

ILLINOIS POLLUTION CONTROL BOARD  
December 30, 1982

IN THE MATTER OF: )  
 )  
SULFUR DIOXIDE EMISSION ) R80-22  
LIMITATIONS: RULE 204 )  
OF CHAPTER 2 )

Proposed Rules. Second Notice.

ORDER OF THE BOARD (by I. G. Goodman):

Rule 204, Sections (a) through (i) of Sulfur Dioxide Standards and Limitations, as contained in the Board's Chapter 2: Air Pollution, as amended and reorganized, is hereby ordered to Second Notice. Rule 204 now contains Sections (a) through (o).

The proposed text is as follows:

Rule 204 ~~Sulfur Standards and~~ Limitations

(a) Reserved.

(b) Unchanged.

(c) ~~Sulfur Dioxide Emission for Existing Fuel Combustion Sources~~

~~(1)~~~~(B)~~~~Solid Fuel Burned Exclusively~~ Existing Fuel Combustion Sources with Actual Heat Input Less Than, or Equal to, 250 Million Btu Per Hour 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 with actual heat input less than, or equal to, 250 million Btu per hour, burning solid fuel exclusively, located outside the Chicago, St. Louis (Illinois) and Peoria major metropolitan areas, to exceed either of the following, whichever such person determines shall apply:

~~(1)~~ (1) 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), or

~~(2)~~ (2) the emission limit provided by Rule 204(e).

~~(1)~~~~(C)~~~~(d)~~ Existing Fuel Combustion Sources with Actual Heat Input Greater than 250 Million Btu Per Hour 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 with actual heat input greater than 250 million Btu per hour, burning solid fuel exclusively, located outside the Chicago, St. Louis (Illinois) and Peoria major metropolitan areas, to exceed the emission limit provided by Rule 204(e).

(e) Unchanged except for internal references at subparagraph (4), as follows:

(4) No owner or operator of a fuel combustion emission source whose sulfur dioxide emission limitation is determined by Rule 204(c)~~(1)~~~~(B)~~, Rule 204(e)(1), or 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 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 14, 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.

~~(1)~~~~(A)~~(f) Existing Fuel Combustion Sources Located in the Chicago, St. Louis (Illinois) and Peoria Major Metropolitan Areas. Except as otherwise provided for in this subsection, 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 British thermal unit (Btu) of actual heat input on or after \_\_\_\_\_ (the effective date of this Rule).

(1) Sources located in Kankakee or McHenry Counties shall not exceed 6.8 pounds of sulfur dioxide per million Btu of actual heat input.

(2) Existing industrial sources, not equipped with flue gas desulfurization systems located in the Peoria major metropolitan area shall not exceed 5.5 pounds of sulfur dioxide per million Btu of actual heat input.

~~(1)~~~~(D)~~ Repealed.

~~(1) (E) Solid-Fuel-Burned-Exclusively.--Notwithstanding-any-other-provision-of-this-rule, no person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one-hour period from any existing solid-fuel combustion source located in the Peoria major metropolitan area and having an actual heat input not greater than 250 million Btu per hour, owned or operated by Bemis Company, Inc., Celotex Corporation, or Sherex Corporation, to exceed 5.5 pounds per million Btu of actual heat input on or after December 17, 1981.~~

(g) Exemption Procedure for Source Located in the Chicago, St. Louis (Illinois) and Peoria Major Metropolitan Areas. Any owner or operator of an existing fuel combustion emission source located in the Chicago, St. Louis (Illinois) or Peoria major metropolitan areas may petition the Board for approval of an alternate emission rate specified in emissions of pounds of sulfur dioxide per million Btu of actual heat input for any such fuel combustion emission source, up to a maximum of 6.8 pounds of sulfur dioxide per million Btu of actual heat input. Such person shall prove in an adjudicative hearing before the Board that the proposed emission rate will not, under any foreseeable operating conditions and potential meteorological conditions cause or contribute to a violation of any applicable Primary or Secondary Sulfur Dioxide Ambient Air Quality Standard or of any applicable PSD increment. An emission rate approved pursuant to this paragraph shall be a substitute for that standard otherwise required by this Rule.

- (1) Every owner or operator of an existing fuel combustion emission source so petitioning the Board for approval of an emission standard shall follow the applicable procedures described in 35 Ill. Adm. Code 106.
- (2) Any emission standard so approved shall be included as a condition in operating permits issued pursuant to Rule 103 of this Chapter. Any owner or operator of a fuel combustion emission source who receives Board approval of such an emission standard shall apply to the Agency within 30 days of approval of such standard for a revision of its operating permit for such source.
- (3) No owner or operator of an existing fuel combustion emission source shall seek such an exemption or comply with the emission standard so granted by the use of dispersion enhancement techniques referred to in Rule 204(o).

~~(e)~~~~(2)~~(h) Sulfur Dioxide Emission Limitations for Existing Fuel Combination Emission Sources Burning 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)~~~~(1)~~ to exceed 1.0 pounds of sulfur dioxide per million Btu of actual heat input when residual fuel oil is burned; and,
- ~~(B)~~~~(2)~~ to exceed 0.3 pounds of sulfur dioxide per million Btu of actual heat input when distillate fuel oil is burned.

~~(d)~~~~(i)~~ Sulfur Dioxide Emission Limitations for Fuel Combustion Emission Sources Burning Combination of Fuels.

- (1) Except as provided in Rule 204(i)(2), 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:

$$E = S_S H_S + 0.3 \frac{S_d}{H_d} H_d + S_R H_R$$

where:

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,

$\frac{S_d}{H_d}$  = distillate oil sulfur dioxide emission standard: 0.3 pounds per million Btu,

$S_R$  = residual 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,

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

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

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 bases such as those produced from a blast furnace or a catalyst regeneration unit in a petroleum refinery shall be included in  $H_R$ .

(2) 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 at a steel mill located in the Chicago or St. Louis (Illinois) major metropolitan areas burning any solid, liquid or gaseous fuel, or any combination thereof, to exceed the allowable emission rate determined by the following equation:

$$E = S_S H_S + S_d H_d + S_R H_R + S_G H_G$$

where:

$E$  = 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,

$S_d$  = distillate oil sulfur dioxide emission standard: 0.3 pounds per million Btu.

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

$S_G$  = maximum by-product gas sulfur dioxide emissions, in pounds per million Btu, which would result if the applicable by-product gas which was burned, had been burned alone at any time during the 12 months preceding the latest operation, on or before (the effective date of this rule) of an emission source using any by-product gas.

$\underline{H}_S$  = actual heat input from solid fuel, in million Btu per hour,

$\underline{H}_d$  = actual heat input from distillate fuel oil, in million Btu per hour,

$\underline{H}_R$  = actual heat input from residual fuel oil, in million Btu per hour,

$\underline{H}_G$  = actual heat input from by-product gases, such as those produced from a blast furnace, 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  $\underline{H}_R$ ;
- 2) from the burning of gaseous fuels produced by the gasification of distillate fuel oil shall be included in  $\underline{H}_d$ ;
- 3) from the burning of gaseous fuels produced by the gasification of residual fuel oil shall be included in  $\underline{H}_R$ ; and
- 4) from the burning of gaseous fuels produced by the gasification of any other liquid fuel shall be included in  $\underline{H}_R$ .

(j) Fuel Burning Process Emission Source

The emissions from the burning of fuel at existing process emission sources shall comply with applicable paragraphs (a) through (i) of this Rule, except as follows:

- (1) Slab reheat furnaces with fuel burning capacities in excess of 650 million Btu per hour and burning any residual fuel shall not be subject to the applicable paragraph 204(a) through (i) so long as the total sulfur dioxide emissions resulting from the burning of residual fuel oil in all such furnaces at any one steel mill do not exceed 730 pounds per hour.
- (2) No person shall cause or allow the emissions of sulfur into the atmosphere in any one hour period from burning tea leaves as fuel to exceed 0.70 pounds of sulfur dioxide per million Btu of actual heat input.
- (3) Lime kilns (Standard Industrial Code 32) are not subject to limitations for sulfur dioxide emission.

~~(f)(1)(k)~~ Sulfur Dioxide Standards and Emission Limitations for Process Emission Sources.

~~(A)~~ Except as further provided by this Rule, paragraph (f)(1)(B), (f)(1)(G), (f)(1)(B) 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.

(1) The following process emission sources are not subject to the 2000 ppm standard:

~~(A)(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.

~~(B)(D)~~ Paragraph ~~(f)(1)(A)~~ of this Rule-204 shall not apply to Existing processes designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes.

(C)(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, as of September 11, 1975, passed through existing processes designed to remove sulfur compounds from the flue bases as provided in subparagraph ~~(D)(B)~~ 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.

(D) Sodium Aluminum sulfate manufacturing process emission sources in the St. Louis (Illinois) major metropolitan area.

- (E) Sodium sulfite manufacturing process emission sources in the St. Louis (Illinois) major metropolitan area.
- (F) Secondary lead smelting process emission sources in the Chicago or St. Louis (Illinois) major metropolitan areas.
- (G) Glass melting furnaces in the Chicago or St. Louis (Illinois) major metropolitan areas.
- (H) Glass heat treating with sulfur dioxide in the St. Louis (Illinois) major metropolitan area.
- (2) No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any new process emission source in the St. Louis (Illinois) major metropolitan area designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes to exceed 14 pounds of sulfur dioxide per ton of sulfur recovered.
- (3) No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any sulfuric acid manufacturing process in the City of Chicago to exceed 500 ppm.
- (B)(4) 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.
- (f)(2)(1) Sulfuric Acid Mist Standards-and Limitations
- (A)(1) No person shall cause or allow the emission of sulfuric acid mist into the atmosphere from any process emission source to exceed 0.15 pounds of acid mist per ton of acid manufactured.
- (B)(2) With the exception of Rule-204(f)(2)(A)-and fuel combustion sources and acid manufacturing, 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)~~(m) Measurement Methods

Unchanged except for an internal reference in subparagraph 3, which will now read:

(3) Solid Fuel Averaging Measurement

If low sulfur fuel is used to comply with subparagraphs (a) ~~(b)~~, ~~(c)~~ and ~~(d)~~ through (i) of this Rule 204, the applicable 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)~~(n) Compliance Dates

Every owner or operator of an emission source subject to Rule 204 shall comply with the standards and limits thereof in accordance with the dates shown in the table below:

TABLE OF COMPLIANCE DATES

Rule	Type of Source	Compliance Date
204 <del>(a)</del> and 204(b)	New fuel combustion emission sources.	April 14, 1972
204 <del>(c)</del> (1)(A)	<del>Existing sources in Chicago, St. Louis (Illinois) and Peoria.</del>	May-30, -1975
204(c)(1)(B)	Existing sources outside the Chicago, St. Louis (Illinois) and Peoria MMA's with actual heat input less than, or equal to, 250 million Btu per hour	
	(a) Sources determining that the 6.8 lbs/MMBTU standard shall apply	December 14, 1978
	(b) Sources determining that Rule 204(e) shall apply	See Rule 204(e)

Rule	Type of Source	Compliance Date
<del>204(e)(1)(E)</del> (d)	Existing sources outside the Chicago, St. Louis (Illinois) and Peoria MMA's with actual heat input greater than 250 million Btu per hour	<del>December-14, 1978</del> <u>See Rule 204(e)</u>
<del>204(e)(1)(D)</del>	<del>Existing sources in MMA's other than Chicago, St. Louis (Illinois) and Peoria complying with Pollution Control Board Order to limit emissions to 1.8 lbs/million Btu</del>	<del>Three years after Board Order</del>
<del>204(e)(1)(E)</del>	<del>Existing sources in Peoria</del>	<del>December 17, 1981</del>
<del>204(d)</del>	<del>Combination of fuel sources</del>	<del>April 14, 1978</del>
204(e)(1)	Fuel combustion sources located outside Chicago, St. Louis (Illinois) and Peoria MMA's which obtain an alternate emission rate	
	(a) If source is in compliance with the previous Rule 204(e) (effective April 14, 1972 until December 14, 1978) prior to December 14, 1978	Date of commencement of monitoring and modeling pursuant to Rule 204(e)(3)(C)
	(b) If source is not in compliance with the previous Rule 204(e) (effective from April 14, 1972 until December 14, 1978) prior to December 14, 1978	Date of approval of alternate standard
<u>204(f)</u>	<u>Existing sources in the Chicago, St. Louis (Illinois) or Peoria MMA's burning solid fuel exclusively</u>	Effective date of R80-22
<u>204(g)</u>	<u>Existing sources in the Chicago, St. Louis (Illinois) or Peoria MMA's burning solid fuel exclusively which obtain an alternate emission rate</u>	<u>Date of approval of alternate standard</u>
<u>204(h)</u>	<u>Existing sources burning liquid fuel exclusively</u>	<u>May 30, 1975</u>
<u>204(i)</u>	<u>Combination of fuels sources except at a steel mill</u> <u>Combination of fuels sources at a steel mill</u>	<u>April 14, 1972</u> Effective date of R80-22

Rule	Type of Source	Compliance Date
<u>204(j)</u>	<u>Fuel burning process emission sources</u>	Effective date of R80-22
<u>204<del>(j)</del>(k)(1)</u> <u>(A)-(C)</u>	Process emission sources Existing sources New sources	December 31, 1973 December 14, 1978
<u>204(k)(D)-(H)</u>	<u>Process emission sources</u>	Effective date of R80-22
<u>204(k)(2), (3)</u>	<u>New sources in the St. Louis (Illinois) MMA designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes and sulfuric acid manufacturing processes in the City of Chicago.</u>	Effective date of R80-22
204(1)	Sources having emissions of sulfuric acid mist Existing sources New sources	December 31, 1973 December 14, 1978

~~(j)~~(o) Dispersion Enhancement Techniques

No owner or operator of an existing fuel combustion emission source shall comply with the emission standard of Rule 204(e) (1), Rule 204(e)(2), Rule 204(e)(3), or Rule 204 (g) by the use of dispersion enhancement techniques. For the purpose of this rule, dispersion enhancement techniques shall include, but not be limited to, an intermittent control system or an increase of: stack height in excess of good engineering practice necessary to prevent downwash or fumigation conditions, stack diameter, exit gas velocity or exit gas temperature, except as provided by Section 123 of the Clean Air Act and Regulations promulgated thereunder. Flue gas may be reheated where air pollution control equipment results in a reduction of flue gas temperature, provided that the degree of reheat does not exceed the temperature drop across such air pollution control equipment.

IT IS SO ORDERED.

Chairman J. Dumelle and Board Member N. Werner concurred.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Order was adopted on the 30<sup>th</sup> day of December, 1982 by a vote of 5-0.

  
Christan L. Moffett, Clerk  
Illinois Pollution Control Board