

ILLINOIS POLLUTION CONTROL BOARD

October 3, 1972

ENVIRONMENTAL PROTECTION AGENCY)
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 v.) PCB 72-54
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 UNION CARBIDE CORPORATION)
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OPINION & ORDER OF THE BOARD (by Mr. Dumelle)

This is an enforcement action filed February 9, 1972 involving the allegation that Union Carbide Corporation (Carbide), in the operation of its Films - Packaging Division in Bedford Park, caused the discharge of gaseous emissions, including hydrogen sulfide and carbon disulfide, thereby causing air pollution as defined in Section 3(b) of the Environmental Protection Act (Act) in violation of Section 9(a) of said Act. The plant produces sausage casings and other products composed of cellulose and employs 1,300 people.

Hearings were first held on May 23 and 24, 1972. Another hearing was held on July 18, 1972 at which time the parties presented a Stipulation and Proposal for Settlement to the public. The hearing officer's report indicates that about fifty persons were in attendance. At the conclusion of the hearing the representative of a local citizens organization thanked the parties for the agreement. The hearing was concluded with applause. No transcript was made of the July 18 hearing.

Carbide purchased the plant in 1956. The area immediately to the north, northwest and northeast of the plant is predominantly residential. The plant operates around the clock every day of the year. The emission volume from the two 140-foot stacks is 192,000 cubic feet per minute. The most recent stacks tests (during 1971) showed the concentrations of hydrogen sulfide and carbon disulfide to be 25 and 35 parts per million respectively at 73 percent of capacity.

Until 1964, the Bedford Park plant, as was the practice in the industry, vented the gaseous emissions of each process line thru roof vents in the immediate vicinity of each line. At the present time these individual emission sources are brought together in a central ventilating system and discharged through the two aforementioned 140-foot stacks. This system was completed in early 1971 at a cost of \$450,000.

In the fall of 1970 Carbide began to investigate and study its problem on its own. In the spring of 1971 they hired an independent consultant. In July, 1971 the consultant rendered a report in which it recommended an experimental unit to test the carbon adsorption process to remove the H₂S and CS₂. The unit was installed by January 1, 1972 but proved inadequate. The complaint in this case was filed in February, 1972. As stated above, hearings were held in May and July, 1972.

In June and July, 1972, Carbide conducted experiments with an alkaline scrubbing unit for applications of the "Cataban" chemical reagent process and also caustic scrubbing using different caustic concentrations. Carbide estimates that it has spent \$200,000 since the fall of 1970 on research and development of treatment alternatives. Carbide's agreed program is as follows:

PHASE I

A. Subject to the qualifications herein stated, on or before June 1, 1973, Carbide agrees to have installed and commence operation of a scrubbing unit for H₂S removal capable of utilizing the Cataban process which will have capacity for a gas stream of at least 60,000 cubic feet per minute. Carbide agrees to file applications for permits for this unit with the EPA and all other governmental pollution control agencies asserting jurisdiction not later than August 24, 1972, assuming the Board has approved this stipulation on or before August 18. If such approval should occur after August 18, 1972, application shall be made not later than on the fourth business day following the date of such approval. Carbide agrees to diligently pursue such applications. In the event the Board does not approve this stipulation until after August 18, 1982, or in the event all necessary permits are not issued within a period of two weeks following the submission of a complete permit application, or both, the time for performance under this Paragraph A shall be extended for a period of time identical in length to the amount of each such delay. A complete permit application is understood to include information required by law to the satisfaction of the EPA.

B. Carbide agrees to construct the scrubbing unit so that it shall also be capable of operating as an alkaline scrubber utilizing a caustic solution (of a concentration of its choice) or some other alkaline medium of Carbide's choice and that it shall be an option of Carbide in its sole discretion to commence operations with such unit utilizing an alkaline scrubbing process of its choice rather than the Cataban process. Provided, that such operation shall be consistent with the provisions of the EPA permit heretofore mentioned.

PHASE II

C. (1) If the Cataban process alone or if the Cataban and another process is utilized, following the start up of the Phase I unit, there shall be a period of no more than four months ("test period") in which the performance of the unit shall be observed, analyzed and evaluated by responsible engineering personnel of both parties. A test period is necessary because this will be the first commercial size operation of its kind using the Cataban process and its successful operation cannot be assured.

(2) If Carbide elects to use an alkaline scrubbing process at the start up of the Phase I unit, it shall have a period of up to 3 months in which the performance of the unit shall be observed, analyzed and evaluated by responsible engineering personnel of both parties. Thereafter it shall proceed with Option 2 of Phase II as described in paragraph F(2) below.

D. If the Cataban process is utilized, at such time during said test period as the EPA and the Vice President-Engineering of Carbide's Films-Packaging Division shall agree that the performance of the unit indicates that it has a practical capability of removing no less than 75 percent of the H₂S in that part of Carbide's stream which it has the capacity to handle, then Carbide shall, within the time specified in Paragraph G below, construct either Option 1 or Option 2 of Phase II as defined in Paragraph F below. If Carbide contends that the operation is not practical, it will supply EPA a detailed written statement of its reasons, specifying the actual or projected costs or test results upon which it relies.

E. Should the Cataban process not meet the criteria stated in Paragraph D above, by the end of the "test period," if and only if, at that time there is a lawful, technologically and economically reasonable means available for disposal of the liquid effluent from alkaline scrubber equipment of the capacity able to handle the entire gas stream of Carbide, Carbide agrees to install Option 2 of Phase II as described in Paragraph F(2) herebelow. It is specifically agreed that any disposal method which requires discharge into the Metropolitan Sanitary District and which is found unacceptable to the District as evidenced in a writing by its General Superintendent shall not be deemed available for purposes of this paragraph.

F. Definition of Phase II:

(1) Option 1: Construction of scrubbing equipment capable of utilizing the Cataban process with sufficient capacity to remove H₂S from the remainder of the entire gas stream of Carbide, the entire system to operate at a removal efficiency not less than the level as determined in Paragraph D hereinabove.

(2) Option 2: Construction of alkaline scrubbing equipment, not designed to utilize the Cataban process, with sufficient capacity to remove H_2S from the remainder of the entire gas stream of Carbide, all alkaline scrubbing equipment to operate at a removal efficiency of not less than 90 percent.

(3) In the event that the conditions herein specified giving rise to either Option 1 or Option 2 do not occur in the time herein specified, Carbide agrees to use its best efforts to find, install, and operate an acceptable treatment method. Such efforts shall be described to the EPA in writing no less than 30 days from the end of the test period and the progress achieved upon the performance of such efforts shall be reported in writing monthly to the EPA by Carbide.

G. From the date of agreement under Paragraph D, or Carbide's written determination within that period to adopt Option 2 if it chooses, Carbide shall, within three weeks, apply for permits for the Phase II equipment from the EPA and all other governmental pollution control agencies asserting jurisdiction. Carbide agrees to complete all Phase II construction within nine months from the date all necessary permits are issued.

We are troubled by the lack of assurance of an adequate program for removal of the H_2S nuisance. Dr. Howard E. Hesketh, in a letter and calculations dated August 24, 1972 points out that his assumed nuisance level of H_2S (0.007 ppm) will be just met at 75% H_2S control and at a wind speed of 11 mph and neutral stability. Since the average wind speed in the Chicago area is about 11 mph this means that approximately 50% of the time or more wind speeds will be below 11 mph and ground level H_2S consequently above 0.007 ppm. Since only half of the wind directions will cause an impingement upon residences we can say that the nuisance will continue to exist about 25% of the time (half of a half). Furthermore nothing is being done about carbon disulfide and in fact Dr. Hesketh points out that this pollutant will help mask the H_2S . The Agency is still free, of course, to bring an action on CS_2 if it computes dangerous ground level concentrations and we urge that they look closely at this pollutant.

But we feel that 75% control of H_2S is better than no control as is the present situation. And if the Cataban process is not used, the alternate alkaline scrubber can remove up to 90% of the H_2S .

It is further stipulated that Carbide will post a performance bond of \$1,500,000 and will pay a civil penalty not to exceed \$10,000.


We find the settlement to be acceptable. The May transcripts show severe air pollution and annoyance to residents but there appears to have been steady progress made by Carbide during the past two years. According to the settlement agreement, there will be even more achievement within the new few years. We also understand that since the Cataban process is somewhat new, the progress of its application may proceed less quickly than desirable. We do, however, expect that all efforts be made to move forward as rapidly as possible under the circumstances. Furthermore, the citizens who attended the hearing and who are the ones most directly affected by the problem seemed to be pleased with the settlement.

This opinion constitutes the Board's findings of facts and conclusions of law.

ORDER

1. The Stipulation and Proposal for Settlement are accepted.
2. Carbide shall post a performance bond of \$1,500,000 according to the terms of said Settlement.
3. Carbide shall pay to the State of Illinois by October 27, 1972 the sum of \$10,000 as a civil penalty. Penalty payment by certified check or money order payable to the State of Illinois shall be made to: Fiscal Services Division, Illinois Environmental Protection Agency, 2200 Churchill Drive, Springfield, Illinois 62706.
4. This order does not protect Carbide from action by the Agency if the program still results in air pollution.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 25th day of October, 1972 by a vote of 4-0.


Christan L. Moffett, Clerk
Illinois Pollution Control Board