

ILLINOIS POLLUTION CONTROL BOARD

November 15, 1973

MEDUSA CORPORATION,)
)
 Petitioner,)
)
 v.) PCB 73-337
)
 ENVIRONMENTAL PROTECTION AGENCY,)
)
 Respondent)

William H. Wallace, Attorney for Petitioner
Lee Campbell, Assistant Attorney General for the EPA

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

Medusa Corporation filed a Petition for Variance requesting relief from Rules 202(b) (visual emission standard), 203(b) and 203(d)(3) (particulate standards) and 203(i) (compliance dates) of the Air Pollution Control Regulations until March 31, 1975, pending installation of air pollution control equipment at its cement manufacturing plant located near Dixon, Illinois. A public hearing was held on October 4, 1973.

At this plant, one of seven cement plants in the Medusa cement division, Petitioner manufactures 10 different types of cement and cement products. The plant began operations in 1961 and currently has a manufacturing capacity of 3.2 million barrels per year. Petitioner's Dixon plant produces 30% of the cement manufactured in Illinois and 15% of all cement consumed in Illinois (R.89). An average of 183 persons are employed at the plant which operates 24 hours a day year around.

Petitioner uses a dry manufacturing process for producing portland cement. Limestone, clay, sand, power house slag and gypsum are the principle ingredients. After being crushed, dried and ground, the raw feed material is introduced into one of the four rotary cement kilns. The kiln heats the raw feed to about 2700° F. by the combustion of coal and/or gas to convert the calcium carbonate (limestone) to calcium oxide, a process known as limestone calcining. The calcium oxide then combines with the other raw feed ingredients to form "clinker", the basic component of cement.

The clinker is discharged to clinker coolers which, in this case, are oscillating grates through which ambient air is passed

to absorb heat from the clinker. Part of the heated air is returned to the kilns for use as preheated combustion air. Excess heated air is vented through dust collectors to the atmosphere. The clinker coolers for kilns 1, 2 and 3 are equipped with Buell L-R settling chamber type collectors. The clinker cooler for kiln 4 is equipped with a Western-Precipitation multiclone.

Charles L. Howlett, Vice President of Operations, Cement Division of Medusa Corporation, testified that the emission control devices on the 4 clinker coolers provide efficient control during normal operations but could not meet the regulatory limits during periods of kiln upset or control equipment malfunction. Howlett testified that such upsets occur when there are changes in the chemistry of the raw materials or fuel or when the ratio of coal to gas is changed. The upsets result in the raw material being "overburned" or "underburned". When overburning occurs, the clinker becomes molten and "goes over the end of the kiln". If the raw material is underburned, "the raw mix doesn't clinker and comes over the nose of the kiln in the form of dust...that's only partially calcined". Howlett estimated that such upsets occur during less than 3% of the annual operating period.

Petitioner stated that emissions from the clinker coolers "may exceed the Board's emission standards" during periods of kiln upset, but that measurement of emissions is impossible during these brief periods. Using standard emission factors and information from Petitioner's operating permit applications, the Environmental Protection Agency calculated Petitioner's emissions from the clinker coolers to be 433.6 lbs./hr. We were unable to determine whether the Agency represented this figure to be emissions during normal operations or during upset periods or the average emission for all operations. Under Rule 3-3.111 of the Rules and Regulations Governing the Control of Air Pollution, Petitioner is allowed 112.58 lbs./hr. from the clinker coolers until December 31, 1973. After that date, Petitioner's aggregate allowable emission rate under Rule 203(b) of the Rules will be 47.37 lbs./hr.

Because the excessive emissions could not be controlled before the December 31, 1973 compliance date, Petitioner's application for operating permits was denied by the Agency on April 2, 1973.

Petitioner previously held a variance while baghouses were installed on the three preheater kilns (kilns 1, 2 and 3). Sometime during the Fall of 1972 Petitioner decided that baghouses would also be required to control emissions from the clinker coolers (R. 80) and \$600,000 was budgeted for the project. Preliminary engineering investigations began immediately and manufacturers of control equipment were contacted in March 1973. The original

proposal called for the installation of separate baghouses for each clinker cooler to be located on top of the "burner building" (R. 74). Bids received in April 1973 caused Petitioner to re-evaluate the project and to change the location and basic design of the baghouses. Petitioner decided to install one large baghouse outside the burner building and use duct work capable of moving 185,000 cubic feet of air per minute. The large baghouse will have two chambers for each clinker cooler, so that one chamber for each cooler can be in operation while the other is being cleaned or repaired.

Revised proposals were sent out in September 1973 and several bids have been received. Although Petitioner has not yet made a final decision on the bids the Medusa Corporation has authorized the expenditure of \$1,203,000 for the project (Petitioner Exhibit J1-J2).

An EPA engineer investigating Petitioner's plant on August 22, 1973 observed the startup of kiln #1 which had been down for removal of a mud ring. Emissions from the clinker cooler appeared to have an opacity of 100% at 10:30 a.m., but this had been reduced to about 50% by 2:00 p.m. Particulate emissions from the other operating clinker coolers appeared negligible. Emissions from a 307' stack venting the gasses from preheaters #1, 2 and 3 were observed to vary from 30% to 50% opacity. The Agency investigator was informed that some of the bags in the baghouse were torn and that this caused the high opacity readings. The torn bags are being replaced.

The Agency has recommended grant of the variance but only until September 1, 1974. Although the Agency is of the opinion that Petitioner's proposed program will bring the plant into compliance with the Regulations, the Agency contends that Petitioner's Project Completion Schedule is unreasonably long. The Agency position was based on a time table contained in a draft copy of a U. S. EPA publication. This draft publication indicated that a baghouse installation on a cement kiln could reasonably be expected to take about 68 weeks.

Robert Goldberg, Manager of EPA's Variance Section testified that the proposed 9 month period for equipment fabrication and delivery was excessive. Goldberg stated that 26 weeks would be a more realistic time period (R. 111). Four bids introduced into evidence support Goldberg's contention and in fact, show six months as the maximum delivery period anticipated by any of the four companies submitting bids. However, Goldberg added that the Agency had not been provided certain information when drafting the Recommendation which, if now considered, could possibly alter the Agency position. The missing information pertained to electrical hardware for which delivery was not as predictable.

The Agency presented two letters from citizens who felt that Medusa should not receive the variance. The letters describe the soiling and damage to property experienced as a result of the cement dust emissions. Mrs. Ralph C. Davis stated that she dreaded to think what it would be like if Medusa were granted a variance "which would increase their emissions". The variance, however, will not allow Petitioner to increase emissions but only to continue emissions at the same or lower rate pending installation of control equipment. We would also advise Mr. L. H. Petersen that, contrary to his understanding, Medusa was not asking until March 3, 1975 to begin the project. One witness at the public hearing testified about his experiences with the cement dust emissions. While he opposed the granting of a variance, he stated that his problem would not justify closing the plant.

Testimony and letters in favor of granting the variance came from the Illinois State Toll Highway Authority, the mayor of Dixon, the Dixon Chamber of Commerce, managers of Ready-Mix Concrete plants, the Union secretary representing workers at the plant, employees and others. A summary of this testimony would show that the loss of cement produced by Medusa at its Dixon plant would severely damage the road construction industry in Illinois. On the whole, Medusa was characterized as a good industry and good neighbor for the Dixon community and as an industry that has shown good faith over the years in trying to control its emissions.

Petitioner also introduced several documents which purport to show cement dust is not a lung irritant and that inhalation of cement dust is harmless to the lungs and to general health. The Agency did not respond to this point.

Petitioner did not request variance from Rule 3-3.111 of the Rules and Regulations Governing the Control of Air Pollution, which Rule is applicable to the plant's operations until December 31, 1973. The Company is allowed higher emissions under Rule 3-3.111 than will be allowed under Rule 203(b).

From the entire record, we believe Petitioner should have a variance. A denial of variance could cause substantial hardship to Medusa and others in the State far outweighing environmental damage caused by plant operations. We shall grant the variance but only until November 15, 1974, since that is the limit allowed by Statute. If additional time is required, Medusa should file another variance request at least 90 days prior to the expiration date of this variance. An extension of this variance should not be considered automatic. Petitioner shall have to prove to this Board that it has diligently pursued the compliance plan and project completion schedule that we approve today.

ORDER

It is the order of the Board that:

1. Medusa Corporation is granted variance from Rules 202(b), 203(b), 203(d)(3) and 203(i) of the Air Pollution Control Regulations for four (4) clinker coolers at its Dixon cement manufacturing plant until November 15, 1974 pending installation of a baghouse to control particulate emissions from the four clinker coolers.
2. Medusa shall, by December 20, 1973, post a bond in the amount of \$100,000 in a form acceptable to the Environmental Protection Agency, such bond to be forfeited in the event the baghouse control device is not installed as described during these proceedings. The bond shall be mailed to Fiscal Services Division, Illinois EPA, 2200 Churchill Road, Springfield, Illinois 62706.
3. Beginning January 1, 1974, Medusa shall submit quarterly progress reports to the Variance Section of the Environmental Protection Agency. Such reports shall detail all progress toward completion of the clinker cooler baghouse project.
4. Medusa shall attempt to expedite completion of the baghouse project and shall report such efforts in its quarterly report to the Agency.
5. Medusa shall apply for all necessary construction and operating permits for its Dixon plant.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order was adopted this 15th day of November 1973 by a vote of 5 to 0.

Christan L. Moffett