

ILLINOIS POLLUTION CONTROL BOARD
January 10, 1980

CLARK OIL & REFINING CORPORATION,)
)
 Petitioner,)
)
 v.) PCB 79-181
)
 ENVIRONMENTAL PROTECTION AGENCY,)
)
 Respondent.)

MR. JOHN T. BERNBOM APPEARED ON BEHALF OF PETITIONER;
MS. ALICE NUSSBAUM, ASSISTANT ATTORNEY GENERAL, APPEARED ON
BEHALF OF RESPONDENT.

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

On August 31, 1979 Petitioner Clark Oil & Refining Corporation (Clark) filed a petition for variance before the Board requesting variance from Rules 204(f)(1) and 205(g)(1) of Chapter 2: Air Pollution Control Regulations of the Illinois Pollution Control Board as they apply to Clark's Blue Island refinery located at 131st and Kedzie, Blue Island, Cook County, Illinois. The Environmental Protection Agency (Agency) filed its recommendation and hearing was held on November 27, 1979; no citizens appeared at hearing and the Board has received no public comment in this matter. On October 30, 1979 Clark filed an amendment to the petition withdrawing Clark's request for a variance from the hydrocarbon standards of Rule 205(g)(1)(C) due to the fact that compliance has been achieved by Clark; therefore, variance from the hydrocarbon limitation is no longer necessary.

The subject facility is a low sulfur oil refinery which processes approximately 70,000 barrels of crude oil per day utilizing a fuel gas desulfurization process known as the Stretford technology which converts the hydrogen sulfide gas into elemental sulfur. Prior to 1970, the facility had a history of odor emissions which were predominantly composed of hydrogen sulfide gas. In the early 1970's a survey of the facility's fuel gas system determined that the sulfur dioxide emission levels from the refinery were in compliance with the existing standard. Due to an increasing sulfur content of its incoming crude oil and due to an increasing number of odor complaints, Clark decided that sulfur removal from the fuel

gas system would be required for future compliance. After evaluation of various sulfur removal technologies, the Stretford process of desulfurization was chosen. The equipment was put in operation in April of 1976. After a short period of operation Clark discovered that the fuel gas desulfurization system was experiencing numerous problems and that the facility was not in compliance with the hydrocarbon emission standards of Rule 205(g)(1)(C).

Clark developed a program to redesign and modify the system which was completed in 1978 at an approximate cost of \$250,000. Subsequent test results indicated compliance with the standards; however, the redesigned system proved to be unreliable and was incapable of continuous desulfurization of the off gases due to previously existing mechanical chemical and biological problems with the Stretford unit. Clark now proposes a new program which it is confident will correct the operational problems of the Stretford unit and will improve the system's effectiveness consistently with continuous compliance with the sulfur dioxide standard. If at the end of this proposed program compliance is not obtained, Clark will stop financial commitments to the unit using the Stretford process and will proceed with replacement of the unit using other sulfur removal technology.

In its investigation the Agency solicited views of persons who might be adversely affected by this variance petition and received no responses. No complaint has been reported to the Agency since a single complaint was logged in June 19, 1978. In its recommendation the Agency agrees with the facts as alleged by Clark in its petition and amendments thereto.

The nearest sulfur dioxide monitoring station is located at Eisenhower High School in Blue Island, which is approximately one-half mile north of the facility. In 1978 only one excursion of the 24-hour primary standard was recorded, so that the Blue Island site is considered not in violation of this ambient air quality standard. The annual arithmetic mean reported at the sampling station for 1978 was 0.016 ppm, whereas the primary ambient air quality standard for sulfur dioxide is 0.03 ppm. This one excursion for the 24-hour maximum concentration was recorded at 0.164 ppm, whereas the primary ambient air quality standard for the 24-hour maximum concentration is 0.14 ppm. Worth Township is presently unclassified as either an attainment or a nonattainment area as to sulfur dioxide.

Allowable sulfur dioxide emissions under Rule 204(f)(1)(A) are 2,000 ppm or 724 tons per year. The Agency estimates that the maximum sulfur dioxide emissions from the Blue Island facility when the Stretford unit is not in operation are 2,489 ppm, or 901 tons per year. Since there were no ambient air quality violations during the numerous times that the sulfur

dioxide emission standards were exceeded due to malfunctions of the facility, and since it is expected that there will be fewer excursions of the sulfur dioxide standards as Clark corrects the problems, the Agency believes that a variance will not result in a violation of the ambient air quality standards.

Clark alleges that it has spent sizeable amounts of money and considerable effort to properly operate the Stretford unit so as to meet the present standards. The Stretford process unit was originally installed due to the limited area of space available for installation of desulfurization equipment. If the proposed variance is not granted, Clark alleges that it will be forced to abandon a project that has cost approximately \$5 million and a technology that may provide alternatives for other small refineries. Clark further alleges that any other alternative technology for sulfur removal will take until 1982 to become operable and will cost approximately \$8 million.

The Board finds that denial of the proposed variance would impose an arbitrary and unreasonable hardship upon Clark. Clark is attempting to utilize an innovative process to desulfurize the off gases of one process in order to utilize them as fuel for other processes. One alternative available to Clark is to flare off the sour process off gases and use natural gas or low sulfur fuel oil in its refinery combustion units. The alternative of flaring a useful energy source and utilizing natural gas and/or lower sulfur fuel oil as the energy source for the other processes is to the Board not only unreasonable, but a wasteful use of energy sources that are presently in short supply. The evidence indicates that the harm to the environment should the proposed variance be granted would be minimal. On balance, the Board finds that granting the variance to allow Clark to perfect the Stretford process of fuel gas desulfurization is the most beneficial resolution of this situation. The Board therefore grants variance from Rule 204(f)(1)(A) until June 30, 1981 under certain conditions.

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

ORDER

Finding that Clark Oil & Refining Corporation is unable to comply with the Board's regulations at this time and finding that the proposed variance will not interfere with the attainment or maintenance of ambient air quality standards in the area, the Board hereby grants variance from Rule 204(f)(1)(A) until June 30, 1981 for the Clark Oil & Refining Corporation facility at Blue Island, Cook County, Illinois, under the following conditions:

- A) Emissions of sulfur dioxide into the atmosphere from any process emission source shall not exceed 2500 ppm at any time.
- B) Clark Oil & Refining Corporation shall execute the compliance program contained in Exhibit F to this proceeding, which Exhibit is hereby incorporated by reference as if fully set forth herein.
- C) Clark Oil & Refining Corporation shall submit program reports on a monthly basis to the Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, Illinois 62706, relating the present operating condition of the fuel gas desulfurization unit and the status of the compliance program.
- D) If the fuel gas desulfurization system is not operable so as to achieve continuous compliance with the sulfur dioxide standards by the end of the term of this variance, Clark Oil & Refining Corporation shall submit a plan to the Agency regarding an alternative technology for treating the subject process off gases.
- E) Within 45 days of the adoption of this Order, Clark Oil & Refining Corporation shall execute and forward to the Illinois Environmental Protection Agency at the address listed in paragraph (C) above, a Certification of Acceptance and Agreement to be bound to all of terms and conditions of this Order. The 45 day period shall be held in abeyance during any period this matter is being appealed. The form of said certification shall be as follows:

CERTIFICATION

I (We), _____, having read and fully understanding the Order of the Illinois Pollution Control Board in PCB 79-181, hereby accept said Order and agree to be bound by all of the terms and conditions thereof.

SIGNED _____

TITLE _____

DATE _____

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 10th day of January, 1980 by a vote of 4-0.

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