

ILLINOIS POLLUTION CONTROL BOARD
October 4, 1979

ALLIED CHEMICAL CORPORATION,)
)
) Petitioner,)
)
) v.) PCB 79-101
)
) ENVIRONMENTAL PROTECTION AGENCY,)
)
) Respondent.)

OPINION OF THE BOARD (by Dr. Satchell):

This matter comes before the Board upon a petition for variance filed April 26, 1979 and amendments filed June 1 and August 29, 1979 by Allied Chemical Company (Allied). The petition and amendments request a variance from the requirements of Rule 105(c), 204(f)(1)(A) and 204(f)(2)(A) of Chapter 2: Air Pollution. Rule 105(c) provides for operation of an emission source during malfunction, breakdown or startup. The sub-sections of Rule 204(f) set emission limits of 2000 ppm for sulfur dioxide and 0.15 pounds of sulfuric acid mist per ton of acid manufactured. Allied waived its right to a hearing and the Environmental Protection Agency (Agency) filed a recommendation on July 19, 1979 and an amended recommendation on September 18, 1979. The latter recommended that the variance be granted with conditions. On September 20, 1979, pursuant to Allied's motion for expedited consideration, the Board entered an Order granting the variance with conditions similar to those recommended by the Agency.

Allied operates a three-unit sulfuric acid plant at its Calumet Works in a mixed industrial and residential area south of Chicago. The plant produces a waste gas stream which is passed through a Wellman-Lord sulfur dioxide recovery system which is designed to handle 35,000 scfm with 3000 to 5000 ppm sulfur dioxide and 2100 mg/m³ acid mist and which recovers sulfuric acid and converts the sulfur dioxide to a useable byproduct. When operating, the system emits 20 to 500 ppm sulfur dioxide and 15 mg/m³ acid mist through a 120 foot stack (Amended Rec. 2). The system has been in service for six years and is in need of major repairs which are scheduled for the month of October, 1979. Rather than shut the plant down for this period, Allied proposes to duct its emissions directly to the atmosphere through a fifty-five foot stack. Air Rule 105(c) provides for continued operation to prevent injury to

persons, severe damage to equipment or to provide essential services. Even if this were a malfunction or breakdown, the Agency could not grant permission under Rule 105(c) to operate in violation of standards solely for the economic benefit of the operator.

The Agency figures the uncontrolled average emissions at 2700 ppm or 866 lbs/hr sulfur dioxide and 2100 mg/m³ or 236 lbs/hr acid mist. Maximum emissions could amount to 1284 and 642 lbs/hr, respectively. The Agency has predicted the results of the uncontrolled emissions on air quality for 400 points in a 20 x 20 kilometer area by means of an Air Quality Short Term Model--Running Average Version. The results of this modeling indicated that the 24-hr averaging time was the most constraining and that, after eliminating the single highest value, the second highest 24-hr average ambient air concentration resulting from uncontrolled emissions would be 604 mg/m³. Adding the background concentration, the Agency arrived at a predicted maximum 24-hr average concentration of 624 mg/m³ sulfur dioxide. The attainment status of the area around the plant for the sulfur dioxide National Ambient Air Quality Standards (NAAQS) is listed as "Cannot Be Classified" [43 Fed. Reg. 8987 (1978)]. The 24-hr NAAQS is 365 mg/m³ sulfur dioxide.


The Agency model also predicted that excursions above the NAAQS for sulfur dioxide will occur from the fifty-five foot stack only when the wind blows in excess of fifteen knots in one direction for more than three hours and the sulfur dioxide emission rate is in excess of 736 lbs/hr. Accordingly, the Agency recommended that the variance be conditioned on a wind and sulfur dioxide monitoring program. The Board also required that Allied limit its emissions when the wind exceeded fifteen knots in one direction for more than three hours. Allied will be expected to reduce its process rate if necessary to achieve this.

Bringing the plant to a cold shutdown may cause layoffs and damage to equipment and will result in a startup with high energy consumption and emissions. The Board finds that there would be, under the particular circumstances of this case, an arbitrary and unreasonable hardship in requiring compliance with the emission standards during the maintenance shutdown of the waste gas recovery system. This variance may be granted only if consistent with the Federal Clean Air Act (42 U.S.C. §7401 et seq. and § 35 of the Environmental Protection Act). Since it will extend beyond July 1, 1979, it will be submitted to the U. S. Environmental Protection Agency as an amendment to the State Implementation Plan.

This Opinion, supporting the Order of September 20, 1979, constitutes the Board's findings of fact and conclusions of law in this matter.

Mr. Werner concurs.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion was adopted on the 4th day of October, 1979 by a vote of 4-0.



Christan L. Moffett, Clerk
Illinois Pollution Control Board