

ILLINOIS POLLUTION CONTROL BOARD
April 17, 1973

ENVIRONMENTAL PROTECTION AGENCY,)
)
 Complainant,)
)
 v.) PCB 72-470
)
 CHICAGO MAGNESIUM CASTINGS COMPANY,)
)
 Respondent.)

James I. Rubin, Assistant Attorney General, on behalf of
Environmental Protection Agency;
George P. Sullivan, on behalf of Chicago Magnesium Castings
Company.

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

By complaint filed on December 1, 1972, the Environmental Protection Agency ("Agency") charged Chicago Magnesium Casting Company ("Chicago Magnesium") with violation of Section 9(a) of the Environmental Protection Act (Ill. Rev. Stat., Ch. 111-1/2, § 1009(a)). Specifically, Chicago Magnesium is charged with causing and allowing the emission of contaminants (noxious and objectionable gaseous agents) into the ambient air in sufficient quantities and of such characteristics and duration as to unreasonably interfere with the enjoyment of life and property.

This action comes before the Board on an Agreed Statement of Facts.

Chicago Magnesium Casting Company owns and operates a facility for the manufacture of castings, primarily of magnesium alloys at 14100 South Seeley, Blue Island, Illinois. Among the manufacturing operations conducted at Chicago Magnesium is the pouring of molten magnesium alloys into molds. The manufacture of magnesium alloys often results in air pollution emission problems during the pouring operations.

The standard operating practice in a sand foundry for magnesium base alloys is to prepare the molten metal, to use sulphur dioxide (SO₂) gas or a dusting of sulphur (S) powder at the pouring station and finally to protect the molten metal in the mold by S admixed with the sand. These various agents are

objectionable because they can be a source of atmospheric pollution.

On July 6, 1970, Messrs. Steven Rosenthal and Maxim Rice, engineers of the Agency investigated a complaint of odors in the vicinity of Chicago Magnesium. At this time, one Mrs. William Kempfer complained to the Agency investigators of a "sulphurous, burning and rotten odor that could make one nauseous." At this time, according to the Agreed Statement of Facts, Mr. Donald Burnett, President of Chicago Magnesium, explained to the Agency investigators that some sulphur (about 1%) is in the sand used in the molds. He admitted that some of this sulphur can escape into the atmosphere during the pouring processes. At that meeting, Burnett informed the Agency that Chicago Magnesium was aware of the odor problem and had been working with the Cook County Air Pollution Control Bureau in an effort to control the sulphurous emissions. Chicago Magnesium had conducted air sampling studies in the vicinity of the plant and had attempted odor masking to abate the odors. Burnett also indicated that he was cooperating with the owner of a nearby mobile home trailer court through an agreement to shut down operations at Chicago Magnesium when the odors became objectionable at the trailer court.

On January 24, 1972, Mr. Steven Rosenthal and Mr. Timothy Antonoplos of the Agency again visited Chicago Magnesium. During this visit, according to the Agreed Statement of Facts, Mr. Calvin Trock, Superintendent of manufacturing operations at Chicago Magnesium, admitted that sulphurous odors do occur and are emitted during pouring operations.

During this visit, the Agency investigators detected a strong, smoky odor approximately 100 yards downwind of Chicago Magnesium. They also observed the haze coming from the West exhaust fan on Chicago Magnesium and drifting toward the trailer court which stands approximately 400 feet to the north. During this visit, the Agency investigators interviewed several residents of the nearby trailer court. According to the Agreed Statement of Facts, a number of the residents complained of strong odors from Chicago Magnesium.

In June, 1972, Mr. Burnett attended a seminar which was addressed by Doctor J. D. Hanawalt, Professor of Metallurgical Engineering at the University of Michigan. At that seminar, Dr. Hanawalt described his on-going research into the use of sulphur hexafluoride (SF_6) to replace the use of sulphur as an inhibitor for molten magnesium. Dr. Hanawalt's paper submitted at the seminar described the intent of his study as the elimination of the necessity for the S agent in the sand. Subsequent to the seminar, Mr. Burnett personally discussed with Dr. Hanawalt the introduction of SF_6 to replace S in the production processes at Chicago Magnesium.

In July, 1972, according to the Agreed Statement of Facts, Chicago Magnesium initiated the use of SF₆ and abandoned the use of S as an agent in its process. Since that date, Chicago Magnesium has not received any complaints from the owner or the residents of the nearby trailer court regarding odorous emissions from Chicago Magnesium. To introduce SF₆ and replace S as an agent has cost Chicago Magnesium approximately \$3,500.

On December 1, 1972, the Agency filed a complaint against Chicago Magnesium alleging a violation of Section 9(a) of the Environmental Protection Act. On February 6, 1973, Mr. Steven Rosenthal of the Agency again visited the Chicago Magnesium plant and premises. He noted, according to the Agreed Statement of Facts, that sulphur emissions had been effectively abated from the Chicago Magnesium processes. Nor, upon inquiry, did he receive any complaints from the residents of the trailer court. In addition, the residents of the nearby trailer court had no complaints as to the operations of Chicago Magnesium since July, 1972. Chicago Magnesium has begun filing the appropriate applications in order to obtain an Operating Permit for its facility in Blue Island. These Permit Applications are presently being subjected to the Agency review procedures.

According to the Agreed Statement of Facts, if Steven J. Rosenthal testified, he would state as follows:

- a) that he is an engineer employed by the Environmental Protection Agency;
- b) that he had detected strong odors emanating from Chicago Magnesium during both his original visits but that on February 6, 1973, the odors had been effectively abated;
- c) that prior to utilization of SF₆, there was no reasonable means for controlling SO₂ emissions from magnesium foundries.

Chicago Magnesium has stipulated its intention to continue the use of SF₆ rather than S as an agent in its production processes. Chicago Magnesium further stipulates that it will neither abandon the use of SF₆ nor reinstate the use of S as an agent without obtaining an appropriate Operating Permit from the Agency.

We find from the evidence that Chicago Magnesium has violated Section 9(a) of the Environmental Protection Act. We also find, however, that Respondent has made significant efforts to improve the situation and therefore a penalty of \$1,000 would be appropriate.

This opinion constitutes the findings of fact and conclusions of law of the Board.

ORDER

IT IS THE ORDER of the Pollution Control Board that:

1. Respondent shall cease and desist from all violations found in this opinion.

2. Respondent shall continue and adhere to its remedial program as set forth in this opinion and the Agreed Statement of Facts.

3. Respondent shall pay to the State of Illinois by May 20, 1972 the sum of \$1,000. 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 Road, Springfield, Illinois 62706.

4. Respondent shall, within 60 days, obtain the appropriate operating permit for its facility in Blue Island, Illinois.

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, certify that the above Opinion and Order was adopted by the Board on the 17th day of April, 1973, by a vote of 3 to 0.

Christan L. Moffett