

ILLINOIS POLLUTION CONTROL BOARD  
June 22, 1978

UNITED STATES STEEL CORPORATION, )  
 )  
 ) Petitioner, )  
 )  
 )  
 ) v. ) PCB 77-317  
 )  
 )  
 ) ENVIRONMENTAL PROTECTION AGENCY, )  
 )  
 ) Respondent. )

MR. CLIFTON A. LAKE, ROOKS, PITTS, FULLAGAR AND POUST, APPEARED ON BEHALF OF PETITIONER;  
MS. LORETTA WEBER, ASSISTANT ATTORNEY GENERAL, APPEARED ON BEHALF OF RESPONDENT.

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

On December 2, 1977, United States Steel Corporation (USS) filed this Petition for Review of Permit Denial before the Board alleging that the Illinois Environmental Protection Agency (Agency) had unlawfully denied USS's operating permit application for its manufacturing plant in Waukegan, Illinois (Waukegan Works). A hearing was held in this matter on February 2, 1978, at which the parties indicated a Stipulation of Fact would be filed with the Board with briefs to be presented by both parties. No citizens appeared at the hearing, and the Board has received no public comment in this matter.

The Stipulation of Fact as presented by the parties herein indicates that USS operates a heat treating facility for steel wire products at the Waukegan Works facility. The particular process in question here is known as oil-tempering; a process which increases the tensile strength and fatigue resistance of high carbon and alloy steel wires. In this case the wire is heated to a high temperature, quickly quenched in an oil bath and thereafter heated to a low temperature to relieve thermal

stresses caused by the quenching. The high temperature and sudden cooling at a controlled rate is necessary to produce the metallurgical structure needed to give the needed physical characteristics.

Tests conducted at the Waukegan facility indicate an average emission rate of 1.33 lbs./hr. The average weight of steel wire heat treated during each test was calculated as 0.89 tons per hour. These two figures result in a particulate emission factor of 1.49 pounds per ton of wire processed, which is the figure both parties have stipulated for the purpose of this proceeding. Using this emission factor and the maximum design process rate as indicated in paragraph (5) of the Stipulation of Fact, the total maximum particulate emission rate from the steel wire heat treating process is 11.54 lbs./hr. During the course of heat treating 7.75 tons per hour of wire and 26.5 tons of oil is circulated through the process. Make-up oil is added to the heat treating operation at a rate of 61.4 lbs./hr. The protective coating operation introduces an additional 38.23 tons per hour of oil in the process. The quenching oil processing tank loses quenching oil through vaporization and splattering during the quench, particulate emissions during the oil cooling process, and drag-out, i.e., the oil clinging to the wire as it emerges from the oil bath which is apparently burned off during the drawing or tempering process. Losses from the cooling and protective coating bath would include the same as those in the heat treating bath.

Given the preceding facts, the Board must determine what constitutes the process weight rate in this case. In denying the permit application, the Agency determined that the process weight rate should be the amount of oil added to the process's make-up, which, in this case, amounted to 61.4 pounds of oil per hour. Since this amount is less than 100 lbs./hr., the minimum 0.55 lbs./hr. emission limitation would apply resulting in a limitation much less than the 11.54 pounds of particulate emission admitted by USS.

USS on the other hand argues that the weight of the steel wire heat treated or the weight of the oil used in the heat treating bath or some combination thereof should determine the process weight rate. Any of the foregoing would result in an allowable emission rate above that determined as USS's actual emission rate. In its argument, USS turns to the definition of process weight rate as found in Rule 201 of the Regulations, which reads as follows:

Process Weight Rate: The actual weight or

engineering approximation thereof of all materials except liquid and gaseous fuels and combustion air, introduced into any process per hour. For a cyclical or batch operation, the process weight rate shall be determined by dividing such actual weight or engineering approximation thereof by the number of hours of operation excluding any time during which the equipment is idle. For continuous processes, the process weight rate shall be determined by dividing such actual weight or engineering approximation thereof by the number of hours in one complete operation, excluding any time during which the equipment is idle.

USS argues that the definition allows a total weight of anything put in the system to be used in the determination of process weights other than certain fuels and combustion air. A classic example of this thinking leading to an absurd result would be the painting of a steam engine where one would allow the locomotive's weight to be added to the weight of the paint in order to arrive at a process weight rate. In arguing this view, USS cites Johnson and Johnson v. EPA, 8 PCB 149 (1973), where the Board said it interpreted the Rule to exclude only what is expressly excluded. The Board notes that both parties herein seem to accept the fact that Johnson and Johnson has been confined to its facts by subsequent Opinions. See EPA v. Rheem Manufacturing Company, 12 PCB 497 (1974). If any question still remains, the Board hereby confines our reasoning in Johnson and Johnson to the facts of that case.

There has been much discussion concerning process weight rate with respect to a prior Board decision, Collier Carbon and Chemical Corporation v. Environmental Protection Agency, PCB 77-48. In an unfortunate and unnecessary piece of dictum, the Board stated that the quench water was not to be included in the process weight rate. Since this holding was not necessary to the determination of the case and since the issue had not been particularly well argued, the Board finds that it no longer agrees with that holding in Collier Carbon, PCB 77-48.

The Board could engage in a game of semantics with respect to the Regulation, defining what is or is not a process and therefore what was or was not introduced, but we will instead step back out of the trees and look at the forest. Process weight regulation has two general purposes. The first is of course to preserve the environment. The second is to utilize an approach that relates emissions in some matter directly to the productivity of

the process which creates them. As with all Regulations of this type, there will be some situations which, so to speak, fall through the cracks. It is the Board's duty to resolve these situations as best it can based on the facts of the particular situation.

In this case, certainly the amount of heat that must be absorbed by the bath from the steel bears a direct relation to the emissions created by the process. The weight of the steel is a convenient measure of this heat. We, therefore, find that the weight of the steel in this case should be considered as part of the process weight rate. In addition, since USS will be held liable for that part of the cooling medium which in turn becomes part of the emissions due to the process, and since this part of the cooling medium bears a direct relationship to the amount of emissions, USS must be given credit for the weight of material thus lost. In this case the weight of the make-up oil to the quench bath is an imperfect but reasonable measure of this loss and should also be considered as part of the process weight rate. Referring to the data supplied by the parties in their Stipulation of Fact, the weight of the wire treated in the process amounts to 7.75 tons per hour and the make-up oil added to the quench bath amounts to 61.4 lbs./hr. The Board finds, therefore, that the total process weight rate is 15,561.4 lbs./hr. Inserting that process weight into the equation stated in Rule 203(b), the Board finds that the allowable emission rate for the process is 16.21 lbs./hr. Turning again to the Stipulation of Fact as presented by the parties, the total maximum particulate emission rate from the steel wire heat treating process is stated as 11.54 lbs/hr., well within the 16.21 lbs./hr. which we calculate as the allowable emission rate for the process. The Board finds, therefore, that the process in question meets the limitations of Rule 203(b) and that the Agency was incorrect in denying USS' permit application for the reasons stated.

This Opinion constitutes the findings of fact and conclusion of law of the Board in this matter.

#### ORDER

It is the Order of the Pollution Control Board that the Agency's denial of USS' permit application be reversed and this cause be remanded to the Illinois Environmental Protection Agency for further consideration consistent with this Opinion.

Mr. Werner concurs.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 22<sup>ND</sup> day of June, 1978 by a vote of 5-0.

Christan L. Moffett  
Christan L. Moffett, Clerk  
Illinois Pollution Control Board