

ILLINOIS POLLUTION CONTROL BOARD
June 12, 1980

IN THE MATTER OF:)
)
PROPOSED AMENDMENTS TO)
CHAPTER 2: AIR POLLUTION,) R75-5
RULE 204, SULFUR STANDARDS) R74-2
AND LIMITATIONS)

Adopted Rule. Final Order.

ORDER OF THE BOARD (by Mr. Goodman):

On February 7, 1980 the Board proposed a clarification of the order of December 14, 1978. This proposal was published in the Illinois Register on February 29, 1980. No public comments were received during the first notice period.

Second notice was received by the Joint Committee on Administrative Rules on April 18, 1980. In response to a suggestion of the Joint Committee the Board has added an appendix to Rule 204 and a reference to that appendix. This appendix supplies information which may be necessary for a source to determine its obligations. It does not change that source's obligations. No other changes to the proposal were made.

It is the Order of the Board that the following corrections be made to the Board order of December 14, 1978:

- (1) Rule 204(c)(1)(B)(i) of Chapter 2 shall read as follows:
"6.8 pounds of sulfur dioxide per million btu of actual heat input, provided such owner or operator complies with all applicable provisions of Rule 204(e)(4) of this Part, or"
- (2) Rule 204(e)(4) of Chapter 2 shall read as follows:
"(4) No owner or operator of a fuel combustion emission source whose sulfur dioxide emission limitation is determined by Rule 204(c)(i)(B), 204(e)(1), or Rule 204(e)(2) shall cause or allow the total emissions of sulfur dioxide into the atmosphere from all fuel combustion emission sources owned or operated by such person and located within a 1 mile radius (1.6 Km) from the center point of any such fuel combustion source to exceed the level of sulfur dioxide emissions allowed under the previous Rule 204 (effective April 4, 1972 until December 14, 1978) without first obtaining a new

operating permit from the Agency. (This previous Rule 204 appears in its entirety in the appendix that appears at the end of Part II of this Chapter.) The application for a new operating permit shall include a demonstration that such total emissions will not violate any applicable PSD increment."

- (3) Previous Rule 204 (effective April 14, 1972 until December 14, 1978) shall be appended to Part II of Chapter 2 for reference purposes only. It shall appear as follows:

APPENDIX TO RULE 204 - FOR REFERENCE ONLY

Rule 204: Sulfur Standards and Limitations.

- (a) Sulfur Dioxide Emission Standards and Limitations for New Fuel Combustion Emission Sources with Actual Heat Input Greater than 250 Million BTU per Hour.
- (1) Solid Fuel Burned Exclusively. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion emission source greater than 250 million btu per hour, burning solid fuel exclusively, to exceed 1.2 pounds of sulfur dioxide per million btu of actual heat input.
- (2) Liquid Fuel Burned Exclusively. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion emission source greater than 250 million btu per hour, burning liquid fuel exclusively;
- (A) to exceed 0.8 pounds of sulfur dioxide per million btu of actual heat input when residual fuel oil is burned; and
- (B) to exceed 0.3 pounds of sulfur dioxide per million btu of actual heat input when distillate fuel oil is burned.
- (b) Sulfur Dioxide Emission Standards and Limitations for New Fuel Combustion Emission Sources with Actual Heat Input Smaller than, or Equal to, 250 Million BTU per Hour.

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- (1) Solid Fuel Burned Exclusively. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than, or equal to, 250 million btu per hour, burning solid fuel exclusively, to exceed 1.8 pounds of sulfur dioxide per million btu of actual heat input.
- (2) Liquid Fuel Burned Exclusively. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than, or equal to, 250 million btu per hour, burning liquid fuel exclusively;
 - (A) to exceed 1.0 pounds of sulfur dioxide per million btu of actual heat input when residual fuel oil is burned; and
 - (B) to exceed 0.3 pounds of sulfur dioxide per million btu of actual heat input when distillate fuel oil is burned.
- (c) Sulfur Dioxide Emission for Existing Fuel Combustion Sources.
 - (1) Solid Fuel Burned Exclusively.
 - (A) Existing Fuel Combustion Sources Located in the Chicago, St. Louis (Illinois) and Peoria Major Metropolitan Areas. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any existing fuel combustion source, burning solid fuel exclusively, located in the Chicago, St. Louis (Illinois) and Peoria major metropolitan areas, to exceed 1.8 pounds of sulfur dioxide per million btu of actual heat input, on or after May 30, 1975.

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(B) Existing Fuel Combustion Sources Located Outside the Chicago, St. Louis (Illinois) and Peoria Major Metropolitan Areas. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any existing fuel combustion source, burning solid fuel exclusively, located outside the Chicago, St. Louis (Illinois) and Peoria major metropolitan areas, to exceed the following:

- (i) 6.0 pounds of sulfur dioxide per million btu of actual heat input, on or after May 30, 1975; and
- (ii) 1.8 pounds of sulfur dioxide per million btu of actual heat input for all such fuel combustion emission sources located within any MMA other than Chicago, Peoria, and St. Louis (Illinois) which, according to any one ambient air monitoring station operated by or under supervision and control of the Agency within such MMA, has an annual arithmetic average sulfur dioxide level greater than;

60 ug/m³ (0.02 ppm) for any year ending prior to May 30, 1976, or

45 ug/m³ (0.015 ppm) for any year ending on or after May 30, 1976.

Compliance with this paragraph (ii) of Rule 204(c)(1)(B) shall be on and after three years from the date upon which the Board promulgates an Order for Compliance.

Before promulgation of such Order for Compliance, the Board shall:

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- (aa) publish in the Board Newsletter, within 21 days of receipt from the Agency, a proposed Order for Compliance along with the data used to obtain said annual arithmetic sulfur dioxide level; and,
 - (bb) serve a copy of such proposed Order and supporting data, within 21 days of receipt from the Agency, upon the owner or operator of each such emission source located within the MMA; and,
 - (cc) defer promulgation of the Order for Compliance for at least 45 days from the date of publication to allow submission and consideration of additional written comments.
- (2) Liquid Fuel Burned Exclusively. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any existing fuel combustion emission source, burning liquid fuel exclusively;
- (A) to exceed 1.0 pounds of sulfur dioxide per million btu of actual heat input when residual fuel oil is burned; and,
 - (B) to exceed 0.3 pounds of sulfur dioxide per million btu of actual heat input when distillate fuel oil is burned.
- (d) Combination of Fuels. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any fuel combustion emission source burning simultaneously any combination of solid, liquid and gaseous fuels to exceed the allowable emission rate determined by the following equation:

$$E = S_s H_s + 0.3 H_d + S_R H_R$$

where:

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E = allowable sulfur dioxide emission rate, in pounds per hour,

S_s = solid fuel sulfur dioxide emission standard, in pounds per million btu, which is applicable,

S_R = residual fuel oil sulfur dioxide emission standard, in pounds per million btu, which is applicable,

H_s = actual heat input from solid fuel, in million btu per hour,

H_R = actual heat input from residual fuel oil, in million btu per hour,

H_d = actual heat input from distillate fuel oil, in million btu per hour,

and where that portion of the actual heat input that is derived:

- (1) from the burning of gaseous fuels produced by the gasification of solid fuels shall be included in H_s ;
 - (2) from the burning of gaseous fuels produced by the gasification of distillate fuel oil shall be included in H_d ;
 - (3) from the burning of gaseous fuels produced by the gasification of residual fuel oil shall be included in H_R ;
 - (4) from the burning of gaseous fuels produced by the gasification of any other liquid fuel shall be included in H_R ; and
 - (5) from the burning of by-product gases such as those produced from a blast furnace or a catalyst regeneration unit in a petroleum refinery shall be included in H_R .
- (e) **Combination of Fuel Combustion Emission Sources.** No person shall cause or allow the total emissions of sulfur dioxide into the atmosphere in any one hour from all fuel combustion emission sources owned or operated by such person and located within a 1 mile radius from the center point of any such

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fuel combustion emission source to exceed the emissions determined by the following equations:

$$E = 20,000 \frac{H_s^2}{300}$$

$$H_s = \frac{P_1 H_1 + P_2 H_2 + \dots + P_n H_n}{100}$$

(Note: $P_1 + P_2 + \dots + P_n = 100$)

where:

E = total emission of sulfur dioxide, in pounds per hour, into the atmosphere in any one hour period from all fuel combustion emission sources owned or operated by such person and located within a 1 mile radius from the center point of any such emission source,

$P_i, i = 1, 2, \dots, n$ = percentage of total emissions E emitted from source i, and

$H_i, i = 1, 2, \dots, n$ = physical height in feet above grade of stack i.

- (f) Sulfur Standards and Limitations for Process Emission Sources.
- (1) Sulfur Dioxide Standards and Limitations.
- (A) Except as further provided by paragraphs (f)(1)(B); (f)(1)(C), (f)(1)(D) and (f)(1)(E) of this Rule 204, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm....
- (B) Paragraph (f)(1)(A) of this Rule 204 shall not apply to new sulfuric acid manufacturing processes. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any new sulfuric acid manufacturing plant to exceed 4.0 pounds of sulfur dioxide per ton of acid produced.

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- (C) Paragraph (f)(1)(A) of this Rule 204 shall not apply to processes designed to remove sulfur compounds from the flue gases of fuel combustion emission sources.
 - (D) Paragraph (f)(1)(A) of this Rule shall not apply to existing processes designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes, providing that the sulfur dioxide emissions from such removal processes do not exceed the emissions determined by the equations of Rule 204(e).
 - (E) Paragraph (f)(1)(A) of this Rule 204 shall not apply to existing hydrogen sulfide flares at a chemical manufacturing plant provided:
 - (i) Said flares are operative on existing batch type processes; and
 - (ii) The hydrogen sulfide emissions being flared are not, at the time of adoption of this subpart (E), passed through existing processes designed to remove sulfur compounds from the flue gasses as provided in subparagraph (D) above; and
 - (iii) The emission of sulfur dioxide into the atmosphere from said flares does not exceed 500 pounds per hour and 3500 pounds per eight-hour period; and
 - (iv) Provided, however, that if emission controls for said flares become economically reasonable and technically feasible the owner/operator of such hydrogen sulfide flares shall install such controls.
- (2) Sulfuric Acid Mist Standards and Limitations.
- (A) No person shall cause or allow the emission of sulfuric acid mist into the

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atmosphere from any process emission source to exceed 0.15 pounds of acid mist per ton of acid manufactured.

(B) With the exception of Rule 205(f)(2)(A) and fuel combustion sources, no person using sulfuric acid shall cause or allow the emission of sulfuric acid and/or sulfur trioxide from all other similar emission sources at a plant or premises to exceed:

(i) 0.10 pound in any one hour period for sulfuric acid usage less than 1,300 tons per year (100 percent acid basis);

(ii) 0.50 pound per ton of acid used for sulfuric acid usage greater than or equal to 1,300 tons per year (100 percent acid basis).

(g) Measurement Methods.

(1) Sulfur Dioxide Measurement.

Measurement of sulfur dioxide emissions from stationary sources shall be made according to the procedure published in 36 Fed. Reg. 24890, Method 6, or by measurement procedures specified by the Agency according to the provisions of Part 1 of this Chapter and application of standard emission factors as published in Public Health Service Publication 999-AP-42, Compilation of Air Pollutant Emission Factors, as revised from time to time.

(2) Sulfuric Acid Mist and Sulfur Trioxide Measurement.

Measurement of sulfuric acid mist and sulfur trioxide shall be according to the Barium-thorin titration method as published in 36 Fed. Reg. 24893.

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(3) Solid Fuel Averaging Measurement.

If low sulfur solid fuel is used to comply with subparagraphs (a), (b), (c), and (d) of this Rule 204, the applicable solid fuel sulfur dioxide standard shall be met by a two month average of daily samples with 95 percent of the samples being no greater than 20 percent above the average. A.S.T.M. procedures shall be used for solid fuel sampling, sulfur and heating value determinations.

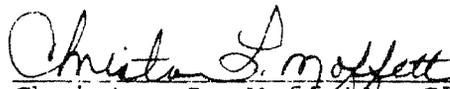
(h) Compliance Dates.

- (1) Every owner or operator of a new emission source shall comply with the standards and limitations of Rule 204 by the effective date of Part 2 of this Chapter.
- (2) Every owner or operator of an existing fuel combustion emission source shall comply with the standards and limitations of Rules 204(c)(1)(A), 204(c)(2), 204(d) and 204(e) by May 30, 1975.
- (3) Every owner or operator of an existing process emission source shall comply with the standards and limitations of Rule 204(f) by December 31, 1973.

IT IS SO ORDERED.

Mr. Werner dissents.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Order was adopted on the 12th day of June, 1980 by a vote of 4-1.



Christan L. Moffett, Clerk
Illinois Pollution Control Board