency a report on the stack test results. If the stack test proves that the first furnace has been brought into compliance with Rule 203(a), Petitioner shall apply for and obtain all necessary permits for the baffle system and immediately thereafter install the baffle system on the second air furnace. All details of the successful baffle system shall be supplied to the Agency when Petitioner makes application for the permits.

6. If the stack test fails to prove compliance with Rule 203(a), Petitioner shall apply for such additional variance or may be needed beyond December 31, 1974 and shall indicate 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 27th day of June, 1974 by a vote of 5 to 0.

Christan L. Moffett