

ILLINOIS POLLUTION CONTROL BOARD
August 18, 1982

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

Proposed Rules. First Notice.

ORDER OF THE BOARD (by I. Goodman):

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

The proposed text is as follows:

Rule 204 Sulfur ~~Standards-and~~ Limitations

- (a) Unchanged.
- (b) Unchanged.
- (c) Sulfur Dioxide Emission Limitations for Existing Fuel Combustion Emission Sources Burning Solid Fuel Exclusively.

~~(1)~~~~(B)~~ (1) ~~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:

~~(i)~~ (A) 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)~~ (g)(4), or

~~(ii)~~ (B) the emission limit provided by Rule 204~~(e)~~ (g).

~~(1)~~~~(e)~~(2) 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)~~(g).

~~(1)~~~~(A)~~(3) Existing Fuel Combustion Sources Located in the Chicago, St. Louis (Illinois) and Peoria Major Metropolitan Areas. Except as otherwise provided for in this Rule, 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 May-30-1975 the effective date of this Rule.

~~(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.~~
(Removed to Rule 204(c)(5)(B).)

~~(e)~~~~(2)~~ Removed to Rule 204(d).

(4) 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 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.

- (A) 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 the Procedural Rules, Chapter I of the Board's Rules and Regulations.
- (B) 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.
- (C) 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(1).
- (5) Specific Exceptions to Rule 204(c). Notwithstanding any other provisions 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 fuel combustion sources burning solid fuel exclusively to exceed the limits below in pounds of sulfur dioxide per million Btu of actual heat input, on or after the effective date of this Rule.

 - (A) Existing fuel combustion emission sources located in Kankakee or McHenry Counties: 6.8 pounds.
 - (B) Existing industrial fuel combustion emission sources located in the Peoria major metropolitan area: 5.5 pounds.
 - (C) Existing fuel combustion emission sources equipped with flue gas desulfurization systems as of December 1, 1980, located in:

- (i) Peoria County Township 10 North, Range 8, East of the Third Principal Meridian:
1.8 pounds.
- (ii) Tazewell County, Township 26 North, Range 4, West of the Third Principal Meridian:
1.1 pounds.
- (iii) Tazewell County, Township 25 North, Range 3, West of the Third Principal Meridian:
1.8 pounds.

~~(e)~~~~(2)~~(d) 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)~~(e) Sulfur Dioxide Emission Limitations for Fuel Combustion Emission Sources Burning Combination of Fuels.

- (1) Except as provided in Rule 204(e)(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:

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

where:

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

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

S_S = solid fuel sulfur dioxide emission standard, in pounds per million Btu, which is applicable,

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_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 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_d = distillate oil sulfur dioxide emission standard: 0.3 pounds per million Btu.

$\frac{S}{S}$ = solid fuel sulfur dioxide emission standard, in pounds per million Btu, which is applicable,

$\frac{S}{R}$ = residual oil sulfur dioxide emission standard, in pounds per million Btu, which is applicable,

$\frac{S}{G}$ = 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.

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

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

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

$\frac{H}{G}$ = actual heat input from by-product gases, such as those produced from a blast furnace or a catalyst regeneration unit in a petroleum refinery, 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_R .

(f) Existing Fuel Burning Process Emission Source

The emissions from the burning of fuel at process emission sources in the Chicago or St. Louis (Illinois) major metropolitan areas shall comply with applicable paragraphs (a), (b), (c) or (d) of this Rule, except as follows:

- (1) Any fuel burning process emission source which, as of March 1, 1982, is in compliance with Rule 204(h) but not in compliance with an applicable paragraph 204(a), (b), (c), or (e), shall not be subject to the applicable paragraph 204(a), (b), (c) or (e) so long as sulfur dioxide emissions in pounds per hour do not exceed the maximum sulfur dioxide emissions in pounds per hour emitted by the source during the 12 months preceding March 1, 1982.

(2) No person shall cause or allow the emission of sulfur into the atmosphere in any one hour period from burning tea leaves as fuel in the St. Louis major metropolitan area 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 limitation for sulfur dioxide emission.

(e)(g) Fuel Combustion Emission Sources Located outside of the Chicago, St. Louis (Illinois) and Peoria Major Metropolitan Areas.
Unchanged.

(f)(1)(h) 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 the effective date of this rule, passed through existing processes designed to remove sulfur compounds from the flue bases as provided in subparagraph (D)(A) 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 is 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)(i) 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)~~(j) Measurement Methods

Unchanged.

~~(h)~~(k) Compliance Dates

Unchanged.

~~(i)~~(l) Dispersion Enhancement Techniques

No owner or operator of an existing fuel combustion emission source shall comply with the emission standard of Rule 204~~(e)~~ (g)(1), Rule 204~~(e)~~(g)(2), ~~or~~ Rule 204~~(e)~~ (g)(3) or Rule 204 (c)(4) 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 SO ORDERED.

Board Chairman Dumelle concurred.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Order was adopted on the 18th day of August, 1982 by a vote of 5-0.

Christan L. Moffett
Christan L. Moffett, Clerk
Illinois Pollution Control Board