

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Air Division

**Chapter 335-3-5
Control of Sulfur Compound Emissions**

Table of Contents

335-3-5-.01	Fuel Combustion
335-3-5-.02	Sulfuric Acid Plants
335-3-5-.03	Petroleum Production
335-3-5-.04	Kraft Pulp Mills
335-3-5-.05	Process Industries – General
335-3-5-.06	State Clean Air Interstate Rule (CAIR) SO ₂ Trading Program General Provisions
335-3-5-.07	CAIR Designated Representative for CAIR SO ₂ Sources
335-3-5-.08	Permits
335-3-5-.11	CAIR SO ₂ Allowance Tracking System
335-3-5-.12	CAIR SO ₂ Allowance Transfers
335-3-5-.13	Monitoring and Reporting
335-3-5-.14	CAIR SO ₂ Opt-in Units

335-3-5-.01 Fuel Combustion

- (1) (a) **Sulfur Dioxide Category I Counties.** No person shall cause or permit the operation of a fuel burning installation in a Sulfur Dioxide Category I County or in Jefferson County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 1.8 pounds per million BTU heat input. *(Amended March 25, 1975)*
- (b) **Sulfur Dioxide Category II Counties.** No person shall cause or permit the operation of a fuel burning installation in a Sulfur Dioxide Category II County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 4.0 pounds per million BTU heat input. *(Amended March 25, 1975)*
- (c) **Sulfur Dioxide - Jackson County.** No person shall cause or permit the operation of an electric utility steam generating installation having a total rated capacity greater than 5,000 million BTU per hour in Jackson County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 1.2 pounds per million BTU heat input. *(Adopted August 28, 1979)*
- (d) **Sulfur Dioxide - Colbert County.** No person shall cause or permit the operation of an electric utility steam generating installation having a total rated capacity greater than 1,000 million BTU per hour in Jackson County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 2.2 pounds per million BTU heat input.
1. Compliance with this paragraph shall be achieved no later than the dates in the following schedule:
- (i) Specification for emission control equipment shall be completed by October 1, 1987.

- (ii) Initiation of on-site construction shall begin by April 1, 1988
 - (iii) Contracts for the emission control system shall be awarded by May 1, 1988.
 - (iv) Contracts for compliance coal shall be awarded by February 1, 1990.
 - (v) The first electric utility steam generating unit shall be in compliance with the paragraph by May 1, 1990.
 - (vi) The second electric steam generating unit shall be in compliance with the paragraph by August 1, 1990.
 - (vii) The third electric steam generating unit shall be in compliance with the paragraph by November 1, 1990.
 - (viii) The fourth electric utility steam generating unit shall be in compliance with the paragraph by January 1, 1991.
- (e) **Sulfur Dioxide - Shelby County.** No person shall cause or permit the operation of an electric utility steam generating installation having a total rated capacity greater than 5,000 million BTU per hour in Jackson County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 3.8 pounds per million BTU heat input.
- (2) **Air Quality Demonstration.** In addition to the requirements of paragraph (1) of this Rule, every owner or operator of a fuel burning installation having a total rated capacity greater than 1500 million BTU per hour shall:
- (a) Demonstrate, to the satisfaction of the Director, that the sulfur oxides emitted, either alone or in contribution to other sources, will not interfere with attainment and maintenance of any primary or secondary ambient air quality standard prescribed at Rule 335-3-1-.03.
 - (b) Demonstrate, to the satisfaction of the Director, that in meeting the emission limitations of paragraph (1) of this Rule, the installation will not increase emissions to the extent that resulting air quality concentrations will be greater than:
 1. those concentrations (either measured or calculated) which existed in 1970; or
 2. those concentrations (either measured or calculated) which existed during the first year of operation of any installation which began operating after January 1, 1970.
 - (c) Upon the direction of the Director, install and maintain air quality sensors to monitor attainment and maintenance of ambient air quality standards in the areas influenced by the emissions from such installation. Results of such monitoring shall be provided to the Director in a manner and form as he shall direct.
- (3) For purposes of this Part, the total heat input from all similar fuel combustion units at a plant, premises, or installation shall be used for determining the maximum allowable emission of sulfur dioxide that passes through a stack or stacks. Units constructed and operated to conform with the New Source Performance Standards shall not be considered similar to other units at a plant, premises, or installation. *(Amended March 25, 1975)*
- (4) All calculations performed pursuant to demonstrations required by paragraph (2) of this Rule shall assume that the fuel burning installation is operating at or above the maximum capacity which such installation is capable of being operated. *[Submitted July 25, 1975, Approved May 27, 1976 (41 FR 21638)]*

- (5) No person shall cause or permit the emission or combustion of any refinery process gas stream that contains H₂S in concentrations greater than 150 ppm without removal of the hydrogen sulfide in excess of this concentration.
- (6) To ensure that ambient air quality standards are met, an annual review of Sulfur Dioxide Category I and II Counties will be made by the staff. Initial Sulfur Dioxide Category classifications and any subsequent changes to Sulfur Dioxide Category classifications will be the subject of a public hearing. (*Amended March 25, 1975*)

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

History: Effective date: January 18, 1972.

Amended: May 29, 1973; March 25, 1975; August 28, 1979; August 10, 1987.

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	MAY 1, 1975	SEP 28, 1976	41 FR 19220
1st Revision	OCT 9, 1975	SEP 28, 1976	41 FR 19220
2nd Revision	OCT 31, 1989	MAR 19, 1990	55 FR 10062
3rd Revision	OCT 30, 1996	AUG 05, 1997	62 FR 30991

335-3-5-.02 **Sulfuric Acid Plants** *(Amended April 22, 1975)*

- (1) **Applicability.** For existing sulfuric acid plants operating as of January 18, 1972, the following applies:
- (1) No person shall cause or permit sulfur dioxide tail gas emissions from sulfuric acid manufacturing plants to exceed 27 pounds per ton of 100 percent sulfuric acid produced; provided, however, that no sulfuric acid manufacturing plant emitting less than 27 lbs. per ton of 100 percent sulfuric acid produced shall be allowed to increase its emission rate.
- (2) No person shall cause or permit tail gas acid mist emissions to exceed 0.5 pounds per ton of sulfuric acid produced, and the sulfur trioxide emissions are not to exceed 0.2 pounds per ton of sulfuric acid produced.
- (b) For all sulfuric acid plants not included in subparagraph (a) above, the following applies:
- (1) No person shall cause or permit the discharge into the atmosphere of sulfur dioxide in excess of 4 lbs. per ton of sulfuric acid produced, maximum two-hour average.
- (2) No person shall cause or permit the discharge into the atmosphere of acid mist which is in excess of 0.15 pounds per ton of acid produced, maximum two-hour average, expressed in H₂SO₄.
- (2) There shall be installed, calibrated, maintained, and operated in any sulfuric acid production unit subject to the provisions of this Part, an instrument for continuously monitoring and recording emissions of sulfur dioxide.
- (3) Any instrument and sampling system installed and used pursuant to this Part shall be subject to the approval of the Director.

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

History: Effective date: January 18, 1972.

Amended: May 29, 1973; April 22, 1975

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUL 25, 1975	MAY 27, 1976	41 FR 21638
1st Revision	MAY 01, 1975	SEP 28, 1976	41 FR 42674
2nd Revision	OCT 09, 1975	SEP 28, 1976	41 FR 42674
3rd Revision	SEP 06, 1979	NOV 06, 1981	46 FR 55105
4th Revision	OCT 31, 1989	MAR 19, 1990	55 FR 10062
5th Revision	OCT 30, 1996	AUG 05, 1997	62 FR 30991

335-3-5-.03 Petroleum Production

- (1) Applicability. This regulation applies to facilities that handle natural gas or refinery gas that contains more than 5 grains of hydrogen sulfide per 100 standard cubic feet.
- (2) No person shall cause or permit the emission of a process gas stream containing hydrogen sulfide into the atmosphere unless it is properly burned to maintain the ground level concentrations of hydrogen sulfide to less than 10 parts per billion.
- (3) No person shall cause or permit the sulfur oxide emission from any facility designed to dispose of or process natural gas containing more than 5 grains hydrogen sulfide per 100 standard cubic feet to exceed the following:

CATEGORY I COUNTIES

Available Sulfur (Long Tons/Day)	Permitted Emissions of Sulfur Dioxide
Up to 5	No Limit
5 to 35	373 lbs/hour
35 to 75	0.10 lbs/ SO ₂ /lb. S processed
Over 75	0.08 lbs/SO ₂ /lb. S processed

CATEGORY II COUNTIES

Available Sulfur (Long Tons/Day)	Permitted Emissions of Sulfur Dioxide
Up to 10	No Limit
10 to 50	560 lbs/hour
50 to 100	0.10 lbs/ SO ₂ /lb. S processed
Over 100	0.08 lbs/SO ₂ /lb. S processed

The allowable emissions, as a percent of plant inlet, are increased as follows to allow for dry acid gas streams containing less than 60 percent hydrogen sulfide:

Mol Percent of Hydrogen Sulfide in Dry Acid Gas	Additional SO ₂ Emissions Allowed
50% but less than 60%	0.02 lbs. SO ₂ /lb. S processed
40% but less than 50%	0.04 lbs. SO ₂ /lb. S processed
30% but less than 40%	0.06 lbs. SO ₂ /lb. S processed
20% but less than 30%	0.10 lbs. SO ₂ /lb. S processed
Less than 20%	Must utilize the best available control technology, with consideration to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility.

(4) Applicability. In addition to the requirements of paragraph (3) of this Rule, the provisions of this paragraph apply to all natural gas processing facilities in Escambia County with capacities greater than 50 million standard cubic feet of sour gas per day.

(a) No person shall cause or permit the emissions of total sulfur compounds, measured as sulfur dioxide, from any affected facility to exceed the following:

Available Sulfur (Long Tons/Day)	Permitted Emissions of Total Sulfur Compounds
Up to 575	0.140 pounds of total sulfur compounds per pound of available sulfur
575 to 1031	Pounds of total sulfur compounds per pound of available sulfur = $0.186 - 8.57 \times 10^{-7} S$ Where S=lb/hr of available sulfur
Over 1031	10,008 lb/hr

(b) Compliance with subparagraph (a) of this paragraph shall be determined continuously by monitors which measure the total sulfur compounds, measured as sulfur dioxide, emitted by the facility and total available sulfur to the facility or by other equivalent methods approved by the Director.

(5) For purposes of this Rule, the following counties are classified as Category I Counties: Jackson, Jefferson, and Mobile. The remaining counties in the state are classified as Category II Counties.

(6) Compliance with these regulations is determined both by long-term material balances and stack sampling. New plants with an inlet stream containing more than 50 long tons per day of sulfur are required to install monitors to continuously determine the sulfur oxide emissions in terms of mass per unit of time.

(7) In calculating the ground level concentration that results from short-term or emergency flaring, it shall be assumed that only 75 percent of the heat of combustion is used to heat the products of combustion.

(8) Air Quality Demonstration. In addition to the requirements of paragraph (3) of this Rule, every owner or

operator of a facility covered by Rule 335-3-5-.03 shall demonstrate, to the satisfaction of the Director, that the sulfur oxides emitted, either alone or in conjunction with other sources, will not interfere with attainment and maintenance of any primary or secondary ambient air quality standard.

- (9) To ensure that ambient air quality standards are met, an annual review of Sulfur Dioxide Category I and II Counties will be made by the staff. Initial Sulfur Dioxide Category Classifications and any subsequent changes to Sulfur Dioxide Category Classifications will be the subject of a public hearing.

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

History: Effective date: January 18, 1972.

Amended: May 29, 1973; April 22, 1975

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUL 21, 1976	OCT 19, 1977	42 FR 55810
1 st Revision	OCT 31, 1989	MAR 19, 1990	55 FR 10062
2 nd Revision	OCT 30, 1996	AUG 05, 1997	62 FR 30991
3 rd Revision	AUG 10, 2000	DEC 08, 2000	65 FR 76938

335-3-5-.04 **Kraft Pulp Mills** *(Adopted July 26, 1972)*

- (1) For the purposes of this Rule, the following definitions apply:
- (a) “Old Design Recovery Furnaces” shall mean recovery furnaces designed to burn black liquor after direct contact evaporation, as well as units built prior to 1970, converted to an indirect contact unit prior to 1990 and whose exhaust gases pass through a wet bottom electrostatic precipitator.
 - (b) “New Design Recovery Furnaces” shall mean recovery furnaces designed to burn black liquor after indirect contact evaporation.
- (2) Applicability. This Rule applies to manufacturing facilities for the pulping of wood and the preparation and recovery of associated chemicals by the kraft process, including combined recovery systems serving other processes such as neutral sulfite pulping.

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

History: Effective date: July 26, 1972.

Amended: May 29, 1973

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	FEB 15, 1973	APR 23, 1974	39 FR 14338
1st Revision	OCT 31, 1989	MAR 19, 1990	55 FR 10062
2 nd Revision	AUG 10, 2000	DEC 08, 2000	65 FR 76938

335-3-5-.05 **Process Industries - General** (Adopted May 5, 1976)

- (1) **Applicability.** This part applies to facilities not regulated by Rules 335-3-5-.01 through 335-3-5-.04.
- (2) No person shall construct and operate a new or modified sulfur compound emission source that does not meet any and all applicable New Source Performance Standards and utilizes the best available control technology, with consideration to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility.
- (3) No person shall construct and operate a new or modified emissions source that will cause or contribute to a new condition such that either the primary or the secondary sulfur dioxide ambient air quality standards are exceeded in the area.

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

History: Effective date: May 25, 1976.

Amended: August 10, 1976.

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUL 21, 1976	OCT 19, 1977	42 FR 55810
1st Revision	OCT 31, 1989	MAR 19, 1990	55 FR 10062

335-3-5-.06 **State Clean Air Interstate Rule (CAIR) SO₂ Trading Program General Provisions**

(1) General. The Environmental Protection Agency Regulations, and the Appendices applicable thereto, governing the State Clean Air Interstate Rule (CAIR) SO₂ Trading Program, under § 110 of the Clean Air Act and 40 CFR § 51.124, are incorporated by reference as they exist in 40 CFR 96, Subpart AAA.

(a) The materials incorporated by reference are available for purchase at a cost of \$6.00 and inspection at the Department's offices at 1400 Coliseum Boulevard, Montgomery, Alabama 36110. The materials are also available on the web at http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=92a9bc8685fa295df08f42c103b6a1fc&tpl=/ecfrbrowse/Title40/40cfr96_main_02.tpl.

(2) In the event of any conflict between the regulations contained in Rule 335-3-5.06 through 335-3-5-.14 and regulations contained in other Chapters of this Administrative Code, the more stringent regulations will take precedence.

(3) Definitions. For the purpose of Rules 335-3-5-06 through 335-3-5-.14, the definitions listed in 40 CFR § 96.202, Subpart AAA, will apply.

Author: Ronald W. Gore.

Statutory Authority: Code of Alabama 1975, §§22-28-10, 22-28-11, 22-28-14, 22-28-18, 22-28-20, 22-28-22, 22-22A-5, 22-22A-6, 22-22A-8, and 41-22-9.

History: Effective Date: October 31, 2007.

Amended:

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	MAR 07, 2007	OCT 1, 2007	72 FR 66559

5-3-5-.07 CAIR Designated Representative for CAIR SO₂ Sources

(1) General. The Environmental Protection Agency Regulations and the Appendices applicable thereto, governing CAIR Designated Representative for CAIR SO₂ Sources, are incorporated by reference as they exist in 40 CFR 96 Subpart BBB. (The materials incorporated by reference are available for purchase and inspection at the Department's offices.)

Author: Ronald W. Gore.

Statutory Authority: Code of Alabama 1975, §§22-28-10, 22-28-11, 22-28-14, 22-28-18, 22-28-20, 22-28-22, 22-22A-5, 22-22A-6, 22-22A-8, and 41-22-9.

History: Effective Date: October 31, 2007.

Amended:

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	MAR 07, 2007	OCT 1, 2007	72 FR 66559

335-3-5-.08 Permits

(1) General. The Environmental Protection Agency Regulations and the Appendices applicable thereto, governing CAIR SO₂ Trading Program Permit- Regulations, are incorporated by reference as they exist in 40 CFR 96 Subpart CCC. (The materials incorporated by reference are available for purchase and inspection at the Department's offices.)

Author: Ronald W. Gore.

Statutory Authority: Code of Alabama 1975, §§22-28-10, 22-28-11, 22-28-14, 22-28-16, 22-28-18, 22-28-20, 22-28-22, 22-22A-5, 22-22A-6, 22-22A-8, and 41-22-9.

History: Effective Date: October 31, 2007.

Amended:

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	MAR 07, 2007	OCT 1, 2007	72 FR 66559

335-3-5-.11 CAIR SO₂ Allowance Tracking System

(1) General. The Environmental Protection Agency Regulations and the Appendices applicable thereto, governing CAIR SO₂ Allowance Tracking System, are incorporated by reference as they exist in 40 CFR 96 Subpart FFF. (The materials incorporated by reference are available for purchase and inspection at the Department's offices.)

Author: Ronald W. Gore.

Statutory Authority: Code of Alabama 1975, §§22-28-10, 22-28-11, 22-28-14, 22-28-18, 22-28-20, 22-28-22, 22-22A-5, 22-22A-6, 22-22A-8, and 41-22-9.

History: Effective Date: October 31, 2007.

Amended:

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	MAR 07, 2007	OCT 1, 2007	72 FR 66559

335-3-5-.12 CAIR SO₂ Allowance Transfers

(1) General. The Environmental Protection Agency Regulations and the Appendices applicable thereto, governing CAIR SO₂ Allowance Transfers, are incorporated by reference as they exist in 40 CFR 96 Subpart GGG. (The materials incorporated by reference are available for purchase and inspection at the Department's offices.)

Author: Ronald W. Gore.

Statutory Authority: Code of Alabama 1975, §§22-28-10, 22-28-11, 22-28-14, 22-28-18, 22-28-20, 22-28-22, 22-22A-5, 22-22A-6, 22-22A-8, and 41-22-9.

History: Effective Date: October 31, 2007.

Amended:

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	MAR 07, 2007	OCT 1, 2007	72 FR 66559

335-3-5-.13 Monitoring and Reporting

(1) General. The Environmental Protection Agency Regulations and the Appendices applicable thereto, governing CAIR SO₂ Monitoring and Reporting, are incorporated by reference as they exist in 40 CFR 96 Subpart HHH. (The materials incorporated by reference are available for purchase and inspection at the Department's offices.)

Author: Ronald W. Gore.

Statutory Authority: Code of Alabama 1975, §§22-22A-5, 22-22A-6, 22-22A-8, 22-28-14, 22-28-19, 22-28-20 and 41-22-9.

History: Effective Date: October 31, 2007.

Amended:

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	MAR 07, 2007	OCT 1, 2007	72 FR 66559

335-3-5-.14 CAIR SO₂ Opt-in Units

(1) General. The Environmental Protection Agency Regulations and the Appendices applicable thereto, governing CAIR SO₂ Opt-in Units, are incorporated by reference as they exist in 40 CFR 96 Subpart III. (The materials incorporated by reference are available for purchase and inspection at the Department's offices.)

Author: Ronald W. Gore.

Statutory Authority: Code of Alabama 1975, §§22-28-10, 22-28-11, 22-28-14, 22-28-18, 22-28-20, 22-28-22, 22-22A-5, 22-22A-6, 22-22A-8, and 41-22-9.

History: Effective Date: July 11, 2006.

Amended: April 3, 2007.

History: Effective Date: October 31, 2007.

Amended:

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	MAR 07, 2007	OCT 1, 2007	72 FR 66559