

ILLINOIS POLLUTION CONTROL BOARD  
May 8, 1975

ILLINOIS BRICK COMPANY, a Division )  
of Old Fort Industries, Inc., )  
 )  
Petitioner, )  
 )  
vs. ) PCB 74-241  
 )  
ENVIRONMENTAL PROTECTION AGENCY, )  
 )  
Respondent. )

PATRICK PHILLIPS, Attorney for Petitioner  
KATHRYN NESBURG, Attorney for Respondent

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

On June 25, 1974 Illinois Brick filed Petition for Variance seeking relief from Sections 9(a) and 9(b) of the Environmental Protection Act and Rule 103(b)(2) of the Air Pollution Control Regulations. The Board found that petition to be inadequate because there was no data regarding ambient levels of hydrogen sulfide both upwind and downwind of Petitioner's plant. Illinois Brick was ordered to supply such additional data.

In August 1974 Petitioner advised the Board that it had made arrangements for testing of the air around the plant, and sought approval of the test method proposed by its testing firm. The Board approved the proposed testing method and allowed Illinois Brick until September 25, 1974 to file the required test results.

The hydrogen sulfide test results were timely filed. Two tests were conducted during separate blow-down periods. The first test showed an average hydrogen sulfide concentration of 30 parts per billion (ppb) downwind and 4 ppb upwind. On the second test, downwind and upwind concentrations each averaged 5 ppb.

Subsequently Illinois Brick filed an Amended Petition requesting variance to March 1, 1975 and a motion seeking the grant of such relief without a public hearing. The Board denied the motion for decision without hearing. On March 18, 1975 Illinois

Brick filed its Second Amendment to Petition for Variance seeking relief until May 1, 1975. Public hearing on the Second Amendment to Petition for Variance was conducted on March 19, 1975.

Petitioner owns and operates a concrete block manufacturing facility in Broadview, Cook County, Illinois. In the block making process, Petitioner mixes slag, limestone screenings, cement, silica flour and water to form "green" building blocks. Slag for the blocks is obtained from the mills of U. S. Steel Company. The quantities of raw materials used daily at the plant are as follows:

<u>Material</u>	<u>Quantity</u>
Fine slag	560,000 lbs.
Coarse slag	140,000 lbs.
Limestone screenings	140,000 lbs.
Cement	50,400 lbs.
Silica flour	50,400 lbs.
Water	60,000 gallons

Once formed, the blocks are then cured for about 4 1/2 hours in one of four heated autoclaves (high pressure steam curing vessel) by application of 150 psig steam to the blocks. In the final 30 to 40 minutes of the curing process, steam and other gasses, including hydrogen sulfide, are released. U. S. Steel analysis of the steel mill slag and Petitioner's blocks showed a sulfur content of 0.76% in the slag and 0.70% in the cured blocks. This means that 0.06% sulfur is lost during the curing process.

In 1970 Illinois Brick determined that the volume of odor producing gasses could be reduced if the steam were condensed and not released to the atmosphere. A condensing system installed in November 1971 worked satisfactorily until sections of the condenser corroded and began to leak. Petitioner kept the system in operation until late 1973 or early 1974 by replacing corroded parts but eventually had to abandon the whole condenser system because of excessive corrosion.

A new system utilizing a stainless steel air-cooled condenser was ordered on October 26, 1973. Piping changes were made to route all liquid and gaseous wastes to a single retention basin.

Delivery of the air cooled condenser was expected by July 1, 1974.

In the meantime, in December 1973, Illinois Brick applied to the Agency for an operating permit. This was denied because the Agency believed Petitioner's discharges were causing air pollution. A permit for installation of the new condenser system was granted by the Agency in August 1974.

The \$45,000 project was delayed because the condenser was not actually delivered until September 17, 1974. On October 15, 1974 the new condenser was given its first trial (R. 19). Within a few days Petitioner began to experience minor problems which appeared to be corrected by calibration of certain associated equipment. Problems continued, however, and Petitioner sought to correct the problems by making certain modifications to the piping in an effort to supply a greater quantity of steam to the condenser.

When these modifications failed to solve the operational problems, the condenser was partially dismantled and found to be clogged with scale. Several of the clogged pipes had ruptured during freezing weather. Further modifications were made to provide a high pressure water backflush system to clear the scale and to provide a steam line to heat the unit between blow-downs and on weekends during freezing weather.

As the system now stands, blow-down steam and gasses are piped to the air condenser where the steam is condensed to water. Some of the gasses are dissolved in the condensed water prior to discharge of the water to a sump inside the plant. Although the sump is open, doors and windows of the room in which the sump is located are not normally open. From the sump, the water flows to a vented retention basin where treatment chemicals are added prior to discharge of the water to a sanitary sewer system. A bypass on the system has been used several times in the past to vent steam and gasses to the atmosphere during periods of malfunction.

Petitioner's Vice President in charge of concrete operations, Clyde Stewart, testified that he did not know if any odorous emissions were released through the retention basin vent (R. 31). Complaints from nearby residents about the hydrogen sulfide odor are handled by Stewart. He testified that he had received complaints from the residents over a period of years, and the Company reacted to these complaints with its efforts, beginning in 1970. Stewart has not detected any hydrogen sulfide odors near the plant since the modified air condenser was placed in operation (R. 41).

Nine citizens, mostly nearby residents, testified about the impact of the "rotten egg odor". Clares Danek, Village Manager for Westchester, testified that, according to Village records, the odors had been prevalent in Westchester since 1961 (R. 51). Witnesses testified to having been awakened at night (R. 58, 60, 79) and to having suffered physical effects such as labored breathing, allergic reactions, headaches and tearing of eyes (R. 57, 63, 73 and 79). Kenneth Kirkham, a school principal, testified that the odor interferes with study at his school which is located about one block from the plant.

Only one of the citizen witnesses noticed the odor in the last several weeks. Suzanne Lag testified that she has noticed the odor recently while jogging in the morning hours but the odor did not seem as heavy as before (R. 74). Several citizens expressed concern over how long Illinois Brick would take to control the odorous emissions if the new air condenser system failed.

Illinois Brick believes it has solved its odor discharge problem. Another test program will be conducted on April 15, 1975. Nearby residents will be consulted when the modified system is evaluated (R. 33).

Early in this proceeding Petitioner advised that several alternative systems were being reviewed in the event the air condenser system failed to adequately control the odors. These secondary systems included: a) burning of the waste gasses in the plant's boilers, b) a scrubbing system, c) treatment with activated carbon, d) reformulation of the block mixture, e) the addition of chemicals to eliminate the odors.

Stewart testified that Illinois Brick had tried neutralizing agents and chemical masking agents without success (R. 14). Reformulation of the block mixture has also been ruled out because of economics (R. 40). Without specifying which system would be used, Stewart testified that the secondary system would take from 30 to 60 days for design and the ordering of materials, and from three to six months for delivery.

No Agency witness testified at the public hearing. Although the Agency believes Illinois Brick has made a good faith effort to control its emissions, the Agency recommends denial of this variance.

The Agency is reluctant to recommend variance from Section 9(a) of the Act because it would "preclude aggrieved citizens from bringing an enforcement action". Uncertainty about the condenser operation is cited as the reason why variance from Section 9(b) of the Act and Rule 103(b)(2) is not recommended by the Agency.

According to the Agency, hydrogen sulfide is both an irritant and asphyxiant. At concentrations from 20 ppm to 150 ppm it can cause irritation of the eye. Based on the number and content of complaints the Agency has received, the Agency believes that nearby residents have endured unreasonable interference with life and property for a number of years. Interviews with these citizens did not reveal any objections to allowing Illinois Brick until January 1, 1975 to implement its control program.

The record does not show what action Illinois Brick took to alleviate the odorous emissions prior to 1970, but does indicate that Illinois Brick has been responsive to the complaints since 1970. Illinois Brick believes that its steam condensing system is now capable of eliminating the hydrogen sulfide emissions and that it will not be necessary to implement any further control procedures.

The April 15, 1975 tests and citizen comments should be a good indicator of the effectiveness of this system. Citizen testimony leads us to believe that most of the odors have already been eliminated. The record does not show that any of Petitioner's neighbors object to the granting of this variance.

The first ambient sampling tests reveal considerably less than the 20 ppm to 150 ppm which has been cited by the Agency as capable of causing eye irritations. It is apparent from citizen testimony, however, that Petitioner's emissions have been of sufficient concentrations in the past to interfere with the enjoyment of life and property. For this reason, the Agency will be keenly interested in reviewing the data and results of the April 15, 1975 test, especially that part of the test involving citizen comments.

It is the opinion of the Board that Illinois Brick has met the requirements for the grant of variance. Variance will be conditioned upon submission of the April 15, 1975 test data and a report of citizen comments about the effectiveness of the control program.

This Opinion constitutes the findings of fact and conclusions of law of the Illinois Pollution Control Board.


#### ORDER

It is the Order of the Pollution Control Board that Illinois Brick Company be granted variance from Section 9(a) and Section 9(b) of the Environmental Protection Act and Rule 103(b)(2) of

the Air Pollution Control Regulations from June 25, 1974 until May 1, 1975. This variance is subject to the following conditions:

1. As soon as data from the April 15, 1975 air quality test is available to Illinois Brick, the Petitioner shall submit copies to the Agency.
2. Illinois Brick shall submit a report to the Agency discussing all citizen comments obtained during and immediately after the April 15, 1975 test project. This report shall be submitted along with the air quality test data.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 8<sup>th</sup> day of May, 1975 by a vote of 5-0.

  
Christan L. Moffett, Clerk  
Illinois Pollution Control Board