

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL

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VICE OF THE
SECRETARY

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DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

ORDER NO.: 77-A-8

Date of Issuance: December 2, 1977

RE: Variance Request by Phoenix Steel Corporation

BACKGROUND

1. In an application dated June 1, 1977, Phoenix Steel Corporation requested a variance from the provisions of Regulation V, Section 4 and Regulation XIV, Section 2, of the Department's Regulations Governing the Control of Air pollution with respect to particulate and visible emissions during charging and tapping operations of the electric arc furnaces at its plant in Claymont, Delaware.
2. On August 11, 1977, notice was given to Phoenix Steel Corporation of the time and place of public hearing.
3. On August 15, 1977, notice of public hearing was published in the Wilmington Morning News and Evening Journal and the Delaware State News.
4. A public hearing was held on September 20 and continued on September 26 and 27, 1977.

FINDINGS OF FACT

The following findings of fact are made based on the record of the public hearing:

1. Phoenix had made the following good faith efforts to comply with the provisions of 7 Del. C., Chapter 60:
 - (a) Phoenix has expended 1.5 million dollars to upgrade the direct evacuation system.
 - (b) Phoenix is approximately 7 months ahead of a compliance schedule ordered by the Delaware Chancery Court.
 - (c) Phoenix has hired a full time engineer to oversee the pollution abatement systems.

- (d) Phoenix engineering personnel have visited numerous steel plants similar to Phoenix in order to find a workable abatement system.
 - (e) Phoenix has installed equipment to measure air stream velocities and directions within the plant for the purpose of gathering information to be used in design of an abatement system.
 - (f) Six consulting engineering firms were evaluated by Phoenix before selecting the Cadre Corporation to develop the pollution abatement system. A purchase order was issued to Cadre for study and design work to commence in October 1977 and to conclude by March 31, 1977.
2. Phoenix is unable to comply with the subject regulations because:
- (a) the geometry of the electric arc furnace shop at Claymont, including the size of the building, the location of the furnaces and the location of the continuous caster in the building, is such that engineering solutions utilized in other facilities most likely will not work effectively at Claymont.
 - (b) Neither Phoenix nor the Cadre Corporation could find an electric arc furnace operation similar to Claymont in which abatement equipment was retrofitted in such a way as to permit the facility to meet the current Delaware regulations.
 - (c) The cost of abating the irregular tap and charge violations is disproportionately high when compared to the benefits of continued operation of the facility. The current Delaware regulations will almost certainly require the installation of a building evacuation system which is extremely energy wasteful, expensive to operate, potentially uncomfortable for the workers within the shop, and not favored by the U.S. Environmental Protection Agency.
 - (d) The violations of Delaware air regulations occur only during tapping and charging. However, there appears to be little correlation between the operation of the furnaces and the amount of suspended particulates as measured by the State's air quality monitors at the Woods Haven-Kruse School. In fact, samples obtained by Phoenix indicate that the air quality is often worse when the arc furnaces are not operating, as opposed to when they are operating.

- (e) The alleged violation from which a variance is sought will not be detrimental to the purpose and policies of the Delaware laws with respect to the granting of this variance in that the violations are intermittent and neither the primary nor secondary standards are violated in the general vicinity of the plant.
3. Available alternative operating procedures or interim control measures which will be used by Phoenix are:
- (a) The operation of the modified and upgraded direct evacuation system will reduce emissions to the ambient air by reducing the emissions which escape within the building and are forced to the outside by the tapping and charging emissions.
 - (b) The use of the recently installed dampers in the direct evacuation system will increase the effectiveness of the system when one furnace is in the tap or charge mode.
 - (c) The present practice with respect to the use of scrap is that the present scrap is cleaner than scrap used in the past. Although some confusion was interjected into the hearing as to the French intention with respect to scrap, testimony from the people who actually work with the scrap was that the scrap they now use is vastly improved over scrap used in the past.
 - (d) Directives have been issued to operating personnel to eliminate unnecessary opening of the furnace door and to minimize the periods of charging and tapping.
 - (e) The assignment of an engineer and full time employees to the existing abatement system who are concerned with and responsible for the operation of the system and the procedure whereby management now shuts down the furnaces when the direct evacuation system malfunctions.
 - (f) The initial task of the Cadre Corporation will be to optimize the operation of the existing direct evacuation system.
4. The continued operation of the electric arc furnaces is necessary to the lives, health, safety or welfare of the occupants of Delaware:
- (a) Phoenix currently employs approximately 1,300 persons who would have a difficult time finding equivalent employment in the depressed steel industry.
 - (b) Phoenix makes a significant contribution to the welfare of the occupants of the State of Delaware

in that its gross monthly payroll is \$1,500,000 with corresponding tax payment to the various government entities.

- (c) The electric arc furnace method of making steel is environmentally positive on a State and National level when compared to other methods of making steel. The EAF method conserves raw materials in that it recycles scrap, creates less air pollution, creates less water pollution, reduces the amount of solid produced, and uses less water.

5. No conclusive evidence was presented to substantiate that Phoenix is unable to comply with Regulation V, Section 4.

ORDER

In consideration of the foregoing findings and the interest of furthering the purposes of 7 Del. C., Chapter 60, it is hereby ordered that a variance from the provisions of Regulation XIV, Section 2 for the tapping and charging operations of the electric arc melting furnaces at the Claymont, Delaware Plant be granted to Phoenix Steel Corporation for a period of one year from the effective date of this Order, with the following conditions:

1. The emission of visible air contaminants from the charging of an electric furnace shall not exceed an opacity of 20% for more than 10 minutes immediately following the start of any initial charging operation or for more than 18 minutes immediately following the shutdown of power to either furnace in preparation for any charge other than the initial charge.
2. The emission of visible air contaminants from the tapping of an electric furnace shall not exceed an opacity of 20% for an aggregate of more than 15 minutes immediately following the start of any tapping operation.
3. The Company shall make available to the Department, upon request, a record of the time and date of any charging or tapping operation.
4. Within 60 days from the date of this variance, the Company shall submit to the Department for its approval, a plan to monitor the amount of combustibles in the scrap to be charged into the electric arc furnaces.
5. Within 30 days after receiving the results of the study by Cadre Corporation, Phoenix shall submit a copy of the study to the Department.

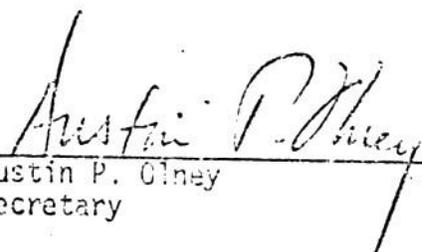
6. This variance shall not affect the implementation of the Chancery Court injunction, dated January 5, 1977, pertaining to Phoenix Steel Corporation.

It is further ordered that the request for variance from Regulation V, Section 4, is denied.

REASONS

1. The state of the art for control of emission during tapping and charging has been demonstrated but retrofitting into the existing Phoenix plant requires a longer time to design and install, than new construction.
2. The effects of this variance would not adversely affect the ambient air quality. All suspended particulate concentrations at P-1 are below the primary and secondary standards established for protection of public health and welfare.
3. The Department has determined that emissions from the charging and tapping operations are discharged from the plant for 10 to 18 minutes immediately following the start of these operations.
4. No evidence was presented to substantiate that Phoenix cannot comply with Regulation V, Section 4.

The effective date of this Order is December 2, 1977.


Austin P. Olney
Secretary

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